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Douglas Cumming
Chris Mallin *Editors*

Entrepreneurship, Finance, Governance and Ethics

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Contents

Chapter 1
Overview

Robert Cressy, Douglas Cumming, and Chris Mallin

Financial bubbles have regularly grown, burgeoned and burst many times in the history of the world. One needs only to mention the British South Sea bubble of 1720, the Dutch Tulip bubble of 1637, the Wall Street Crash of 1929, the Dot Com bubble of 1998–2000, and the mortgage securitization bubble of 2007, to raise a wry smile on the faces of those addressed. Whilst the bubbles were essentially based on financial market and real estate speculation, they had serious 'real economy' consequences. Such aftermaths varied in length and intensity depending on how widespread and deep they were (Knidleberger and Aliber 2005). But whole economies were often afflicted and in 1929 much of the world, was thrown into depression when the 1920s bubble finally burst. Galbraith (1961) writing about the 1929 crash and its decade long aftermath of global depression, noted that 'There is an essential unity in economic phenomena; no Chinese Wall separates the fiduciary from the real'. But because of the lack of 'system memory' (in the 1990s we had a decade of 'Rational expectations' monetarism in which producers and consumers were endowed with perfect foresight and the money supply 'merely' influenced the price level), the global spread of the celebrity culture, closer global integration of markets and lightening speed of information transmission, the effects of the boom-bust cycle have been in recent times no less than cataclysmic (Ferguson et al. 2007). Nor have the effects of the 2007 crash been fully experienced at the time of writing (end-2011). Some believe we have just reached 'the end of the beginning' (Churchill 1942).

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A key feature of all such financial bubbles is the growing role of greed and corruption facilitated by the unbridled growth of credit to consumers and businesses and the destruction of consumer and business confidence that follows them. Recent history is instructive in this respect. A root cause of the Wall Street crisis of 1929 and the decade of global depression that followed in its wake, was the role of leverage. Leverage in 'The roaring 20s' took the form of borrowing to finance house price purchases and stock market investments, be it in the form of bank borrowing (for mortgages or for high beta stock portfolios) or simply very low margin requirements on transactions. Before long, speculation soon takes hold so that goods (particularly houses and stocks) are bought not for their own fundamental values but for the simple reason that their prices are expected to rise (Shiller 2005). Prevailing economic theory seems to be no guide in these times because its assumptions (perfectly functioning markets reflecting fundamental values) are progressively eroded. Indeed so false are these assumptions nearing the peak of a boom, they take on the mischievous status of a religion when there is no God to support these beliefs. Soros (2008) has documented very well the entirely legal manipulation of financial markets that takes place during short- *and long-term* Boom-Bust cycles.

In our own time and in line with most, if not all, financial crises (Knidleberger and Aliber 2005) at the heart of the high tech boom and bust of the year 2000, the global 2008 financial crisis was a series of iconic corrupt practices. The most infamous of these in the Dot Com bubble (Cassidy 2002) was the corrupt accounting and other practices at the US energy giant Enron which, when whistleblown in 2001, resulted in the then biggest corporate collapse in history, involving over $50 billion of losses to share- and bond-holders not to mention customers and suppliers. In that year Enron, a company heralded as 'America's best run company' for a decade and garlanded by the likes of Time, Business Week and Fortune magazine, announced that it had overstated earnings in its accounts for the previous 4 years by over half a billion dollars. This news sent its share price into free fall and it filed for bankruptcy shortly after. The collapse of Enron also triggered the collapse of its auditor and consultant, the global accounting firm Arthur Anderson. Their role in keeping the illicit book-keeping at Enron under close wraps was critical in the process of hoodwinking both the public and its investors. Cumming and MacIntosh (2004) document many more of the fraudulent and/or corrupt practices that occurred in the Internet boom.

An iconic corruption in the crash of 2007 was Bernie Madoff's Ponzi US scheme. A Ponzi scheme is an entirely bogus investment syndicate that, instead of using new investor money to buy stocks, uses it to pay out dividends to existing investors. In the Madoff case this syndicate boasted a constant (zero standard deviation) return of 10% to its gullible investors for over a decade. The scheme relied on the creation of confidence by a confidence trickster and on a long-term booming stock market for its viability. Once this market turned significantly down, returns could not be maintained, the scheme was exposed as a sham and its creator as a fraudster. Madoff, the Director, had made an unimaginable $65 billion in elicit profits over a 20 year stint and was subsequently incarcerated for 150 years for his nefarious activities. Much of this money is unlikely ever to be found.

However one looks at it, the lack of strong corporate governance is another essential ingredient in the boom-bust cycle. Why were these corrupt practices not discovered earlier? What were the auditors doing? Was there proper control over payments to Directors? And so on.

This book attempts to address empirically, and at the micro level, the role of business ethics on performance, the extent of corporate corruption in various economies in the world, the effects of corruption on company performance and finally the measures governments might introduce to deal with the issues.

It has four parts dealing with respectively Entrepreneurship, Venture Finance and Ethics (Part I), The Impact of Regulation and Financial Structure on Ethics and Governance (Part II), Ethics, Fraud and Managerial Decisions (Part III) and Ethics and Governance in China (Part IV).

Part I of the book examines the role of ethics and governance in entrepreneurship and venture capital and private equity finance. There are four chapters that highlight the importance of ethics and governance to the level and performance of entrepreneurial activity around the world (Chap. 2), the ability of investors to deal with financial distress (Chap. 3), deal structure (Chap. 4), and investment fund structure and performance (Chap. 5). These chapters show uniquely the relevance of ethics and governance in entrepreneurship with reference to empirical data. The evidence in Chap. 2 shows that ethics matters to entrepreneurs in different countries, and there are big differences in ethical practices across countries. The evidence in Chap. 3 shows that private equity firms are better placed to deal with ethics and governance issues for firms in financial crisis than other types of investors. The evidence in Chap. 4 shows that private equity investors provide unique financing structures for socially responsible businesses. Finally, Chap. 5 shows that ethics matters for how private equity funds set up compensation structures in different countries around the world, and which, in turn, drastically affects performance at the private equity fund level.

More specifically, Chap. 2 by April Knill, "The Value of Country-level Perceived Ethics to Entrepreneurs Around the World," examines the riskiness of investing in private equity and the resulting importance of trust among private firms that are subject to investor risk aversion. Using a dataset that spans 33 countries from 1998 to 2004, the author examines the impact of country level ethical standards (based on two independent measures) on the performance and outcome of private firms. The data show that entrepreneurial firm performance is positively influenced by perceived country-level ethical standards. Knill's evidence and analysis leads to three main findings. Firstly, a higher level of ethics is associated with enhanced entrepreneurial financial performance measured by net sales and net income. Secondly, a higher level of ethics is associated with an increased efficiency of the entrepreneurial process, as evidenced by a shorter time to exit, a lower probability that an entrepreneurial firm will remain private and an increased probability that a firm will exit via acquisition. Thirdly, a higher level of ethics enables entrepreneurial firms to exit via IPO at no additional cost measured by IPO underpricing.

Chapter 3 by Robert Cressy and Hisham Farag, "Do private equity firms respond better to financial distress than PLCs?" examines new private equity data on

buyouts that became financially distressed over the period 1995–2008. The authors consider empirically whether private equity owned companies (buyouts) in financial distress (Receivership/Administration) have better recovery rates for secured debt than their publicly owned (PLC) counterparts. The data indicate that the recovery rates of buyouts (amount recovered in proportion to total assets) are over twice that of PLCs. Administration does not have an effect on debt recovery rates even though it is a faster way to deal with distress. The authors consider other factors that affect recover rates, including the number of creditors, company size and leverage. Finally, the authors examine factors determining the time a firm spends in recovery and find a significant effect of the recovery procedure used (Administration is shorter) and the date of appointment of the Administrator or Receiver (later years have shorter durations).

Chapter 4 by Luisa Alemany and Mariarosa Scarlata, "Deal Structuring in Philanthropic Venture Capital Investments," considers a new issue which has received scant academic attention: philanthropic venture capital. Philanthropic venture capital considers financing entrepreneurial ventures with the aim of maximizing the social return on the investment. Alemany and Scarlata examine the deal structuring phase of philanthropic venture capital investments in terms of valuation, security design and contractual covenants. Empirical evidence is provided for Europe and the United States. The data examined emphasise that the 'non-distribution constraint' holding for non-profit social enterprises is an effective tool to align the interests of both investor and investee. As a result, philanthropic investors are more like stewards than principals. It is noteworthy that the same venture capitalists structure their non-philanthropic investments in the same way as traditional venture capitalists regarding moral hazard and other risks of investment.

Chapter 5 by Douglas Cumming, Grant Fleming, Sofia Johan and Dorra Najar, "Law and Corruption in Venture Capital and Private Equity," examines an international sample of venture capital and private equity funds to assess the role of law, corruption and culture in setting fund manager fees. The authors provide recent evidence from news and other media that fee setting in venture capital and private equity organizations is rife with corruption and absence of legal scrutiny. By examining an international sample of fees, the authors are able to compare various determinants of fees, and to show that the data examined strongly indicate that corruption, culture and legal settings are much more significant in determining fees than fund manager characteristics and/or market conditions. In particular, the authors show that in countries with better legal conditions, fixed fees are lower, carried interest fees are higher, clawbacks are less likely, and share distributions are more likely. Countries with lower levels of corruption have lower fixed fees and higher performance fees, and are less likely to have clawbacks and cash-only distributions. They also show that Hofstede's measure of 'power distance' is negatively related to fixed fees and the use of cash-only distributions, but positively related to performance fees and clawbacks. Furthermore, the authors examine the impact of country differences in corruption and law quality on private equity returns. To do this, the authors utilize a unique data set comprising over 750 returns to private equity transactions across 20 developing and developed countries in Asia. They find that the quality of the prevailing legal system (including legal protections

for investors) is positively related to returns. The main explanation for this finding is that inefficient legal protections negatively impact transaction structures and create economic uncertainty when VCs exit investments. However, the authors also find that private equity returns are higher in countries with higher levels of corruption. This finding is consistent with the view that private equity managers bring about organizational change to alleviate the costs of corruption.

In summary, the data and analyses in Part I of this book provide a unifying theme and complementary evidence from entrepreneurs, venture capital and private equity investors that ethical issues are significant for the entrepreneurial process. Ethics and governance influence the extent and performance of entrepreneurship. Private equity investors are well placed to deal with governance problems in times of financial distress. Venture capital and private equity investors are also influenced by social responsibility in forming deal structures. Moreover, venture capital and private equity funds enhance such deal structures in response to concerns over ethics and corruption, which in turn impacts fund performance.

Part II of this book covers the topics that relate regulation and financial structure to ethics and governance. Part II is comprised of five chapters pertaining to issues of how mandated governance structures may contribute to improve ethical outcomes for newly listed companies (Chap. 6), the legal responsibilities of controlling shareholders for minority shareholders (Chap. 7), the responsibilities of investment fund managers voluntarily adopted legal standards to act responsibly and ethically and investor demand for such self imposed governance standards (Chap. 8), and portfolio management and portfolio selection of socially responsible investment portfolios (Chaps. 9 and 10, respectively). Chapter 6 shows that a nominated advisor requirement for the junior stock exchange in London, the Alternative Investment Market, may help mitigates issues of unethical behavior among newly listed companies. Chapter 7 provides an in-depth legal analysis of the role of majority shareholders to minority shareholders in a civil law (France) versus a common law (United States) regime. Chapter 8 examines the role of investor protection in mutual funds with regard to the use of voluntarily adopted legal standards, and explains how such standards are increasingly common across many countries around the world, and the significant investor demand for the use of such standards around the world, particularly after the recent financial crisis. Chapters 9 and 10 consider the importance of portfolio management of socially responsible investment portfolios, and how managerial practices change for socially responsible funds, as well as portfolio selection.

In particular, Chap. 6 by Chris Mallin and Kean Ow-Yong, "The Development of the UK Alternative Investment Market – Its Growth and Governance Challenges," examines the development of the UK Alternative Investment Market (AIM) since it was launched in 1995 and its growth with over 1,200 companies currently listed. The authors highlight potential pitfalls of the scant regulation on AIM which in turn give rise to corporate governance and ethical issues. The authors examine the central role of the nominated advisor (NOMAD) and the potential governance and ethical implications. Finally, the authors discuss some of the concerns that AIM participants have about the market, including recent scandals on AIM and discuss the implications of their results for academics, investors and policymakers alike.

Chapter 7, by Celine Gainet, entitled "Controlling Shareholders' Fiduciary Duties Owed to Minority Shareholders – A Comparative Approach: the United States and France", examines the duties, direct and indirect, that controlling shareholders have towards minority shareholders. Whereas controlling shareholder's rights are quite considerable, their duties by contrast tend to be very limited. This chapter shows that a balance between controlling shareholders' rights and duties is needed and analyzes the equilibrium developed in two legal systems: American common-law and French civil law. Whereas controlling shareholders seem to be assigned more duties in France than in the US, enforcement rules and case laws act to mitigate this fact.

Chapter 8 by Douglas Cumming, Gael Imad'Eddine and Armin Schwienbacher, entitled "Harmonized Regulatory Standards, International Distribution of Investment Funds and the Recent Financial Crisis," considers for the first time the impact of fund regulation on the international distribution of investment funds. The authors study the role of the 2001 UCITS Directive of the European Union, put in place to mitigate fraud and promote investor confidence throughout the Union. The authors examine the impact of UCITS on international distributions of European investment funds over the 2002–2009 period. The data examined indicate that the UCITS regulatory structure has significantly facilitated cross-border fund distributions, though UCITS has had less success in facilitating distributions among smaller fund promoters. Also, UCITS funds, especially UCITS equity funds, are found to have lost some of their advantages in enhancing cross-border distributions during the recent financial crisis. Finally, the authors record a growing interest in UCITS outside Europe, notably in Asia, in recent times.

Chapter 9, by Annalisa Fabretti, Stefano Herzel, entitled "Active Management of Socially Responsible Portfolios," considers the problem of an investor who wishes to allocate her wealth reflecting socially responsible (SR) criteria. The reduction in the investment set opportunity that this involves produces a cost for the investor which they call the "cost of sustainability". The investor is aware that the financial performance of actively managed SR portfolios may be better or comparable to those of conventional portfolios. For this reason, the investor decides to entrust her wealth to a portfolio manager able to produce accurate forecasts of SR asset returns. The investor's task is then threefold: (a) hiring a manager who can offset the cost of sustainability; (b) setting a bonus to compensate the manager for the investment restriction; (c) attracting only the best and more motivated managers to the task. They devise a theoretical solution to these problems and apply their results to data from the S&P500 firms which are screened by KLD scores.

Chapter 10, by Stefano Herzel and Marco Nicolosi entitled "A Socially Responsible Portfolio Selection Strategy", proposes a new theoretical methodology to integrate Socially Responsible (SR) standards into the process of investment decisions. They use SR scores of companies in the S&P500 and in the Domini Social Index (DSI) to define the level of SR of a portfolio. They model this as a linear combination of the SR scores of the single stocks with coefficients given by the portfolio's weights. Portfolios are formed that minimize the tracking error from the DSI whilst at the same time improving the SR measure. The analysis of the performances of the portfolios show that the improvement of the SR is usually

possible at a small cost in terms of tracking error, and that the enhanced portfolios produced, in most of the cases, better financial performance than the benchmark.

In summary, Part II of this book provides new theory and empirical evidence on a causal link between regulation, improved governance and ethical outcomes for the investment industry. These links are evidenced in the market for newly public firms, particularly those on junior stock exchanges (Chap. 6), in legal obligations for majority to minority investors (Chap. 7), in voluntarily adopted legal standards for mutual fund governance, investment portfolio management (Chaps. 8 and 9) and in investment portfolio selection (Chap. 10).

Part III of this book considers topics on ethics, fraud and managerial decisions. It comprises four chapters that deal with issues pertaining to ethical issues surrounding managerial decisions, including the scope of social responsibility for firms (Chap. 11), directors' equity stakes in their companies (Chap. 12), the decisions of managers to engage in unethical behavior (Chap. 13), and the decisions of managers to engage in climate control and environmental mitigation (Chap. 14). Chapter 11 examines various forces, such as competition, that influence the extent of managers engagement with social responsibility. Chapter 12 explores the role of directors' equity holdings in the companies with which they are associated in terms of managerial decisions and in turn the impact of these decisions on firm performance. Chapter 13 examines determinants of managerial fraud and the subsequent consequences of such fraud. Finally, Chap. 14 considers managerial responses to changes in physical climate and environmental focussing on the largest publicly traded companies in the world.

Specifically, Chap. 11 by Celine Gainet, entitled "Corporate Social Responsibility Boundaries" addresses the dilemma that companies face between what society as a whole demands and the necessity of being economically efficient. Why do only some companies claim they act in a socially responsible way? Because of international competition, policy makers do not act to improve environmental, social and societal issues until it becomes socially necessary, and companies act in a socially responsible way when social necessity is combined with a globally low reputation. Chapter 11 provides a theoretical insight into the roles of companies within a society. It addresses the legitimacy of companies in creating a *green* world under the constraint of maintaining democratic structures. To be legitimate in social actions they undertake privately, companies should go through a corporate politicization process.

Chapter 12 by Sanjai Bhagat and Heather Tookes, entitled "Voluntary and Mandatory Skin in the Game: Understanding Outside Directors Stock Holdings," examines the determinants of equity ownership by outside directors and the relationship between ownership and operating performance. The authors make use of ownership requirements to shed light on the determinants of director holdings and to separate voluntary from mandatory holdings of directors. The analysis shows that *mandatory* holdings are unrelated to future performance, which is consistent with the theory that ownership requirements reflect optimal ownership levels. By contrast, the analysis indicates that *voluntary* holdings are positively and significantly related to future performance. This latter finding suggests that voluntary holdings incentivize management.

In Chapter 13 by Stefano Bonini and Diana Boraschi-Diaz, "The Causes and Financial Consequences of Corporate Frauds," the authors reviewthe wave of corporate scandals that has hit the market in the last decade, directing attention to the effect of these events on shareholder value, corporate governance and stock market reactions. Given this evidence a growing body of research has investigated the determinants of corporate fraud, and the effects of such frauds on investors and stakeholders wealth. It has attempted to identify channels of, and tools for, the early detection of frauds and therefore ways to reduce the loss in social welfare. This chapter provides a comprehensive view on the state of the current research on these issues and provides directions for future research.

Chapter 14 by Raj Aggarwal and Sandra Dow, entitled "Corporate Governance and Corporate Strategies for Climate Control and Environmental Mitigation," considers strategic corporate responses to climate change and other environmental challenges. The authors suggest that these problems do not seem to fit in the primary domain of corporate management as such decisions are often not seen as profit-maximizing over the short run and are generally not consistent with executive incentives. The authors challenge this view by analyzing 500 of the largest U.S. firms to show that some climate change responses may indeed be firm value-maximizing, and that such decisions can be expected to reflect the nature of a firm's corporate governance. Specifically, the authors document that institutional ownership and board entrenchment significantly influence climate change mitigation and environmental impact policies of large firms.

In summary, Part III shows that managerial actions with an ethical dimension are affected by the environment in which firms operate (Chaps. 11 and 14), their ownership structure (Chap. 12), and have significant consequences for firm performance (Chaps. 12, 13 and 14). The evidence in Part III provides essential grounding for understanding how and why managers engage in ethical behavior, and the ethical consequences of managerial actions.

Part IV of this book covers ethics and governance in China. China is an interesting country for which a separate section of this book is devoted for the following reasons. Firstly, China is one of the fastest growing countries in a global context, and recently has achieved the status of second largest country in terms of GDP. Its global importance is no longer questionable. Secondly, popular press and conventional wisdom suggests that China's spectacular success has come to some degree at the expense of unethical conduct, such as the governing party's tendency to disregard the rule of law, the lack of political freedom and the lack of freedom of the press. Thirdly, much of the economic power in China is held by the state, so there are interesting unanswered questions regarding whether or not the state-owned companies are more ethical than their privately held counterparts. To this end, Chap. 15 examines whether or not Chinese state-owned companies have a governance role over mutual funds and are engaged in fraud in China. Chapter 16 considers executive compensation in China and its impact, if any, on ethics. Chapter 17 considers management buyouts of publicly listed companies in China and the effect of majority shareholders on minority shareholders and other governance issues. Chapter 18 considers controlling shareholders and dividend

payments among publicly traded companies in China. Taken together, these chapters provide empirical evidence on the governance structures and outcomes in one of the most important emerging countries in the world.

Specifically, Chap. 15, by Wenxuan Hou, Edward Lee and Konstantinos Stathopoulos, entitled "The role of mutual funds in deterring corporate fraud in China," investigates whether mutual fund ownership deters corporate fraudulent behavior among Chinese listed firms. While the existing literature on corporate fraud in China has focused mainly on the impact of internal governance mechanisms, limited attention has been paid to the effect of external governance mechanisms. In China where investor protection and legal enforcement are relatively weak, mutual fund ownership is expected to enhance the effectiveness of the stock market to deter managerial expropriation. This is because mutual funds are institutional investors that have more resources and expertise than individual investors that can be used to monitor firm executives. The impact of mutual fund ownership in deterring fraudulent activities is expected to be greater among Chinese listed firms under private control than state control. This is because privately controlled firms receive less financial support from the government and are more reliant on external funding via the capital market. The authors confirm empirically the aforementioned assertions. Their findings imply that mutual fund ownership and state ownership generate offsetting corporate governance effects.

Chapter 16 by Shujun Ding, Chunxin Jia, Yuanshun Li and Zhenyu Wu is on the topic: "Institutional Shareholders and Executive Compensation: An Ethical View." Institutional shareholders are shown to be effective monitors in curbing executive compensation in mature capital markets. However this study which presents findings from Chinese stock markets, and indicates the possible collusion between institutional shareholders (e.g. mutual funds) and executives in publicly listed companies. Mutual funds in China fail to serve as an effective monitoring mechanism for executive compensation, suggesting that ethics has little role to play when mutual funds and management of listed companies follow their self-interests. Further analysis also demonstrates that, while bank-affiliated mutual funds are no better monitors than non-bank-affiliated ones, joint-equity-bank-affiliated ones are more effective monitors than state-owned-bank-affiliated ones.

Chapter 17 by Mike Wright, Yao Li, and Louise Scholes, entitled "Chinese Management Buyouts and Board Transformation," assesses the extent to which MBOs of Chinese listed corporations enable a balance to be achieved in terms of facilitating growth while maintaining the interests of other (minority) shareholders. Using novel, hand-collected data from 19 MBOs of listed corporations in China, the authors examine the extent to which boards are changed to bring in executive and outside directors with the skills to grow and restructure a business. This is contrasted with the extent to which outside directors become involved in developing the business rather than fostering the interests of all shareholders. They find little evidence that outside board members have the skills to add value to the MBO firms. Boards appear to focus mainly on related-party transactions with some more limited attention to growth strategies. Outside directors do not seem to openly disagree with incumbent managers on the disclosure of their actions but may express their views and exert pressure behind the scenes.

Chapter 18 by Huaili Lv and Wanli Li, "Multiple Large Shareholders and Joint Expropriation with Dividend Payments," studies the impact of multiple large shareholders on dividend payments. This chapter examines the association between cash dividends and the shareholders balancing mechanism (SBM) in China, using alternative exogeneity and endogeneity assumptions regarding corporate ownership structure. It explores, whether paying cash dividends is a means of protection for, or involves the expropriation of, minority shareholders' interests. The authors find significant negative associations between cash dividend payments and the SBM of non-controlling large shareholders under the exogeneity assumption, and the SBM of tradable shareholders under the endogeneity assumption. The findings suggest that cash dividends are used as a manner of 'tunnelling' by the controlling shareholder. It r also shows that the SBM of non-controlling shareholders has a significant positive effect on cash dividends, especially for companies paying abnormal dividends. The results imply that in China's capital market, cash dividend payments not only play the role of expropriating minority shareholders' interests by the controlling shareholder, but also by the coalition of controlling and non-controlling large shareholders. The findings confirm the tunnelling and joint expropriation incentive of corporate dividend policy, and suggest that the presence of multiple large shareholders doesn't always alleviate firm's agency costs and protect the benefits of minority shareholders.

In summary, Part IV provides a unique and important perspective on ethics and corporate governance in China. The unique evidence presented from China deals with key topics in finance and ethics of interest to the world. These topics include mutual fund governance, institutional ownership, management buyouts and dividends. This work promises to pave the way for growing interest in the Chinese economy in years to come.

Future research in the area of finance and ethics offers a wealth of opportunities and unexplored issues with a global dimension. Firstly, with respect to the financing of entrepreneurs, Part I of this book showed that entrepreneurship and finance and ethics are inextricably linked by the activities of venture capital and private equity investors. But how important is ethics to other types of investors, such as banks or business angels in different countries? Do these differences depend on institutional and legal conditions in these countries? What is the impact of such differences on self-selection into entrepreneurship and does it affect entrepreneurial outcomes in terms of real growth, patents, and financial performance?

Secondly, with respect to financial regulation, governance and ethics, Part II of this book showed that regulation has important implications for ethics in newly public firms, for minority shareholder protection, and for the funds management industry. At the time of preparation of this book t recent changes in global regulation, including items pursuant to changes in MiFID rules in Europe, and Dodd-Frank rules in the United States, give rise to a wealth of unexplored empirical issues that are the subject of follow-up work. More specifically, future work might examine and quantify the costs and benefits of regulatory changes to influence ethical conduct and fraud mitigation. The changes that have been happening around the world provide a rich laboratory of natural experiments for which empirical

studies might shed much light; for example, on optimal regulatory design in the financial services industries.

Thirdly, in respect of managerial actions and ethics, Part III of this book provided much evidence that managerial actions are influenced by their institutional and economic environment. Moreover, the chapters in Part III showed significant consequences of managerial incentives for ethical conduct. Future research might examine in more detail precisely how ethical managers are selected, how internal organizational structures impact ethical conduct over time, and how managers with different characteristics respond to changes in economic circumstances and regulation. To this end, there are rich opportunities for future work that combines empirical methods and theoretical perspectives across a multitude of disciplines in ethics, management, law, finance and beyond.

Finally, regional analyses also provide fruitful laboratories for studying ethical conduct. In this book we have provided one such regional focus, namely on China, now one of the fastest growing most important economies in the world. To be sure, there is ample scope for more work on fraud and ethics in China. For instance, future applied scholars might examine the effectiveness of market design changes to enhance governance in companies on the Shanghai and Shenzhen stock exchanges. and market manipulation by investors in these markets. Other empirical work could examine regional differences in entrepreneurship and ethics in China. More generally, future work might address these issues in developed and developing countries across the world.

The complementary nature of the contributions presented in this book is testament to the quality of the authors' work. As Editors, we have not only learned a great deal from reading these 18 chapters, but we have also enjoyed immensely the process of corresponding with the authors. We would therefore like to express our gratitude to the contributors for their excellent and timely contributions to this book.

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Part I
Entrepreneurship, Venture Finance and Ethics

Chapter 2
The Value of Country-Level Perceived Ethics to Entrepreneurs Around the World

April Knill

Introduction

Following the "Great Recession" in 2007, there was a collective call by U.S. investors for increased disclosure by private equity funds and venture capitalists (VCs). Supporting these calls for regulation, a study by Cumming and Knill (2012) finds that enhanced levels of securities laws enforcement (such as disclosure) increase the supply and demand of VC, and enhance the likelihood that the portfolio companies will exit via IPO – the most desired mode of exit.[1] Although the final version of the bill going through U.S. Congress was reworded to exclude VCs and funds smaller than $100 million,[2] the white elephant in the room remains. Investors still don't trust financial institutions and this distrust will likely permeate the private equity arena since VCs and other private equity investors are notoriously tight-lipped in their strategies/investments. This collective dearth of trust leaves room for credible ways companies can signal their value and integrity to gain the trust necessary for investors to take the plunge of investing, especially in an entrepreneurial firm. It further begs the question whether the ethics of the average firm in a country can benefit entrepreneurs, who are at an increased risk of failing, in that same country.

This chapter examines the relationship between country-level indicators of perceived ethics and the performance as well as outcome of private firms. The paper has three main findings. First, a higher level of ethics is associated with enhanced entrepreneurial financial performance. This positive relationship is largely robust to

[1] The other mode of exit examined in this chapter is via mergers/acquisition.

[2] Though as of May 12, 2010, Senator Jack Reed (Democrat – Rhode Island) is pushing to include private equity and venture capital funds as well, which would force them to either register and open their books to state regulators, or register with the Securities Exchange Committee. *Source:* http://dyn.politico.com/printstory.cfm?uuid=83766275-18FE-70B2-A8A84F19C017C8C6

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the definition of ethics and two proxies for financial performance: net sales and net income (both scaled by total assets). Second, the paper finds that higher levels of ethics are associated with an increased efficiency of the entrepreneurial process, as evidenced by a shorter time to exit. Specifically, higher levels of ethics are associated with a decreased probability that an entrepreneurial firm will remain private and an increased probability that a firm will exit via acquisition. Last, those entrepreneurial firms in nations with higher levels of perceived ethics that are able to exit via IPO do so at no additional cost. Explicitly, the underpricing of IPOs in nations with higher levels of ethics is not significantly different than that in nations with lower levels of ethics.

Beginning with the corporate scandals of WorldCom and Enron, the pendulum started swinging back toward finding value in ethics and integrity in business. Society is showing a growing intolerance for greed, corruption, and profit without a conscience (i.e., environmental concerns).[3] Responding to this trend, universities are adding ethics curriculum to their educational programs.[4] During a time where the greed of a few has resulted in devastation for many around the world, citizens of many nations are looking for ethical corporate leadership on which they can depend. This chapter may be of interest to managers of small businesses, who may fear that an ethical approach to running a business might result in reduced competitiveness. In the same vein, the results may be of interest to VCs looking for investments; knowing that ethical behavior can lead to benefits with regard to financial performance and the efficiency of the entrepreneurial process can help VCs to critically evaluate both investments and global expansion opportunities. Lastly, results may be of interest to regulators who are looking for a means of incentivizing this critically important sector of the economy to take advantage of the benefits that are afforded those that maintain a positive reputation and ethics.

This chapter is organized as follows. The next two sections provide motivations for and against ethical behavior, providing a framework within which to perform this study. The subsequent section "Data" provides detail on the data used. Thereafter the empirical method is described, followed by the main results and robustness tests. The final two sections provide an analysis of limitations as well as potential for future work, and conclusions.

Agency Theory and Ethics in Business

In their seminal 1976 work, Jensen and Meckling describe the pitfalls of the separation of ownership and control that occurs when managers make decisions about what to do with other people's money. Around this same time, the term moral

[3] Hamilton (1995), White (1995), Klassen and McLaughlin (1996), as well as Dowell et al. (2000) all use event study methodology to show that firms with "greener" management practices have superior stock price returns relative to firms with poor practices.

[4] http://blogs.forbes.com/csr/2010/05/18/csr-and-the-job-hunt/

hazard (Holmstrom 1979) was introduced. Holmstrom's work gave rise to much research on agency theory and mechanisms that could be created to limit the perquisite consumption of management (i.e., unethical behavior of those that control the firm's money). For example, a large line of literature examines how the interests of management can be aligned with those of shareholders. Papers such as Blinder (1990), Stroh et al. (1996), Bloom and Milkovich (1998), Lazear (2000), and Banker et al. (2000) discuss the virtues and drawbacks of pay-for-performance incentive alignments. A large line of literature in management looks at the strategic advantages of a good corporate reputation. Papers such as Shapiro (1983), Barney (1991), Kay (1993), Roberts and Dowling (2002), Orlitzky et al. (2003), and Porter and Kramer (2006) examine the benefits of maintaining a good image in the corporate community. Adding a finance perspective to this line of study, a plethora of papers analyze the financial benefits of maintaining an ethical and reputable environment in companies. That among these is: Herremans et al. (1993), Harrison and Freeman (1999), Damodaran (2003), Anderson and Smith (2006), Beurden and Gossling (2008), and Wang and Smith (2008). Still another large line of literature analyzes the value of credible corporate governance of a firm's management. Gompers et al. (2003), Lemmon and Lins (2003), and Baek et al. (2004) are among these papers. A couple of these papers examine this relationship in times of crises, suggesting that it is when trust breaks down that the assurance that managers will not expropriate from the firm is vital. All of these papers, however, examine *public* firms. The intersection between ethics and firm value for private firms is largely unexplored.

Notwithstanding the result of extant literature that there is value in maintaining ethics in the business place, one could argue that maintaining ethics can make a firm less competitive. For example, honesty and integrity in reporting income may be painful when performance does not meet expectations. "Cooking the books" – however unethical – instead enhances the bottom line (at least in the short term). Small firms, the firms of interest in this study, have a particular incentive to bend ethical rules to compete. For example, in recessionary times, when small firms are most vulnerable, they may value survival over ethics. Even in good times, many entrepreneurial firms will fail. According to the [U.S.] Small Business Administration, only seven out of ten new employer firms last 2 years; only five last 5 years or more.[5] These daunting statistics give entrepreneurs (and the investors of these entrepreneurs) the incentive to persevere in those early years by any means possible. Indeed, Anderson and Reeb (2003) find that family-owned small businesses consider survival a major concern. Finding financial value in ethical behavior would create benefits for not only the entrepreneurs of the firms studied, but also policy makers. At a time when unemployment is at a record high, knowledge that country-level perceived ethics enhances private firm value could help policymakers harness an

[5] http://www.sba.gov/advo/stats/sbfaq.pdf

important tool that could lead to enhanced employment opportunities. Since small businesses often employ a significant portion of the working population (more than 99% of workers in the U.S.[6]), this is potentially quite impactful.

Ethics in Private Firms

Many private firms around the world are not obligated to provide financial data to regulatory agencies (e.g., Securities Exchange Commission in the United States). Although this sector is often simply a vehicle to gain public market access, some firms actually prefer to be private as evidenced by those firms that either avoid going public or by those that transition back into a private firm after being public. Private firms are often thought to have incentives that are better aligned than public firms due to the ownership concentration and the arm's length involvement of ownership; however, it is also much easier for unethical behavior to exist with no regulatory oversight.[7] Indeed, Morck and Yeung (2003) say that "[g]reater managerial ownership in family firms need not mitigate agency problems, especially when each family controls a group of publicly traded and private firms, as is the case in most countries. (p. 367)" Exacerbating matters further, the illiquidity and risk that often exist in entrepreneurial ventures make it difficult to measure financial benefits, so impacts are not always transparent.

There has been a large literature in the management field on entrepreneurship and ethics. Sethi (1994) touches on the incentives of ethical behavior on private firms. Sethi's paper examines the strategies that might induce managers of these firms to act ethically. Longenecker et al. (1989) provide the results of a qualitative study that examines ethics in small business. Studies such as Teal and Carroll (1999) and Bucar and Hisrich (2001) find that entrepreneurs are generally more ethical than the managers of public firms. These studies are so plentiful in the management literature that Hannafey (2003) provides a useful survey.

The dearth of research on the financial consequences of entrepreneurial ethics is probably due to the unreliable nature of data in private equity and the fact that until recently, there were few indices of ethics. A study by Bloom et al. (2009) examines the impact of management practices on firm value. Specifically, the paper uses a survey to gauge management methods such as people management practices (hiring, firing, pay and promotions) and operations management practices (lean manufacturing, continuous improvement and monitoring). Though management practices and ethics can

[6] U.S. Small Business Association's Office of Advocacy defines a small business for research purposes as an independent business having fewer than 500 employees. Though this figure varies across nations based on the definition of "small", small businesses are irrefutably an economic driver in the majority of nations around the world.

[7] Bergemann and Hege (1998) create a model which specifically addresses the moral hazard present in venture capital relationships. Reid et al. (1997) examine risk management through the relationship between venture capital investors and investees.

be correlated, they are not necessarily the same thing, distinguishing Bloom et al.'s study from the present paper. To the author's knowledge, this chapter is the first study that analyses the financial impact of ethics on private firms. Using ethics indices by The World Bank (Kaufmann 2004) and Transparency International, this study attempts to fill this void by observing how the perceived level of ethics in a country affects private firm value.

Since by their nature private firms do not have stock prices, it isn't possible to do the typical analyses on firm value. To the extent that intertemporal valuation of venture-backed entrepreneurships is communicated, VentureXpert includes information on net income, sales, and total assets. These values, though clearly not perfect information, may be used to ascertain the impact of ethics on the financial performance of private firms. In a nation with a higher perceived level of ethics, it is quite possible that both investors and consumers are more willing to invest and support fledgling firms. It is important to remember here that though the World Bank index is a country-level variable; it is aggregated from the Executive Opinion Survey, which was completed by executives about their individual firm behavior in areas of ethics. The ethics indices from Transparency International are likewise created using surveys of professionals. Collectively, the ethics indices speak to the perception of how much the companies in these nations can be trusted, by consumers, competitors, and financiers. The more trustworthy the average company, the more likely it will have access to the capital[8] and customers that it needs to grow. This access should translate into better financial performance. Formally stated,

*H*1: The perceived level of ethics in a nation is positively related to the financial performance, as measured by net income and sales (scaled by total assets), of the private firm.

Along the same lines, if ethics are valuable to entrepreneurs, the efficiency of the VC process should be enhanced in countries with higher ethics. Enhanced access to capital and stakeholders that are willing to ascertain the trustworthiness of the entrepreneur could arguably shorten the time to exit. Indeed, Low and Abrahamson (1997) state "[b]elief in the venture's success is achieved through informal confidence building, such as incremental personal exchange and third-party reputation. In this manner, stakeholders develop personal familiarity with the firm and make positive assessments about the entrepreneur's competence and trustworthiness" (p. 436). In environments where there is an average level of ethics, this evaluation is less likely to be negative based on the lemon's problem (Akerlof 1970). This positive assessment should lead to fewer firms stagnating (failing or remaining private) and more firms exiting (via M&A or IPO). Formally stated,

*H*2: The probability of the portfolio company stagnating (exiting) falls (rises) with an increase in the country-level of perceived ethics in a country.

Following the literature examining the underpricing of IPOs (see, e.g., Ritter 1991; Loughran and Ritter 2002),[9] the initial return of the IPO can be used to gauge

[8] The ethics indices used in this chapter are positively correlated with the supply of venture capital. These results are available upon request.

[9] See also Gompers and Lerner (1999a).

the cost of going public for these firms. If entrepreneurs are ethical, they may be less competitive resulting in poor financial performance. This could ultimately delay exit or increase the "costs" of going public, i.e., the money left on the table when pricing their IPO. Alternatively, if ethics enhances their financial position, it is possible that the costs of going public may either be unaffected or decrease somewhat. Formally stated,

*H*3: The perceived level of ethics in a nation is non-positively related to the percentage change in the price of the initial shares from issue to close of the first trading day.

Data

Data on venture-back entrepreneurships, or portfolio companies (PCs) are collected from VentureXpert unless otherwise noted. Data on country-level perceived ethics are collected from Kaufman (2004) and Transparency International. Countries that appear in the sample are those covered by both sources. Coverage from Kaufman (2004) is used as the primary means of framing the sample, since the majority of indices come from this source. The time frame used is based on this index as well.

Entrepreneurs and VCs Characteristics

The sample includes entrepreneurs that have received their last VC investment between 1/1/1998 and 12/31/2004. This sample term criteria are used to be congruent with the time frame over which the Executive Opinion Survey (EOS) is taken (as used in Kaufmann 2004). Indices from Transparency International are created on an annual basis but are used from the same time frame, once again to be congruent with the EOS term.[10]

Specifics about the PC investment characteristics are obtained. They are: (1) Investment Term, (2) Years Since Last Inv, (3) Total Inv in PC, and (4) Industry Market-to-Book. Investment Term and Years Since Last Inv are included to control for the average term of investment. It is more likely that a firm would have exited the VC cycle if the term is longer or if the last investment occurred less recently. Total Inv in PC is included to control for the relationship funding has with PC performance and outcome. Industry Market-to-Book, collected from DataStream, is included to control for any cyclical impact regarding the industry. This is included

[10] In previous versions of the paper, analyses were performed using data collected on PCs that have their last investment subsequent to 1998 and the first investment prior to 2004 (which does not confine the data as strictly to the term 1998–2004). Results are qualitatively identical and are available upon request.

based on several papers in the area including Gompers and Lerner (1999b) and Cumming and Johan (2009).

Specifics about the VCs invested in the PCs is also created to control for the largely documented influence VCs have on their investees. These specifics are: (1) Portfolio Size/Mgr, (2) Prefer to Originate, (3) Corporate VC, (4) VC Expertise, (5) Risk and (6) VC Size. Portfolio Size per Manager accounts for the number of companies that each manager must oversee, and given the managerial benefits that VCs provide, arguably has a direct implication on PC performance and outcome. Staff numbers for this calculation are collected from Galante's Private Equity and Venture Capital Directory. Prefer to Originate is included to control for the VC's preferred role in a syndication and its influence on PC exit (Cumming and Johan 2009). According to Gompers and Lerner (1999b), syndicating first-round venture investments may lead to better decisions about whether to invest in firms. This implies that VCs that lead (or even participate in) a syndication will invest in higher quality PCs and the resulting probability of exit should be higher. Corporate VC is a dummy variable that indicates whether a VC is corporate or not. It is included to control for VC fund characteristics and follows Cumming and Johan (2009).[11]

Some VCs are just more knowledgeable than others due to experience and their gained skill set, leading to implications for both VC growth and PC current status. To control for this, a proxy for VC skill is included: Expertise. The number of funds a VC has successfully raised provides this proxy. This proxy implicitly assumes retention of VC management. This assumption should not be problematic as long as VC firms are able to hire similarly talented executives to lead their firms. Where this information is missing, it is assumed that the fund is the first in sequence. Expertise serves to control for VC grandstanding, which was brought to light by Gompers and Lerner (1996). They also serve to proxy the affiliation that is offered the PC. As the VC becomes larger and attains more clout in the industry, it will be able to offer its PCs more expertise, financial assistance, and certification in the ultimate exit strategy (Megginson and Weiss 1991; Hsu 2004). Therefore a proxy for the size of the VC is included. The number of companies in which the VC invests serves as this proxy.

Dummy variables for the riskiest sectors of the industry and stage diversification dimensions are added together to create the variable Risk. Gompers and Lerner (1999b) explain that investment at certain stages entails more risk, and Knill (2009) explains that investment in these stages, accordingly, offers more opportunity (for diversification) than others. Similarly, there are some industries that are riskier than others. Due to the different opportunity sets available in these categories, an index is included that sums the two dummy variables for the stage and industry perceived as riskier than the rest: (1) information technology (IT Dummy) and (2) early stage investments (Early Stage Dummy). Since each dummy variable can be at least zero

[11] For robustness, indicator variables for all 33 types of venture capitalist are included in the model (the base model in the paper includes only an indicator for corporate venture capitalists). As results do not change, they are left out for brevity but are available upon request.

and at most one, Risk is an index from zero to two. I include this index to neutralize any additional motivation to diversify and to account for any fund effects. Finally, VC Size is included to control for the potential effects of influence on PC outcome.

Macroeconomic Data

Macroeconomic variables such as Market Capitalization, Market Return, GDP per capita, Domestic Credit and VC Activity are included. Market Capitalization is used to control for the size of the public market, which has an impact on the probability that a PC goes public.[12] Market Return and GDP per capita are included to control for general market/economic conditions. This variable will likely pick up the countercyclical nature of the VC industry (Cumming et al. 2005; Gompers et al. 1998). Domestic credit is included to control for the likelihood that a firm will be able to access bank credit, a significant source of capital for entrepreneurial firms. Following studies such as Cumming and Johan (2009), the increased probability of exit during the IT bubble period (1998–2000) is controlled for in a Heckman analysis. Lastly, the level of VC Activity (number of deals) is included to control for the supply of VC in the market. Data included in macro-level analyses is primarily from World Development Indicators (World Bank). Market return, however, is taken from DataStream.

Ethics Data

Data on ethics is provided from two sources. The first is the World Bank. The data come from Kaufmann (2004) and measure the extent of anti-corruption and ethical practices that are upheld in 104 countries. The indices are formulated based on the responses to the Executive Opinion Survey[13] and use a scale from 0 to 100 to represent the percentage of firms in a nation that are ethical based on different criteria (from the EOS). The aspects that are included in these ethics indices are:

[12] IPOs are not possible for all firms due to the size of the public stock market. In some of these nations, there exist Alternative Investment Markets (AIMs). See, for example, Mallin and Ow-Yong (1998) for a discussion of this market.

[13] The Executive Opinion Survey is conducted every year by the Global Economic Forum (GEF) on countries representing approximately 98% of the world's gross domestic product. Firms representing the main sectors of the economy across all sizes are included in a list of potential firms to survey. From this list a random sampling is undertaken. In order to ensure that the sample is representative, each data collection partner follows strict sampling procedures (including dual stratification for the firm size and the sector of activity). Further information may be found at the following link: http://www2.weforum.org/en/initiatives/gcp/Global%20Competitiveness%20Report/PastReports/index.htm.

(1) the Corporate Illegal Corruption Component (CICC), (2) the Corporate Legal Corruption Component (CLCC), (3) the Corporate Ethics Index (CEI), (4) the Public Sector Ethics Index (PSEI), and (5) the Judicial/Legal Effectiveness Integrity Index (JLEI). [14] CICC is a measure that accounts for types of bribery and the firm's self-reported level of corporate ethics. CLCC is a measure that quantifies "legal corruption", such as that which is included in political influence. CEI is the average of CICC and CLCC. PSEI measures the level of ethics (i.e., lack of corruption) in the public sector. JLEI quantifies the independence of the legal and judicial system. These indices are time-invariant. Since Kaufmann's work was published in 2004, the survey obviously does not include information beyond 2003. The author acknowledges that to the extent that ethics is a dynamic characteristic of countries, this measure may bias the results. That said, given the dearth of ethics indices available, it is the most comprehensive available.[15]

The second source is Transparency International. Transparency International is perhaps best known for its Corruption Perception Index (CPI) index, which is included in our dataset. It also has, however, a Bribery Payer Index (BPI), which is also in line with the intended analysis in this chapter. The index is on a scale from 0 to 10 and measures the likelihood that a firm from a given country will bribe (higher numbers indicate there is less likelihood of bribing). The time frame used for the last two proxies for ethics are aligned with those from Kaufman (2004) to minimize any differences based on the time period analyzed.[16]

Table 2.1 includes summary statistics for all of the variables used in the analyses for the international sample. Panel A describes some of the attributes of the investments in our entrepreneur sample. The average investment term of the PCs in the sample is 3.88 years, which reflects the long-term nature of VC investments. Approximately 5% of the VCs in the sample prefer to originate in syndications. The average VC is fairly conservative, as evidence by the average risk value of 0.21 on a scale of 0–2 and has raised approximately 3 funds.

The country-level data gives us an idea of the investment environment of the 33 countries included in our analysis. Average GDP per capita is a modest $21,930 and the average market return is at approximately 4% per annum. The average VC market sees approximately 1,000 deals in a year.

Ethics Indices from Kaufman (2004) indicate that the average country has relatively good ethical conduct, as evidenced by index values around 60 or 70 (on a scale

[14] Kaufman (2004) actually includes six indices, the last being a Corporate Governance Index, which represents the percentage of firms in the country giving satisfactory ratings (answers 5, 6 or 7) to questions on protection of minority shareholders, quality of training, willingness to delegate authority, nepotism and corporate governance. This index is distinguished from the other five, which are based on ethics. Since this chapter is interested in ethics (only), I use only the first five indices.

[15] Corporate governance indices from Gompers et al. (2003) are not applicable since indices are provided for American public firms only.

[16] The Bribery Payer Index is not calculated every year; the survey on which this index was performed in 1998, 2002, 2006, and 2008. Index values for the most recent survey years are used in those years were the index is not calculated.

Table 2.1 Summary statistics

Variable	N	Mean	Std. Dev.	Min	Max
Panel A: PC characteristics					
Net income/total assets	1,184	0.00	0.01	−0.02	0.03
Net sales/total assets	1,107	0.43	14.04	0.00	0.67
Investment term	4,955	3.88	3.48	0	11
Years since last investment	4,955	3.39	1.79	0	6
Industry M/B	4,955	5.58	3.16	1.56	11.85
Total invested in PC ($000)	4,955	65.12	126.52	0.00	2,047.65
Return to IPO (%)	185	14.41	30.45	−95.29	256.25
Panel B: VC characteristics					
Portfolio size/Mgr	4,955	2.21	1.44	0	8.61
Prefer to originate	4,955	0.05	0.20	0	1
Corporate VC	4,955	0.01	0.08	0	1
VC expertise	4,955	3.08	2.44	1	12
Risk	4,955	0.21	0.47	0	2
VC size	4,955	4.49	14.07	0.03	89.98
Panel B: PC nation characteristics					
Market Cap/GDP	95	101.78	81.65	15.35	401.03
Market return (%)	95	3.93	23.10	−69.23	66.05
GDP per capita ($000s)	95	21.93	11.05	0.47	39.71
Domestic credit/GDP	95	1.29	0.56	0.33	3.10
VC market activity (000s)	95	1.07	2.99	0.00	18.81
Panel C: Ethics indices					
CICC (Corporate Illegal Corruption Component)	33	73.51	22.23	20.8	97.1
CLCC (Corporate Legal Corruption Component)	33	48.02	19.69	7.4	79.2
CEI (Corporate Ethics Index)	33	60.77	20.10	14.1	85.9
PSEI (Public Sector Ethics Index)	33	63.75	22.95	7.6	93.8
JLEI (Judicial/Legal Effectiveness Index)	33	71.80	21.43	17.7	95.3
CPI (Corruption Perception Index)	95	6.93	2.11	1.7	9.8
BPI (Bribery Payer Index)	81	6.58	1.08	3.9	8.4

Note: PC and VC characteristics are taken from VentureXpert. PC nation characteristics are taken from World Development Indicators. Ethics indices are taken from Kaufmann (2004) and Transparency International. Some variables are transformed using the natural log in regressions but for simplicity, appear here untransformed. See Appendix for definitions as they are used in the regressions

from 0 to 100). The lowest values for the ethics indices are found for the Corporate Legal Corruption Component (CLCC) and the Corporate Ethics Index (CEI). The former is an index measuring how much legal manipulation exists in politics. The latter is a combination of the former and the Corporate Illegal Corruption Component index. Given the direct influence of CLCC on CEI it is not difficult to understand why they would share this characteristic. Other indices include an index of the honesty of politicians/government, Public Sector Ethics Index (PSEI), and an index measuring the independence of the judicial system, Judicial/Legal Effectiveness Index (JLEI). The average score for CPI from Transparency International is at 6.93, which suggests that there is a moderate level of corruption in the countries covered in the analysis. The last ethics index, Bribery Payer's Index (BPI) from Transparency

Table 2.2 Correlation

	1	2	3	4	5	6	7	8	9
Panel A: PC/VC characteristics									
Investment term (1)	1.00								
Years since last Inv (2)	**−0.09**	1.00							
Total Inv in PC (3)	**0.23**	**−0.12**	1.00						
VC size (4)	**−0.15**	0.00	**−0.06**	1.00					
Industry M/B (5)	**−0.16**	**0.30**	0.05	−0.02	1.00				
Portfolio size/Mgr (6)	**−0.10**	0.02	**−0.09**	−0.04	**0.13**	1.00			
Prefer to originate (7)	**0.08**	**0.08**	−0.06	−0.04	−0.02	−0.02	1.00		
Corporate VC (8)	−0.05	0.02	**−0.09**	−0.03	**0.07**	**0.12**	0.01	1.00	
VC expertise (9)	−0.02	**−0.12**	**0.12**	0.02	−0.04	0.00	−0.02	−0.05	1.00
Risk (10)	0.03	0.01	0.04	**−0.06**	**0.13**	0.04	0.03	**0.07**	0.01

	1	2	3	4	5	6	7	8	9	10	11
Panel B: PC nation characteristics											
Market cap (1)	1.00										
Market return (2)	0.14	1.00									
GDP per capita (3)	−0.14	0.09	1.00								
Domestic credit (4)	0.11	−0.03	−0.05	1.00							
VC activity (5)	0.03	−0.04	0.05	**0.34**	1.00						
CICI (6)	0.08	−0.04	0.11	**0.32**	0.14	1.00					
CLCI (7)	0.09	−0.08	**0.24**	0.07	−0.20	**0.77**	1.00				
CEI (8)	0.09	−0.06	0.18	**0.22**	−0.02	**0.95**	**0.93**	1.00			
PSEI (9)	0.10	−0.07	0.10	**0.23**	0.09	**0.95**	**0.86**	**0.96**	1.00		
JLEI (10)	0.06	−0.06	0.07	**0.34**	0.17	**0.95**	**0.75**	**0.91**	**0.92**	1.00	
CPI (11)	0.07	−0.02	0.18	**0.25**	0.13	**0.94**	**0.76**	**0.91**	**0.89**	**0.88**	1.00
BPI (12)	−0.13	−0.01	0.11	0.16	−0.09	**0.65**	**0.54**	**0.65**	**0.56**	**0.60**	**0.72**

Note: PC and VC characteristics are taken from VentureXpert. PC nation characteristics are taken from World Development Indicators. Ethics indices are taken from Kaufmann (2004)
CICC Corporate Illegal Corruption Component, *CLCC* Corporate Legal Corruption Component, *CEI* Corporate Ethics Index, *PSEI* Public Sector Ethics Index, *JLEI* Judicial/Legal Effectiveness Index and from Transparency International, *CPI* Corruption Perception Index, *BPI* Bribery Payer Index
Variable definitions are in Appendix
Bold font indicates a significance level of 1 or 5%. Shaded boxes represent those variables that do not appear in the same regression

International has an average value of 6.58, suggesting that the average country in the sample does not have rampant bribery. A comprehensive list of summary statistics is found in Table 2.1 and definitions are found in the Appendix.

Table 2.2 contains the pairwise correlations of the variables used in each analysis separately. There are only a couple of concerns with regard to multicollinearity. Not surprisingly, they are in the macroeconomic variables. The two correlations of concern are between the ethics variables and Domestic Credit as well as GDP per capita. Inasmuch as both are important in the analysis based on their inclusion in extent literature, they are retained, but analyses are retested excluding Domestic Capital and GDP per capita separately and together to ensure that the results are not spurious based on their inclusion. Results remain and are available upon request. To ensure econometric reliability, these two variables are orthogonalized in the

Table 2.3 Country characteristics

	# of PCs	# of VCs Invested in PCs	CICI	CLCI	CEI	PSEI	JLEI	CPI	BPI
Australia	48	2	92	50.3	71.1	78.6	89	8.6	7.8
Austria	2	3	82.3	57.2	69.7	67.8	83.9	7.7	7.5
Belgium	4	2	75.9	54.1	65	64.1	68.9	6.5	7.8
Brazil	21	2	50.9	19.9	35.4	35.2	41.5	4.0	5.7
Canada	79	6	83.3	42.9	63.1	59.7	81.6	9.0	7.8
Denmark	6	3	97.1	74.7	85.9	93.6	95.3	9.7	.
Finland	6	4	96.9	72.6	84.8	93.8	92.1	9.7	.
France	13	10	79.6	39.9	59.7	61.4	76.4	6.8	6.2
Germany	26	4	85	62.4	73.7	74.3	85.5	7.7	7.1
Greece	5	1	47	26.1	36.5	39.8	55.6	3.3	.
Hong Kong	13	3	90.8	59.1	75	82.2	82.3	7.8	5.9
India	13	4	39.4	29.8	34.6	31.7	59.9	2.8	4.8
Indonesia	4	4	38.2	42.4	40.3	47.3	39.9	1.7	.
Ireland	6	7	77.9	42.6	60.3	64.1	77.7	8.2	.
Israel	10	6	80.1	36.7	58.4	64.3	72.9	6.8	6.0
Italy	4	4	47.3	34.4	40.9	33.9	40.7	5.2	6.2
Japan	33	2	78.7	46.2	62.4	62	75.9	6.5	6.4
Malaysia	5	2	66.8	47.1	56.9	58.6	77.5	5.1	5.6
Mexico	1	1	40	22.2	31.1	23.3	29.8	3.6	.
Netherlands	4	7	91.1	79.2	85.2	84.3	87.4	8.9	7.3
New Zealand	1	1	96.4	68.7	82.5	89.7	87.6	9.5	.
Norway	3	4	91.2	78.6	84.9	90.1	86.9	8.7	.
Philippines	2	3	20.8	7.4	14.1	7.6	17.7	3.3	.
Portugal	1	1	68.2	42	55.1	60.4	65	4.0	6.5
Singapore	9	4	93.3	72.6	83	92.7	89.9	9.2	6.6
South Africa	3	1	71.4	46.5	59	42.2	71.4	2.5	5.6
South Korea	79	3	41.9	31	36.4	40.9	48.5	4.1	4.9
Spain	12	2	62.2	39.7	51	59.4	53	6.9	6.6
Sweden	7	4	93.9	60	77	84	93.2	9.0	8.4
Switzerland	10	2	89.3	59.1	74.2	81.7	90.5	8.8	7.8
Thailand	5	2	45.8	11.6	28.7	36.3	52.8	3.2	.
United Kingdom	167	5	93.2	67.4	80.3	79.7	92.1	8.6	7.5
United States	4,353	7	84	30.8	57.4	70.1	83.7	7.6	6.1

Note: VC Industry data is taken from VentureXpert. Ethics indices are taken from Kaufmann (2004) *CICC* Corporate Illegal Corruption Component, *CLCC* Corporate Legal Corruption Component, *CEI* Corporate Ethics Index, *PSEI* Public Sector Ethics Index, *JLEI* Judicial/Legal Effectiveness Index and from Transparency International, *CPI* Corruption Perception Index, *BPI* Bribery Payer Index Variable definitions are in Appendix

model. All other high correlations seen in Table 2.2 are among variables that are not used in the same specifications. These variables are shaded in the correlation matrix to alert the reader that they are not relevant.

Table 2.3 provides us a snapshot of the ethics indices in the countries covered by the analysis. There is a wide range of ethics indices. Not surprisingly, the Scandinavian nations, who are considered the least corrupt by Transparency International (among others), have some of the highest values for the indices. Inasmuch as

CPI and BPI are dynamic (i.e., they vary across time), values for CPI and BPI in Table 2.3 represent sample term averages. The number of PCs in this table reflects the number of PCs from each nation that appear in the PC outcome analysis.

Table 2.4 displays a univariate comparison test that provides a feel for how ethics impacts the performance and outcome of entrepreneurial firms domiciled in that nation. Regardless of the proxy for PC performance or the ethics index used, private firms perform better in nations with better business ethics (though there are a few that fall shy of statistical significance). It is important to note here that the most ethical nations are not necessarily the largest economies with the biggest financial markets. As mentioned previously, many of the Scandinavian countries top the list, though these nations have neither the largest economies nor the deepest financial markets. Although one could argue that the ethics indices are certainly correlated with GDP and/or market capitalization, it is certainly not absolute. In fact, Kaufman (2004) actually makes this point explicitly in his work. The statistically significant difference in means of PC performance in countries perceived as being ethically superior foreshadows the results found from our analysis.

Panel B displays the difference in means for the entrepreneurial outcome analysis. The panel suggests that ethics expedite entrepreneurial time to exit. Put differently, the panel suggests that entrepreneurial firms exit rather than remain private.[17] The panel results further suggest that the vehicle of exit is M&A and not IPO. According to Schwienbacher (2002), Fleming (2004) and Cumming and MacIntosh (2003a, b), M&A is an inferior exit relative to IPO. This is an interesting result as it suggests that ethical entrepreneurs are more likely to go the second best route. Insight on this result is included in the results section of the paper.

Figure 2.1 displays an intuitively appealing bar graph for both the financial performance and the outcome of the PC in both high (blue bars) and low (red bars) ethics countries. Supporting the results found in Table 2.4, each of the graphs clearly shows that there exists benefits with regard to both PC financial performance and outcome when their domicile nation has a high level of perceived ethics.

Empirical Method

To examine how ethics impacts the performance of entrepreneurships, an ordinary least squares regression is used:

$$Performance_j = \beta_0 + \beta_1 Inv_{i,j} + \beta_2 X_{i,j} + \beta_3 I_j + \beta_4 Y_{j,k} + \beta_5 Ethics_{j,k} + \varepsilon_j, \quad (2.1)$$

where $Performance_j$ is defined as the most recent year's value for either PC_j's net income or sales scaled by its total assets. $Inv_{i,j}$ is a vector of investment-specific data

[17] It is not always the goal of a private firm to go public. Some firms remain private for strategic reasons (e.g., buyout). That said, most venture capital-backed entrepreneurs seek venture capital as a means to ultimately exit via acquisition or IPO.

Table 2.4 Difference in means

Characteristic tested	N	Net income/total assets	Difference test statistic	N	Net sales/total assets	Difference test statistic
Panel A: Entrepreneurial performance						
Full sample	1,184			1,154	0.415	
CICC > median	111	−0.002	**0.001*****	109	0.015	**0.004***
CICC ≤ median	1,073	−0.003		1,045	0.011	
CLCC > median	237	−0.001	**0.002*****	225	0.014	0.003
CLCC ≤ median	947	−0.003		929	0.011	
CEI > median	167	−0.002	**0.001*****	166	0.015	**0.005****
CEI ≤ median	1,017	−0.003		988	0.011	
PSEI > median	111	−0.002	**0.001****	109	0.015	**0.004***
PSEI ≤ median	1,073	−0.003		1,045	0.011	
JLEI > median	99	−0.002	0.001	97	0.010	−0.002
JLEI ≤ median	1,085	−0.003		1,057	0.011	
CPI > median	588	−0.003	0.000	400	0.013	**0.003***
CPI ≤ median	596	−0.003		754	0.010	
BPI > median	559	−0.002	**0.001*****	546	0.013	**0.003***
BPI ≤ median	625	−0.003		608	0.010	

Characteristic tested	N	Proportion of firms that go defunct	Difference test statistic	Proportion of private firms	Difference test statistic	Proportion of acquisition exits	Difference test statistic	Proportion of IPO exits	Difference test statistic
Panel B: Entrepreneurial outcome									
CICC > median	314	0.149	0.018	0.116	**−0.264*****	0.407	**0.112*****	0.328	**0.134*****
CICC ≤ median	4,641	0.131		0.379		0.296		0.194	
CLCC > median	545	0.126	−0.007	0.120	**−0.273*****	0.326	0.027	0.428	**0.253*****
CLCC ≤ median	4,410	0.133		0.393		0.300		0.175	
CEI > median	447	0.129	−0.003	0.124	**−0.262*****	0.372	**0.077*****	0.375	**0.189*****
CEI ≤ median	4,508	0.132		0.386		0.296		0.186	
PSEI > median	314	0.149	0.018	0.116	**−0.264*****	0.407	**0.112*****	0.328	**0.134*****
PSEI ≤ median	4,641	0.131		0.379		0.296		0.194	

(continued)

Table 2.4 (continued)

Characteristic tested	N	Proportion of firms that go defunct	Difference test statistic	Proportion of private firms	Difference test statistic	Proportion of acquisition exits	Difference test statistic	Proportion of IPO exits	Difference test statistic
JLEI > median	302	0.155	0.025	0.121	**−0.258*****	0.407	**0.111*****	0.317	**0.122*****
JLEI ≤ median	4,653	0.130		0.378		0.296		0.195	
CPI > median	1,462	0.112	**−0.029*****	0.332	**−0.048*****	0.323	**0.032****	0.223	**0.030*****
CPI ≤ median	3,493	0.140		0.380		0.291		0.194	
BPI > median	1,228	0.102	**−0.040*****	0.342	**−0.028***	0.313	0.013	0.243	**0.055*****
BPI ≤ median	3,727	0.142		0.370		0.299		0.189	

Note: VC Industry data is taken from VentureXpert. Ethics data is taken from Kaufman (2004) and Transparency International. Panel A displays the difference in means of financial performance of PCs across ethics groups. Panel B displays the difference in means of PC outcome across ethics groups. Net Income/Total Assets is the most recent year's net income scaled by total assets for the PC. Net Sales/Total Assets is the most recent year's net sales scaled by total assets for the PC. Ethics is either *CICC* Corporate Illegal Corruption Component, *CLCC* Corporate Legal Corruption Component, *CEI* Corporate Ethics Index, *PSEI* Public Sector Ethics Index, *JLEI* Judicial/Legal Effectiveness Index, *CPI* Corruption Perception Index or *BPI* Bribery Payers Index.
Defunct/Private/Subsidiary/Public is an indicator variable which is one if a firm goes defunct/remains private/gets acquired/goes public and zero otherwise. Variable definitions are in Appendix
*, **, *** indicate significance levels of 10, 5, and 1 %, respectively

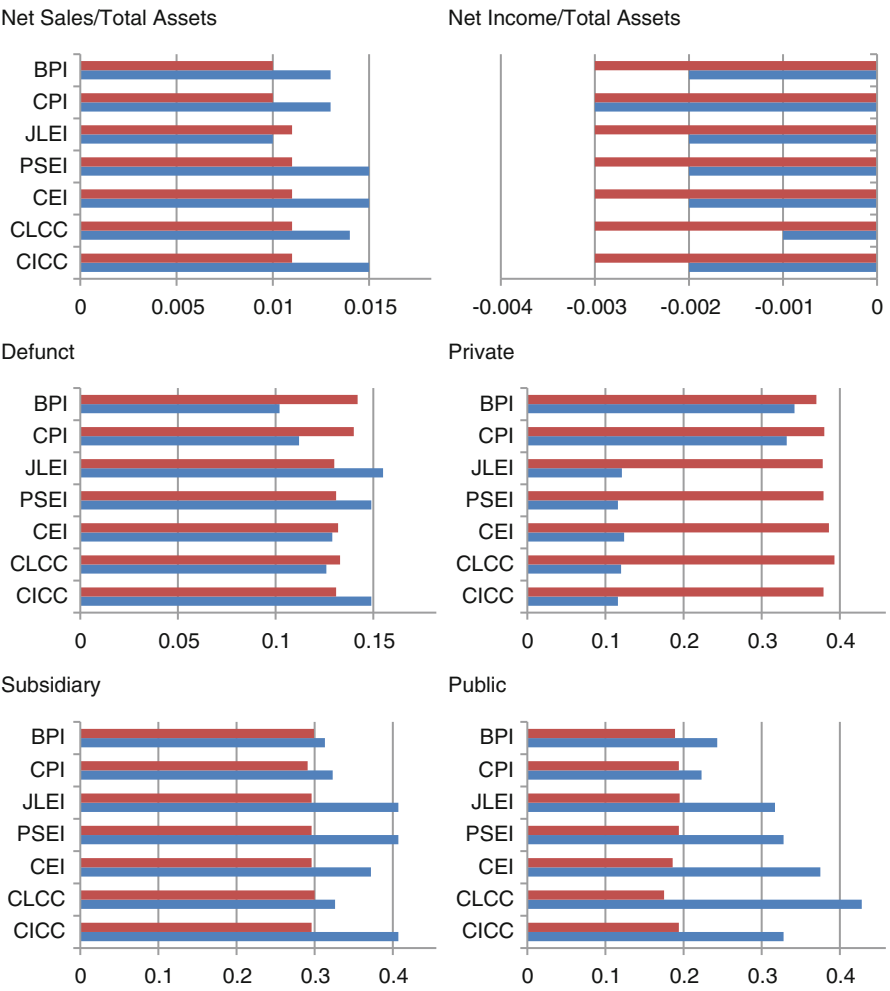

Fig. 2.1 PC characteristics by relative level of ethics. Panel **A**: Most recent year PC's financials. Panel **B**: Probability that the PC will stagnate. Panel **C**: Probability that the PC with exit (Note: The *blue* (*red*) bars indicate higher (lower) than median ethics. Ethics is Corporate Illegal Corruption Component, Corporate Legal Corruption Component, Corporate Ethics Index, Public Sector Ethics Index, or Judicial/Legal Effectiveness Index. Macroeconomic data are from World Development Indicators. Sample of PCs from VentureXpert where the last investment occurred between 1998 and 2004)

such as the term (*Investment Term)*, the number of years since VC_i's last investment (*Years Since Last Inv)* and the total amount of capital invested in PC_j (*Total Inv in PC)*. $X_{i,j}$ is a vector of characteristics for the VC's invested in the PC, including the number of invested PCs per VC manager (*Portfolio Size/Mgr*), whether or not the VC prefers to originate (*Prefer to Originate*), whether the VC is corporate or not (*Corporate VC*), the number of successful funds the VC has raised (*Expertise*), the level of risk the VC takes on (*Risk*) and the size of the VC (*VC Size*). I_j is the

market/book ratio for the industry of the PC (*Industry M/B*). $Y_{j,k}$ is a vector of macroeconomic variables for the PC's domicile nation (k), including *Market Capitalization, Market Return*, *GDP per capita*, *Domestic Credit* and *VC Activity*, all of which were defined in the data section of the paper.

Data in all analyses is at the PC level. Since the original data provides VC/PC relationships, information is collapsed by PC to include median VC characteristics. The unfortunate effect of this approach is that information about the VC characteristics is lost and resulting statistical relationships are muted. Analysis done at the PC/VC relationship level was included in a former version of this chapter and yields qualitatively identical results regarding ethics. Results are available upon request.

To consider whether perceived ethics affects the outcome of entrepreneurial firms, the following multinomial logit regression on portfolio-firm level data is performed:

$$\begin{aligned} \text{Pr}ob(CurrentStatus_j) = \Psi(&\delta_0 + \delta_1 Inv_{i,j} + \delta_2 X_{i,j} + \delta_3 I_j + \delta_4 Y_{j,k} \\ &+ \delta_5 Ethics_{j,k}), \end{aligned} \tag{2.2}$$

where Ψ is the cumulative logistic probability distribution function. All other definitions remain from Eq. 2.1.

Finally, to examine whether ethics has an impact on the costs of going private firms going public, I perform the following regression:

$$\text{R}eturnToIPO_j = \gamma_0 + \gamma_1 Inv_{i,j} + \gamma_2 X_{i,j} + \gamma_3 I_j + \gamma_4 Y_{j,k} + \gamma_5 Ethics_{j,k} + \varepsilon_j, \tag{2.3}$$

where $ReturnToIPO_j$ is a proxy for the cost to the firm of going public (i.e., money left "on the table"). All other variables are as previous defined.

Results

Table 2.5 displays the results from the model specified in Eq. 2.1. The results in Panel A suggest that ethical behavior is beneficial for the entrepreneur's net sales, scaled by a proxy of the size of the entrepreneurship – total assets. A statistically significant positive relationship (in all cases at 5% or better) is found across all but two of the ethics indices. The economic significance is such that a one unit improvement of the CICC Ethics Index increases the net income by 15.8% (specification (1) of Panel A). Considering that the standard deviation of this index is 22.23, this is a significant impact. A one standard deviation increase in the ethics index would therefore improve net income by 351%! Other Kaufman indices represented in specifications (2)–(5) of Panel A have comparable economic impacts for a one standard deviation improvement ranging from 251% (CEI) all the way up to the 351% mentioned above. These numbers are most impressive but it is important to remember that a one standard deviation increase in these indices would be most difficult to undertake. A more probable outcome is likely unit

Table 2.5 Ethics and entrepreneurial financial performance

	CICC	CLCC	CEI	PSEI	JLEI	CPI	BPI
Ethics =	1	2	3	4	5	6	7
Panel A: Net sales/total assets							
Investment term	−0.013	0.024	0.012	−0.007	−0.005	−0.011	0.026
	[0.123]	[0.123]	[0.123]	[0.123]	[0.123]	[0.123]	[0.125]
Years since last Inv	−0.055	−0.313	−0.226	−0.096	−0.085	−0.092	−0.354
	[0.366]	[0.360]	[0.360]	[0.366]	[0.369]	[0.368]	[0.396]
Portfolio size/ Mgr	5.172	0.909	3.191	1.941	3.430	6.097	0.325
	[3.374]	[3.107]	[3.276]	[3.014]	[3.252]	[3.872]	[3.516]
Total Inv in PC	−0.175	−0.132	−0.144	−0.151	−0.181	−0.153	−0.147
	[0.264]	[0.265]	[0.264]	[0.264]	[0.265]	[0.264]	[0.273]
VC size	−0.032	−0.028	−0.031	−0.031	−0.031	−0.030	−0.026
	[0.028]	[0.028]	[0.028]	[0.028]	[0.028]	[0.028]	[0.028]
Industry M/B	0.205	0.154	0.176	0.193	0.194	0.188	0.160
	[0.143]	[0.142]	[0.143]	[0.143]	[0.143]	[0.143]	[0.146]
Prefer to originate	0.186	0.367	0.217	0.226	0.341	0.285	0.574
	[2.067]	[2.077]	[2.073]	[2.069]	[2.069]	[2.070]	[2.095]
Corporate VC	−1.383	−3.698	−2.593	−2.022	−2.028	−2.380	−3.773
	[5.569]	[5.534]	[5.553]	[5.559]	[5.572]	[5.553]	[5.592]
VC expertise	0.203	0.190	0.200	0.203	0.196	0.201	0.192
	[0.168]	[0.169]	[0.169]	[0.168]	[0.168]	[0.168]	[0.171]
Risk	−0.342	−0.398	−0.364	−0.356	−0.375	−0.362	−0.455
	[0.854]	[0.857]	[0.856]	[0.855]	[0.855]	[0.855]	[0.870]
Market cap	0.090***	0.090***	0.088***	0.090***	0.093***	0.090***	0.098***
	[0.014]	[0.014]	[0.014]	[0.014]	[0.014]	[0.014]	[0.015]
Market return	−5.733**	−4.299*	−4.755**	−5.281**	−5.600**	−5.068**	−5.028**
	[2.300]	[2.279]	[2.271]	[2.285]	[2.315]	[2.280]	[2.354]
GDP per capita	0.221	0.098	0.133	0.199	0.209	0.198	0.091
	[0.199]	[0.198]	[0.196]	[0.198]	[0.200]	[0.199]	[0.227]
Domestic credit	2.305	1.435	2.067	2.502	1.951	2.795	1.563
	[1.847]	[1.871]	[1.867]	[1.885]	[1.843]	[1.948]	[1.934]
VC activity	−0.895***	−0.311	−0.420	−0.767**	−0.869**	−0.794**	−0.357
	[0.339]	[0.379]	[0.314]	[0.329]	[0.351]	[0.337]	[0.361]
Ethics	0.158***	0.048	0.125**	0.139***	0.146**	1.415**	0.231
	[0.052]	[0.058]	[0.059]	[0.053]	[0.061]	[0.594]	[0.418]
Observations	1,154	1,154	1,154	1,154	1,154	1,154	1,133
# of countries	30	30	30	30	30	30	21
F-test	4.32***	3.67***	3.98***	4.15***	4.06***	4.05***	3.98***
R^2	0.056	0.049	0.052	0.054	0.053	0.053	0.050
Panel B: Net income/total assets							
Investment term	−0.239	0.279	0.086	−0.149	−0.125	−0.187	−0.164
	[1.458]	[1.457]	[1.455]	[1.458]	[1.459]	[1.462]	[1.654]
Years since last Inv	−0.732	−4.087	−2.910	−1.204	−1.094	−1.122	2.106
	[4.314]	[4.248]	[4.240]	[4.312]	[4.343]	[4.342]	[4.836]
Portfolio size/ Mgr	61.003	6.329	36.363	20.358	38.817	73.173	47.571
	[39.891]	[36.651]	[38.738]	[35.592]	[38.405]	[45.835]	[48.431]
Total Inv in PC	−1.966	−1.296	−1.544	−1.661	−1.977	−1.684	−1.802
	[3.018]	[3.025]	[3.020]	[3.017]	[3.027]	[3.020]	[3.344]
VC size	−0.379	−0.335	−0.365	−0.370	−0.365	−0.352	−0.354
	[0.338]	[0.340]	[0.339]	[0.339]	[0.339]	[0.339]	[0.367]
Industry M/B	2.608	2.008	2.287	2.476	2.477	2.418	2.548

(continued)

Table 2.5 (continued)

	CICC	CLCC	CEI	PSEI	JLEI	CPI	BPI
Ethics =	1	2	3	4	5	6	7
	[1.698]	[1.694]	[1.696]	[1.698]	[1.701]	[1.698]	[1.905]
Prefer to originate	0.886	2.475	0.910	1.192	2.643	1.813	−5.629
	[24.129]	[24.259]	[24.198]	[24.155]	[24.157]	[24.166]	[14.276]
Corporate VC	−13.120	−35.372	−24.384	−19.003	−19.284	−22.525	−21.655
	[61.214]	[61.067]	[61.153]	[61.168]	[61.271]	[61.142]	[70.106]
VC expertise	2.521	2.287	2.447	2.497	2.414	2.434	2.392
	[1.970]	[1.978]	[1.975]	[1.972]	[1.972]	[1.973]	[2.173]
Risk	−3.842	−4.993	−4.215	−4.003	−4.247	−4.077	−3.885
	[10.072]	[10.115]	[10.096]	[10.084]	[10.088]	[10.092]	[12.046]
Market cap	1.081***	1.057***	1.042***	1.073***	1.105***	1.072***	1.186***
	[0.162]	[0.168]	[0.164]	[0.162]	[0.162]	[0.162]	[0.185]
Market return		−48.771*	−55.522**	−62.433**	−65.601**	−59.550**	−78.201**
	[26.854]	[26.523]	[26.475]	[26.678]	[26.989]	[26.602]	[30.323]
GDP per capita	2.652	0.856	1.441	2.348	2.477	2.292	3.942***
	[2.343]	[2.320]	[2.305]	[2.338]	[2.358]	[2.344]	[1.517]
Domestic credit	28.445	18.069	25.977	31.218	23.940	34.987	−3.099
	[21.797]	[22.139]	[22.053]	[22.250]	[21.736]	[22.990]	[25.368]
VC activity	−10.860***	−3.100	−4.793	−9.291**	−10.564**	−9.637**	−18.497***
	[4.019]	[4.458]	[3.701]	[3.907]	[4.156]	[4.008]	[7.046]
Ethics	1.955***	0.668	1.616**	1.761***	1.824***	18.092***	5.573
	[0.593]	[0.684]	[0.680]	[0.609]	[0.696]	[6.939]	[5.426]
Observations	1,184	1,184	1,184	1,184	1,184	1,184	1,054
# of countries	30	30	30	30	30	30	21
F-test	4.21***	3.65***	3.90***	4.06***	3.98***	3.97***	3.68***
R^2	0.056	0.048	0.052	0.054	0.053	0.053	0.058

Note: The multinomial logit model used for entrepreneurs is $Performance_j = \alpha + \beta_0 Inv_{i,j} + \beta_1 X_{i,j} + \beta_2 I_j + \beta_3 Y_{j,k} + \beta_4 Ethics_{j,k} + \varepsilon_j$ where Performance is the most recent financials of the PC: Net Sales/Total Assets in Panel A and Net Income/Total Assets in Panel B. Inv_i is a vector of investment-specific data such as: Investment Term, Years Since Last Inv, Portfolio Size/Mgr, and Total Inv in PC. X_i is a vector of VC characteristics including: VC Size, Prefer to Originate, Corporate VC, VC Expertise, and Risk. I_j is the industry market-to-book ratio for the industry to which the PC belongs. Y_k is a vector of macroeconomic variables including: Market Cap, Market Return, GDP per capita, Domestic Credit and VC Activity. Ethics is either *CICC* Corporate Illegal Corruption Component, *CLCC* Corporate Legal Corruption Component, *CEI* Corporate Ethics Index, *PSEI* Public Sector Ethics Index, *JLEI* Judicial/Legal Effectiveness Index, *CPI* Corruption Perception Index, or *BPI* Bribery Payer Index

Robust standard errors (clustered around PC) are given in brackets. Macroeconomic data are from World Development Indicators. Sample of PCs from VentureXpert where the last investment occurred between 1998 and 2004. Variable definitions are in the Appendix.

*, **, *** indicate significance levels of 10, 5, and 1%, respectively

improvements. That said, the impact of a one unit improvement in ethics on net sales scaled by total assets, ranging from 12.5 to 141.5%, is equally motivating.

Speaking to the indices that are statistically insignificant, CLCC and BPI, the former is considerably lower on average than the CICC index (48.02 versus 73.51, respectively), suggesting that there is considerable room for improvement in the sample. More importantly, however, there is a relatively small range in values for

this variable, limiting its ability to explain differences in PC financial performance. That said, this facet of ethics is difficult to change. Firms that benefit from unfair political influence spend a lot of money to keep it that way, with e.g., lobbyists. The latter is an index that is only collected approximately every 40 years. Values for missing years were filled in using lagged values. This may have caused some bias in the index that resulted in a lack of correlation with PC performance.

Panel B displays the results using net income (once again scaled by total assets) as an alternate proxy for PC performance. These results are even more impressive. Though the same two indices, CLCC and BPI, remain statistically insignificant, the marginal effects for the other ethics indices are greater than those in Panel A. Keeping in mind that the perception of ethics is difficult to change, marginal effects are discussed for a one-unit increase in the ethics indices. The economic significance is such that a one-unit improvement in the CICC Ethics Index increases net income scaled by total assets by 195.5% (specification (1) of Panel B). Other statistically significant Kaufman (2004) ethics indices reflect more conservative marginal effects (though still impressive): they are 161.6%, 176.1%, and 182.4% for CEI, PSEI and JLEI indices, respectively. The marginal effect of the CPI index of ethics is a whopping 1809.2%! It is important to note here that this index is from 1 to 10 instead of the Kaufman indices, which are from 0 to 100.

Collectively, these results suggest that a country maintaining a credible level of ethics leads to an enhanced level of both sales and net income (scaled by total assets). The results for net income are arguably more important than those in sales since net income is the bottom line, so to speak. The ethics index discussing corporate ethics and bribery is particularly influential as is noted by the statistical significance of CICC and CEI on both proxies of PC performance. Also important is the ethics in the public sector and the efficiency of the judicial/legal system. These results might serve as a powerful motivator for countries whose perceived level of ethics has room for improvement to encourage ethical behavior. With small firms often acting as the engine for economic growth, this could be an economic tool for policy makers.

Table 2.6 displays the results of the entrepreneurial company analysis shown in Eq. 2.2. The results suggest that ethics are inconsequential for the probability that the PC will go out of business. This is seen in a statistically insignificant coefficient on each of the ethics indices. The lack of significance is comforting in that it suggests that ethics does not come at a cost to the entrepreneurial firm as far as viability. It is possible that the lack of corruption allows for a more even playing field where young, growing firms get a fair shake.

The remaining results confirm, for the most part, the results that were found in Table 2.4. The results suggest that the perception of ethics in a nation decreases the time to exit, which as previously mentioned, is of value to VCs. This is seen in the reduced probability that a given firm is still private in the sample (Panel B). Only one of the indices (CPI) is statistically insignificantly related to the probability that a firm remains private. The results suggest that overall; ethics enhances the efficiency of the entrepreneurial process. In other words, whatever outcome the entrepreneur will have, it happens sooner when ethics are present. This is perhaps

Table 2.6 Ethics and the entrepreneurial success

	CICC	CLCC	CEI	PSEI	JLEI	CPI	BPI
Ethics index=	1	2	3	4	5	6	7
Panel A: Dependent variable: Probability (Current status = Defunct)							
Ethics index	0.099	0.107	0.118	0.112	0.159	−0.016	0.005
	[0.105]	[0.081]	[0.095]	[0.104]	[0.138]	[0.014]	[0.009]
Panel B: Dependent variable: Probability (Current status = Private)							
Ethics index	−0.893***	−0.748***	−0.873***	−0.453*	−1.034***	0.049	−0.080***
	[0.231]	[0.187]	[0.214]	[0.259]	[0.325]	[0.031]	[0.021]
Panel C: Dependent variable: Probability (Current status = Subsidiary)							
Ethics index	0.947***	0.635***	0.817***	0.619***	1.104***	0.042*	0.088***
	[0.216]	[0.123]	[0.155]	[0.187]	[0.238]	[0.023]	[0.023]
Panel D: Dependent variable: Probability (Current status = Public)							
Ethics index	−0.153	0.006*	−0.062	−0.277**	−0.229	−0.075***	−0.013
	[0.109]	[0.091]	[0.103]	[0.121]	[0.154]	[0.018]	[0.010]
Observations	4,955	4,955	4,955	4,955	4,955	4,955	4,929
# of countries	33	33	33	33	33	33	23
Model χ^2	405***	403***	384***	396***	357***	385***	393***
Pseudo R^2	0.043	0.042	0.043	0.042	0.042	0.042	0.042

Note: The multinomial logit model used for entrepreneurs is $\Pr(CurrentStatus_j) = \Psi(\alpha + \beta_0 Inv_{i,j} + \beta_1 X_{i,j} + \beta_2 I_j + \beta_3 Y_{j,k} + \beta_4 Ethics_{j,k})$ where Ψ is the cumulative logistic probability distribution function. Current Status is the current status of the PC: Public, Subsidiary, or Defunct. Inv_i is a vector of investment-specific data such as: Investment Term, Years Since Last Inv, Portfolio Size/Mgr, and Total Inv in PC. X_i is a vector of VC characteristics including: VC Size, Prefer to Originate, Corporate VC, VC Expertise, and Risk. I_j is the industry market-to-book ratio for the industry to which the PC belongs. Y_k is a vector of macroeconomic variables including: Market Cap, Market Return, GDP per capita, Domestic Credit and VC Activity. Ethics is either *CICC* Corporate Illegal Corruption Component, *CLCC* Corporate Legal Corruption Component, *CEI* Corporate Ethics Index, *PSEI* Public Sector Ethics Index, *JLEI* Judicial/Legal Effectiveness Index, *CPI* Corruption Perception Index, or *BPI* Bribery Payer Index

Robust standard errors (clustered around PC) are given in brackets. Macroeconomic data are from World Development Indicators. Sample of PCs from VentureXpert where the last investment occurred between 1998 and 2004. Variable definitions are in the Appendix.

*, **, *** indicate significance levels of 10, 5, and 1 %, respectively

because with ethical behavior, the perceived risk of adverse selection and moral hazard is less.

The method of exit, however, seems to be through acquisition (M&A). This is seen in the positive statistical significance of all seven indices in Panel C, which displays the results of ethics on the probability that a firm exits via acquisition (i.e., M&A) as well as the predominantly negative statistical significance in the Panel D, which displays the results of ethics on the probability that a firm exits via IPO. Providing hope that ethics can encourage exit via IPO, however, the marginal effect of CLCC on the probability of exiting via IPO is positive and significant at the 10% level. Interestingly, this result points to the possibility that politically-induced inequities keep certain firms from exiting via the preferred mode of exit: IPO. The remaining indices all point to the exit being through acquisition. As previously mentioned, Schwienbacher (2002), Fleming (2004) and Cumming and MacIntosh (2003a, b), consider this exit inferior relative to IPO. Ethical entrepreneurs exiting via the second best route could have something to do with the fact that ethical behavior is a difficult thing to communicate to the public (i.e., in the case of an IPO). It is much easier to credibly demonstrate the value of the company's ethical environment to a corporate suitor. It could also be that as Hillman and Keim (2001) acknowledges, traditional markets do not recognize the value of ethical/social issues.[18] Regardless, making the entrepreneurial time to exit more efficient is of value to a VC. Indeed, Sahlman (1990), Gomper (1995), and Lerner (1995) all find that a VC's equity holdings in the entrepreneurial fund get diluted from round to round.

The relative importance of the ethics indices should be noted. Whereas CICC was most impactful in the PC financial performance analyses, JLEI immerges as the most impactful in the PC outcome analysis. This result highlights the role of a strong and efficient legal system in a nation. Meshing nicely with these results are the results found in Cumming and Knill (2012), which suggest that securities laws, in particular those governing disclosure, positively influence the efficiency of the entrepreneurial process, regardless of the mode of exit.

The results of Eq. (2.3) concerning the influence of ethics on the costs of going public are provided in Table 2.7. Controlling for the return in the local market, there is no statistical relation between the perceived level of ethics in a nation and the cost of going public. This implies that ethics has no discernable impact on the cost of a firm going public. These results should be taken lightly however, since 97% of these observations are taken from the United States. Analyses of U.S. IPOs net of the local exchange return over the same time period (and thus dropping Annual Return from the model) yields qualitatively identical results. These results are available upon request.

To control for sample selectivity issues in the choice of IPO (Cumming, et al. 2006; Cochrane 2005), I use a two-step Heckman model (Heckman 1979). Specifically, the following regression is performed:

$$\Pr ob\left(IPO_j | Exit\right) = \lambda_0 + \lambda_1 Inv_j + \lambda_2 X_i + \lambda_3 I_j + \lambda_4 Y_k + \lambda_5 Ethics_k \qquad (2.4)$$

[18] I am grateful to an anonymous referee for pointing this out.

Table 2.7 Ethics and return to IPO

	CICC	CLCC	CEI	PSEI	JLEI	CPI	BPI
Ethics =	1	2	3	4	5	6	7
Investment term	−0.189	0.034	−0.028	−0.307	−0.233	−0.627	−0.365
	[0.358]	[0.374]	[0.359]	[0.409]	[0.369]	[1.534]	[0.650]
Years since last Inv	0.513	3.639	2.757	−1.063	−0.081	−5.210	−1.677
	[3.831]	[3.915]	[3.686]	[4.833]	[4.077]	[21.015]	[8.580]
Portfolio size/Mgr	1.202	1.095	1.124	1.260	1.223	1.242	1.259
	[1.421]	[1.421]	[1.420]	[1.425]	[1.421]	[1.438]	[1.436]
Total Inv in PC	0.012	0.013	0.013	0.011	0.012	0.010	0.010
	[0.017]	[0.017]	[0.017]	[0.017]	[0.017]	[0.017]	[0.017]
VC size	−0.651	−0.585	−0.603	−0.686	−0.664	−0.675	−0.686
	[1.770]	[1.770]	[1.770]	[1.773]	[1.771]	[1.780]	[1.779]
Industry M/B	0.247	0.275	0.267	0.235	0.242	0.249	0.243
	[0.471]	[0.470]	[0.470]	[0.472]	[0.471]	[0.475]	[0.475]
Prefer to originate	−8.263	−8.300	−8.258	−8.425	−8.298	−8.951	−8.868
	[6.719]	[6.709]	[6.712]	[6.722]	[6.720]	[6.711]	[6.714]
Corporate VC	1.494	1.731	1.629	1.577	1.495	2.227	2.098
	[13.728]	[13.708]	[13.712]	[13.747]	[13.734]	[13.768]	[13.767]
VC expertise	−2.701*	−2.725*	−2.718*	−2.690*	−2.697*	−2.698*	−2.694*
	[1.399]	[1.398]	[1.398]	[1.400]	[1.399]	[1.404]	[1.404]
Risk	10.225***	10.292***	10.263***	10.254***	10.227***	10.452***	10.414***
	[3.315]	[3.308]	[3.310]	[3.320]	[3.317]	[3.323]	[3.324]
Market cap	−0.374	−0.752	−0.657	−0.115	−0.287	0.017	−0.272
	[0.290]	[0.525]	[0.454]	[0.283]	[0.263]	[0.752]	[0.276]
Market return	0.470*	0.553*	0.534*	0.403	0.449*	0.323	0.746
	[0.266]	[0.293]	[0.285]	[0.256]	[0.261]	[0.316]	[0.819]
GDP per capita	−0.258	−0.206	−0.229	−0.238	−0.258	−0.174	0.015
	[0.291]	[0.251]	[0.264]	[0.305]	[0.297]	[0.489]	[0.206]

(continued)

Table 2.7 (continued)

	CICC	CLCC	CEI	PSEI	JLEI	CPI	BPI
Ethics =	1	2	3	4	5	6	7
Domestic credit	0.473	1.134	0.968	0.023	0.321	−0.965	0.200
	[0.499]	[0.907]	[0.781]	[0.499]	[0.455]	[3.501]	[0.452]
VC activity	−0.623	0.579	0.230	−1.171	−0.838	−0.215	0.664
	[1.551]	[1.409]	[1.366]	[1.999]	[1.674]	[1.786]	[1.727]
Ethics	7.220	2.976	4.374	2.754	6.437	−48.608	−9.721
	[6.615]	[2.596]	[3.797]	[2.974]	[6.123]	[141.417]	[21.105]
Observations	185	185	185	185	185	185	185
F-test	1.72**	1.77**	1.75**	1.71**	1.72**	1.71*	1.72**
R^2	0.120	0.121	0.121	0.118	0.120	0.114	0.115

Note: The ordinary least squares model used for entrepreneurs is $ReturnToIPO_j = \alpha + \beta_0 Inv_{i,j} + \beta_1 X_{i,j} + \beta_2 I_j + \beta_3 Y_{j,k} + \beta_4 Ethics_{j,k} + \varepsilon_j$ where ReturnToIPO is defined as the percentage change in the price from offer to close on the first trading day after IPO. Inv_i is a vector of investment-specific data such as: Investment Term, Years Since Last Inv, Portfolio Size/Mgr, and Total Inv in PC. X_i is a vector of VC characteristics including: VC Size, Prefer to Originate, Corporate VC, VC Expertise, and Risk. I_j is the industry market-to-book ratio for the industry to which the PC belongs. Y_k is a vector of macroeconomic variables including: Market Cap, Market Return, GDP per capita, Domestic Credit and VC Activity. Ethics is either *CICC* Corporate Illegal Corruption Component, *CLCC* Corporate Legal Corruption Component, *CEI* Corporate Ethics Index, *PSEI* Public Sector Ethics Index, *JLEI* Judicial/Legal Effectiveness Index, *CPI* Corruption Perception Index, or *BPI* Bribery Payer Index

Robust standard errors (clustered around PC) are given in brackets. Macroeconomic data are from World Development Indicators. Sample of PCs from VentureXpert where the last investment occurred between 1998 and 2004. Variable definitions are in the Appendix

*, **, *** indicate significance levels of 10, 5, and 1 %, respectively

Following the work of Cumming et al. (2006), I include only Bubble year dummies in the first step of the regression (i.e., the choice of exiting versus not exiting) to avoid any multicollinearity in the specifications. Results do not materially change once the possible effects of sample selection are taken into consideration, confirming previous results. Results of this methodology are found in Table 2.8.

Robustness

To ensure that the results are robust to alternative empirical specifications and sample inclusion criteria, a number of robustness tests are done. First, the base regression is rerun clustering errors at the country level to ensure that the standard error is not underestimated due to within-country homogeneity. Second, VC/PC relationships that are international in nature are excluded (i.e., relationships where the VC is not domiciled in the same nation as the PC) to ensure that the added layer of complexity that comes along with the ethics of the domicile country of the VC (or differences between the ethics levels of the two countries) does not bias results. Finally, the ethics variable is instrumented to control for any endogeneity that might be present in the base specification as it is used in the paper.

Results (found in Table 2.9) remain in all three cases though in the country-level cluster, statistical significance does drop considerably. That said, statistical significance remains in all but one case for net income and two cases for net sales. Overall, this indicates that even controlling for the homogeneity within country, ethics remains a statistically significant influence on PC financial performance. Results for the other two robustness tests are actually more impressive than the base case (i.e., including international PC/VC relationships and using ethics variables without instruments), suggesting that the base analysis is conservative in nature. Comprehensively, the robustness tests suggest that the results are not spurious based on specific empirical methodology or sample inclusion and confirm the implications set forth in the paper.

Limitations and Future Work

As acknowledged in the paper, ethics indices are in their infancy. To the author's knowledge, prior to Kaufman (2004) and Transparency International's indices, there were no country-level ethics indices. Even with these indices, one must be careful not to read too much into the results. A cautionary note is included in Kaufman's work to take care using his indices for country comparison purposes. There is also the time invariant nature of these indices as well. Even BPI, though it varies across time, is not calculated every year so researchers are forced to either lag values or drop observations where data is missing, which is definitely biasing.

Table 2.8 Entrepreneurial success controlling for nonrandomness of exit

	CICC	CLCC	CEI	PSEI	JLEI	CPI	BPI
Ethics index=	1	2	3	4	5	6	7
Panel A: Dependent variable: Prob(Exit)							
Invest in 1998	0.146***	0.145***	0.147***	0.153***	0.147***	0.149***	0.138***
	[0.043]	[0.038]	[0.038]	[0.038]	[0.044]	[0.038]	[0.039]
Invest in 1999	0.361***	0.318***	0.315***	0.309***	0.361***	0.308***	0.323***
	[0.062]	[0.052]	[0.052]	[0.052]	[0.061]	[0.052]	[0.053]
Invest in 2000	0.326***	0.304***	0.298***	0.280***	0.326***	0.289***	0.310***
	[0.044]	[0.039]	[0.039]	[0.040]	[0.043]	[0.039]	[0.040]
Panel B: Dependent variable: Prob(Exit/IPO)							
Investment term	−0.003	−0.004	−0.004	−0.003	−0.003	−0.004	−0.007
	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]	[0.003]	[0.004]
Years since last Inv	0.024	0.027	0.026	0.027*	0.027*	0.016	−0.012
	[0.013]	[0.014]	[0.014]	[0.014]	[0.014]	[0.014]	[0.019]
Portfolio size/Mgr	−0.022	−0.520***	−0.314	−0.231	0.192	−0.131	−0.242
	[0.191]	[0.155]	[0.167]	[0.172]	[0.222]	[0.186]	[0.197]
Total Inv in PC	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
VC size	0.020	0.021	0.021	0.018	0.020	0.021	0.019
	[0.013]	[0.014]	[0.014]	[0.013]	[0.013]	[0.014]	[0.016]
Industry M/B	−0.004	−0.003	−0.003	−0.004	−0.003	−0.003	−0.001
	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]
Prefer to originate	0.093	0.099	0.100	0.086	0.094	0.099	0.105
	[0.052]	[0.055]	[0.056]	[0.053]	[0.054]	[0.055]	[0.066]
Corporate VC	−0.134	−0.123	−0.134	−0.125	−0.131	−0.138	−0.157
	[0.090]	[0.089]	[0.092]	[0.091]	[0.092]	[0.094]	[0.112]
VC expertise	−0.001	−0.001	−0.001	0.000	−0.001	−0.002	0.003
	[0.012]	[0.013]	[0.013]	[0.012]	[0.012]	[0.012]	[0.014]

Risk	−0.030	−0.035	−0.035	−0.026	−0.031	−0.033	−0.036
	[0.029]	[0.031]	[0.031]	[0.030]	[0.031]	[0.031]	[0.036]
Market cap	0.091	0.138	0.127	0.061	0.099	0.106	0.043
	[0.076]	[0.083]	[0.082]	[0.076]	[0.079]	[0.079]	[0.092]
Market return	−0.091	−0.162	−0.146	−0.097	−0.123	−0.140	0.151
	[0.120]	[0.127]	[0.128]	[0.122]	[0.125]	[0.124]	[0.151]
GDP per capita	−0.213	−0.128	−0.161	−0.171	−0.167	−0.203	−0.274
	[0.116]	[0.113]	[0.116]	[0.117]	[0.117]	[0.119]	[0.143]
Domestic credit	0.023	−0.023	−0.017	0.011	−0.010	−0.009	−0.095
	[0.075]	[0.077]	[0.077]	[0.077]	[0.077]	[0.080]	[0.092]
VC activity	−0.000***	−0.000***	−0.000***	−0.000**	−0.000***	−0.000**	−0.000**
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Ethics	−1.677***	−0.917***	−1.330***	−1.505***	−2.108***	−0.144***	−0.135**
	[0.338]	[0.247]	[0.314]	[0.314]	[0.445]	[0.033]	[0.051]
# of countries	33	33	33	33	33	33	23
Observations	4,955	4,955	4,955	4,955	4,955	4,955	4,929
Model [2]	178***	203***	206***	190***	211***	207***	188***

Note: The Heckman Selection Model is used for entrepreneurs is $\Pr(IPO_j|Exit) = \alpha + \beta_0 Inv_{i,j} + \beta_1 X_{i,j} + \beta_2 I_j + \beta_3 Y_{j,k} + \beta_4 Ethics_{j,k}$ where the first stage regression is $\Pr(Exit_j) = \delta_0 + \delta_1 T_j + \varepsilon$. Exit is defined as PC current public status of Subsidiary or Public. T is a vector of last investment year Bubble time period dummies (i.e., last investment year = 1998, 1999, or 2000). Inv_i is a vector of investment-specific data such as: Investment Term, Years Since Last Inv, Portfolio Size/Mgr, and Total Inv in PC. X_i is a vector of VC characteristics including: VC Size, Prefer to Originate, Corporate VC, VC Expertise, and Risk. I_j is the industry market-to-book ratio for the industry to which the PC belongs. Y_k is a vector of macroeconomic variables including: Market Cap, Market Return, GDP per capita, Domestic Credit and VC Activity. Ethics is either *CICC* Corporate Illegal Corruption Component, *CLCC* Corporate Legal Corruption Component, *CEI* Corporate Ethics Index, *PSEI* Public Sector Ethics Index, *JLEI* Judicial/Legal Effectiveness Index, *CPI* Corruption Perception Index, or *BPI* Bribery Payer Index

Robust standard errors (clustered around PC) are given in brackets. Macroeconomic data are from World Development Indicators. Sample of PCs from VentureXpert where the last investment occurred between 1998 and 2004. Variable definitions are in the Appendix

*, **, *** indicate significance levels of 10, 5, and 1 %, respectively

Table 2.9 Robustness

	CICC	CLCC	CEI	PSEI	JLEI	CPI	BPI
	1	2	3	4	5	6	7
Panel A: Clustering errors at country level							
Net sales	0.158**	0.048	0.125	0.139*	0.146	1.415*	0.231
	[0.077]	[0.064]	[0.084]	[0.075]	[0.089]	[0.811]	[0.279]
Observations	1,154	1,154	1,154	1,154	1,154	1,154	1,134
# of countries	30	30	30	30	30	30	21
Model R^2	0.056	0.049	0.052	0.054	0.053	0.053	0.050
Net income	1.955**	0.668	1.616	1.761*	1.824*	18.092*	5.573
	[0.944]	[0.799]	[1.045]	[0.933]	[1.079]	[10.181]	[3.913]
Observations	1,184	1,184	1,184	1,184	1,184	1,184	1,052
# of countries	30	30	30	30	30	30	21
Model R^2	0.056	0.048	0.052	0.054	0.053	0.053	0.056
Panel B: No international VC/PC investments							
Net sales	0.198***	0.032	0.155**	0.185***	0.185**	1.825**	0.089
	[0.063]	[0.078]	[0.076]	[0.066]	[0.075]	[0.751]	[0.421]
Observations	1,086	1,086	1,086	1,086	1,086	1,086	1,073
# of countries	26	26	26	26	26	26	19
Model R^2	0.079	0.070	0.074	0.077	0.075	0.075	0.071
Net income	2.550***	0.515	2.069**	2.445***	2.431***	24.756***	3.351
	[0.738]	[0.925]	[0.885]	[0.777]	[0.870]	[8.967]	[6.090]
Observations	1,114	1,114	1,114	1,114	1,114	1,114	890
# of countries	25	25	25	25	25	25	19
Model R^2	0.078	0.068	0.073	0.076	0.075	0.075	0.083
Panel C: Endogeneity							
Net sales	0.263***	0.104	0.293**	0.259**	0.256**	2.513**	6.225
	[0.102]	[0.163]	[0.141]	[0.110]	[0.105]	[1.147]	[5.095]
Observations	1,154	1,154	1,154	1,154	1,154	1,154	1,134
# of countries							
OIR test (p-values)	0.669	0.018**	0.201	0.362	0.453	0.234	0.562
Model R^2 – 1st stage	0.595	0.474	0.388	0.443	0.597	0.679	0.272
Model R^2	0.053	0.048	0.045	0.050	0.050	0.050	0.050
Net income	3.088***	1.581	3.648**	3.146**	3.045***	31.593**	54.667
	[1.101]	[1.903]	[1.566]	[1.222]	[1.145]	[13.149]	[39.308]
Observations	1,184	1,184	1,184	1,184	1,184	1,184	1,052
# of countries							
OIR test (p-values)	0.649	0.027**	0.197	0.358	0.462	0.250	0.115
Model R^2 – 1st stage	0.595	0.474	0.388	0.443	0.597	0.679	0.272
Model R^2	0.053	0.047	0.045	0.050	0.050	0.050	0.050

Note: The multinomial logit model used for entrepreneurs is $Performance_j = \alpha + \beta_0 Inv_{i,j} + \beta_1 X_{i,j} + \beta_2 I_j + \beta_3 Y_{j,k} + \beta_4 Ethics_{j,k} + \varepsilon_j$ where Performance is the most recent financials of the PC: Net Sales and Net Income are scaled by Total Assets. Panel A clusters errors at the country level. Inv_i is a vector of investment-specific data such as: Investment Term, Years Since Last Inv, Portfolio Size/Mgr, and Total Inv in PC. X_i is a vector of VC characteristics including: VC Size, Prefer to Originate, Corporate VC, VC Expertise, and Risk. I_j is the industry market-to-book ratio for the industry to which the PC belongs. Y_k is a vector of macroeconomic variables including: Market Cap, Market Return, GDP per capita, Domestic Credit and VC Activity. Ethics is either *CICC* Corporate Illegal Corruption Component, *CLCC* Corporate Legal Corruption Component, *CEI* Corporate Ethics Index, *PSEI* Public Sector Ethics Index, *JLEI* Judicial/Legal Effectiveness Index, *CPI* Corruption Perception Index, or *BPI* Bribery Payer Index

Robust standard errors (clustered around PC) are given in brackets. Macroeconomic data are from World Development Indicators. Sample of PCs from VentureXpert where the last investment occurred between 1998 and 2004. Variable definitions are in the Appendix

*, **, *** indicate significance levels of 10, 5, and 1%, respectively

There is much work that can be done to more clearly articulate the state of ethics in countries though these indices are a great starting point. The future of research in this area is quite rich given the dearth of research in extant literature.

Conclusions

We are living in a time where unethical behavior is not only more accepted, it's almost becoming the norm. Those with the power to make investment decision with other people's money (i.e., corporate executives and investment advisors) may manipulate investors to make a financial gain. Much debate is ongoing to ascertain how to remedy this situation. In the end, trust must be regained or many companies may find that there are no investors when they need money to finance new projects and for investment advisors, no investors to provide their commissions.

This chapter looks at the value of perceived ethics in an environment that has almost no regulatory oversight: private equity. It examines the impact of country-level perceived ethics on the performance and outcome of private firms. Results suggest that controlling for the size of the entrepreneurship, private firms in countries that are perceived to have higher levels of ethics have higher net income and sales. This result is robust across several proxies for ethics and sources of ethics data. Because of the specificity of the ethics indices, it is possible to pinpoint what facets of ethics should be improved to elicit improvements: corporate ethics (CICC), public sector ethics (PSEI and CPI), and judicial/legality ethics (JLEI).

Results also suggest that the time to exit of PCs is enhanced in nations with a higher perceived level of ethics. The mode of exit appears to be acquisition (versus IPO). Importantly, this enhancement in efficiency does not come with an increase in the probability of firm failure. Indeed, ethics seems to be inconsequential with regard to the probability that an entrepreneurship will go out of business. This is intuitive in the sense that firms that are not of good quality should fail regardless of the perceived ethics in their domicile nation.

Following the underpricing literature, the percentage increase in the price of the IPO from offering to closing price on the first day of trading is used to proxy whether money is left on the table in the process of going public. For those firms that do go public, the benefits come without additional costs to go public. This is seen in an insignificant impact of ethics on the price change from issuance to close on the first trading day.

Collectively, the impact of country-level perceived ethics seems to be unambiguously positive with regard to financial performance, outcome and costs of going public. In a time where trust is at a premium and means of decreasing unemployment levels are sought, these results may be of use to policy makers in an attempt to regain the trust of investors worldwide.

Appendix

Variable definitions and sources

Variable	Definition
PC characteristics	
PC public status	The current public status of PC_j as of status date: defunct, private, subsidiary (exit via M&A), or public (exit via IPO). *Source: VentureXpert*
Net income/total assets	The most recent year's net income for PC_j scaled by the most recent year's total assets. *Source: VentureXpert*
Net sales/total assets	The most recent year's sales for PC_j scaled by the most recent year's total assets. *Source: VentureXpert*
Return to IPO	The percentage change in the stock price for the newly public PC_j from issue to close on the first day. *Source: VentureXpert*
Investment term	The last year PC_j received VC funding minus the first year that PC_j received VC funding. *Source: VentureXpert*
Years since last Inv	2004 (the last year in the sample) minus the year of PC_j's last VC funding. *Source: VentureXpert*
Portfolio size/Mgr	The number of PCs in which VC_i invests divided by the number of managerial staff in VC_i. *Source: VentureXpert; Galante's Private Equity and Venture Capital Directory*
Total investment in PC	The natural log of the total amount investment in the PC_j. *Source: VentureXpert*
Industry M/B	The market-to-book ratio for the industry to which PC_j belongs (Data Item 24*Data Item 25/Data Item 60). *Source: DataStream*
VC characteristics	
Prefer to originate	A dummy variable describing the preferred role VC_i takes in syndications equal to one if the VC prefers to originate and zero otherwise. *Source: VentureXpert*
Corporate VC	A dummy variable that takes on a value of one where VC_i is a corporate venture capitalist and zero otherwise. *Source: VentureXpert*
VC expertise	The number of successful funds VC_i has closed. *Source: VentureXpert*
Risk	An index from zero (low) to two (high) which sums IT Dummy and Early Stage Dummy, indicators of whether VC_i invests in the IT and/or Early Stage PCs, respectively. *Source: VentureXpert*
VC size	The number of portfolio companies in which VC_i invests. *Source: VentureXpert*
PC nation characteristics	
Market capitalization	The market capitalization of $Nation_k$ scaled by gross domestic product for the last year of the PC's investment. *Source: World Development Indicators (WDI)*
Market return	The annual return on the most comprehensive stock market index in $Nation_k$ for the last year of the PC's investment. *Source: DataStream*

(continued)

(continued)

Variable	Definition
GDP per capita	Gross domestic product per capita (purchasing power parity) for $Nation_k$ for the last year of the PC's investment. *Source: (WDI)*
Domestic credit	Credit provided by financial institutions in $Nation_k$, with the exception of credit to the central government, scaled by gross domestic product in the last year of the PC's investment. *Source: WDI*
VC market activity	The natural log of the number of venture capital deals in $Nation_k$ for the last year of the PC's investment. *Source: VentureXpert*
PC nation ethics indices	
CICC (Corporate Illegal Corruption Component)	Percentage firms in the country giving satisfactory ratings (answers 5, 6 or 7) to questions on corporate ethics, funding, state capture cost, average of frequency of bribery in procurement and active capture, corruption in banking (average of formal money laundering and bribery for loans), illegal political and percentage firms reporting 0 % procurement and administrative bribe shares. *Source: Kaufmann* 2004
CLCC (Corporate Legal Corruption Component)	Percentage firms in the country with satisfactory ratings (answers 5, 6 or 7) to the questions on influencing legal political funding and undue political influence. *Source: Kaufmann* 2004
CEI (Corporate Ethics Index)	Percentage firms in the country giving satisfactory rating (answers 5, 6 or 7) to questions on index calculated as the average of the Component and the percentage of firms' Corporate Illegal Corruption Corporate Legal Corruption Component. *Source: Kaufmann* 2004
PSEI (Public Sector Ethics Index)	Percentage firms in the country giving satisfactory ratings (answers 5, 6 or 7) to the questions on honesty of politicians, government favoritism in procurement, diversion of public funds, trust in postal office and average bribe frequencies for permits, utilities and taxes. *Source: Kaufmann* 2004
JLEI (Judicial/Legal Effectiveness Index)	Percentage firms in the country giving satisfactory ratings (answers 5, 6 or 7) to questions on judicial independence, judicial bribery, quality of legal framework, property protection, parliament and police effectiveness. *Source: Kaufmann* 2004
CPI (Corruption Perception Index)	An index from 1 (most corrupt) to 10 (least corrupt) measuring the level of corruption in the public sector. *Source: Transparency International*
BPI (Bribery Payers Index)	An index from 1 (more bribes) to 10 (least bribes) measuring the frequency of bribes paid in business. *Source: Transparency International*

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Chapter 3
Do Private Equity-Backed Buyouts Respond Better to Financial Distress than PLCs?

Robert Cressy and Hisham Farag

Introduction

Buyouts on average add value to target companies, even when financial engineering aspects of the deal are removed (see Cumming et al. 2007 for a synthesis and Cressy et al. 2007 for a recent UK study). This is arguably because of the superior incentives, monitoring and control applied to businesses bought out (Jensen 1989). However, part of the attraction of the buyout to investors lies in the fact that leverage can be applied to (sometimes dramatically) increase value. With it comes also increases financial risk since raising the return on equity (ROE) simultaneously raises its variance. A corollary of this is that if values in the economy are increasing, the additional downside risk of leverage is often seen as minimal in relation to the potential upside gain, whilst if values are decreasing, higher leverage will increase the rate of *decline* of investor wealth. Bankruptcy rates are therefore predicted to increase with leverage. LBOs with their above average debt ratios are therefore particularly at risk. This proposition finds empirical support in the US from Asquith et al. (1994) and in the UK from Wilson et al. (2010).

However, this cloud may have a silver lining. In the recession of 2008 and onwards whilst buyouts did, as predicted, suffer higher rates of bankruptcy than non-buyouts (Wilson et al. 2010) the superior organisational form of the buyout (Jensen 1989) suggests that buyouts might well perform better than their PLC counterparts in recovering debt, as PE firms seem to respond better to distress. This superior performance under distress might result, for example, from better monitoring of loan performance, more decisive action if distress is imminent and

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better restructuring of debt when distress has occurred.[1] However, this hypothesis (we shall refer to it as the 'Jensen hypothesis') has not been tested empirically and nor have the detailed determinants of the alleged superior performance been explored.

Another important characteristic of increasing leverage that appears to have escaped the attention of academics is the likely associated deterioration in collateral quality used to support extra secured lending. The collateralisable assets of a firm are limited and it is highly likely that 'earlier' creditors will select assets of higher quality on which to secure their debt, it follows that (at least at some stage) more secured debt is likely to yield a smaller percentage of value if sold. If this hypothesis is correct it is again particularly likely to affect LBOs since they tend to have higher leverage than their publicly owned counterparts.[2] Hence we should expect that higher levels of leverage just prior to distress onset would be associated with lower recovery rates of secured debt at the end of the recovery process. This proposition like the Jensen hypothesis, has, not been tested empirically. To do so, one needs a control sample, an obvious choice for which would be publicly owned companies (PLCs). To date none has been available.

Thirdly, there are reasons to believe that there may be differences in recovery rates as a function of the recovery *process*. Company protection against creditors is offered in several countries, with Chap. 11 in the US and Administration in the UK being examples. Administration in particular was established as an alternative to Receivership to facilitate selling of the distressed company as a Going Concern rather than as a set of assets ('carcass' value). Administration should, therefore, other things equal, yield a higher recovery rate than Receivership as assets in use tend to be worth more than assets lying idle.[3] Citron and Wright (2008)(CW) using

[1] Asquith et al. (1994) in an examination of 76 US junk bond issuers in the 1980s , found that under distress (defined in terms of the ability of the firm to service debt from operating profits) 78% of firms did private (typically bank) debt restructuring and 45% did public debt (bond) restructuring. The former consisted in covenant waivers, maturity extensions, reductions in main credit facilities and increases in collateral requirements. The latter consisted mainly in exchange offers (equity for debt).

[2] This fact was especially evident in the 1980s takeovers and LBOs in the US which were substantially financed by junk bonds (Asquith et al. 1994); the latter by definition lack security.

[3] Administration orders were first introduced by the Insolvency Act 1986 as a mechanism for protecting companies from their creditors while a restructuring plan is being completed. The Administration mechanism was subject to significant changes after the introduction of the Enterprise Act 2002 which allowed easier access to the process for companies in financial difficulty. Administration orders can be sought by the company, its Directors or one of the creditors. A company in Administration may continue to trade while a plan is formulated to achieve one of the following objectives:

1. Rescuing a company as a going concern, or
2. Achieving a better result for the company's creditors as a whole than would be likely if the company were wound up (without first being in administration), or
3. Realising property in order to make a distribution to one or more secured or preferential creditors.

In practice there is likely to be some form of business to continue after the Administration is completed, either within the existing company or within another company. A company entering into Administration will likely either have its marketable assets sold on the market or will leave Administration to enter into a Company Voluntary Arrangement. The main cost to the Administration process is where the business continues to trade during the process, not only incurring operating costs but also incurring the ongoing costs of the Administrator's team.

UK data on 57 distressed MBOs, regressed total receivership costs against the recovery rate and the sale mode of the company (Going Concern or 'mixed' sale). They found that whilst the coefficient of both the recovery rate and of the sale mode were of the 'right' sign (positive) when both were included in the equation, only the former was significant. Once the recovery rate was dropped from the equation, however, sale mode became significant and positive, suggesting that sale mode and recovery rate are substitutes in determining the costs of Receivership.

Finally, another motivation for developing the process of Administration in the UK seems to have been to speed up the recovery process, thereby to reduce its cost via so-called 'pre-packaging'.[4] This suggests a testable hypothesis that time to recovery (the difference between the entry and exit dates of the Receiver or Administrator) is smaller for Administration than Receivership.[5]

To establish whether PE owned companies perform better according to the above criteria than PLCs one needs to control for the debt recovery process. The work of Citron et al. (2003) (CWBR) and Citron and Wright (2008)(CW) provide insights (as we shall see) into the determinants of recovery rates amongst UK MBOs, and to some degree the role of the recovery process within Receivership. The present study however, goes further and explicitly divides the sample by ownership type (public vs. private equity) and the recovery process (Receivership vs. Administration).

Our study uses a unique hand-collected dataset of 93 UK private equity backed buyouts and 96 PLCs that went into Receivership or Administration over the period 1995–2008 to test the four hypotheses identified above. We find firstly, as predicted, that the recovery rates of buyouts are much higher than those of publicly owned companies: they are in fact around twice that of PLCs. Furthermore, we find that Administration has no effect on the recovery rate of businesses passing through the process but appears to be a much a faster way to deal with distress. We also find, as predicted, that there is a significant negative on correlation of the firm's debt ratio with the recovery rate, which we attribute to the likely decline in collateral quality with leverage. Finally, we find that time to recovery is determined by the date of distress onset and the size of the firm measured by its total assets.

The rest of the chapter is organised as follows. The next two sections survey the literature and set up the hypotheses to be tested. Thereafter the data are introduced and discussed. The following section presents the econometric results. A final section summarises and concludes.

[4] A pre-pack sale occurs where an off-market sale is lined up prior to the start of the Administration process and then the Administrator is appointed simply to conduct the sale. Such a sale must be approved by a professional valuation agent who must take into account all relevant factors in arriving at that valuation. This valuation is a cost of the Administration process. Pre-pack methods have been questioned where the sale of the assets is to a connected, rather than an independent third party.

[5] CW tested whether under *Receivership* sale of a company as a going concern reduced the time to recovery, and whilst the sign of the coefficient was 'correct' (negative), it was not significant at conventional levels.

The Literature

Bolton and Scharfstein (1996) in an optimal contracting framework, analyze theoretically the optimal number of creditors from which a company should borrow. Central to their analysis is the idea that these aspects of the debt structure affect the outcome of debt renegotiation following a default. Debt structures that lead to inefficient renegotiation deter default, but they are also costly if default is beyond a manager's control. The optimal debt structure therefore balances these two effects. One of the predictions of their model is that the larger the number of creditors a firm has, the smaller the recovery rate under distress.

Gilson et al. (1990) investigate the incentives of financially distressed US firms to restructure their debt privately rather than via formal bankruptcy procedures. Using a sample of 169 such companies they find that about half restructured their debt outside of Chap. 11. Firms that restructured privately rather than through formal bankruptcy procedures tended to enhance shareholder wealth.

Denis and Denis (1995) report that 31% of US firms completing leveraged recapitalizations between 1985 and 1988 later encountered financial distress. Following their recapitalisations, distressed firms exhibited (a) poor operating performance (due mainly to industry-wide rather than firm-specific problems), (b) unexpectedly low proceeds from asset sales, and (c) negative stock price reactions to economic and regulatory events associated with the end of the market for highly leveraged transactions (HLTs). They found that the incidence of distress was not related to characteristics previously linked with badly-structured deals and attributed the high rate of distress primarily to unexpected macroeconomic and regulatory developments.

Betker (1995) examines direct restructuring costs of US distressed firms in the context of pre-pack reorganisation procedures. He finds that pre-packaged bankruptcy costs are lower than in Chap. 11 and comparable to those of exchange offers. Fees in Chap. 11 are lower if the firm is a HLT, but decline as the fraction of public debt in the capital structure increases. Direct costs in Chap. 11 are also lower when 'vulture' investors are involved in the restructuring, who are regarded by the authors as facilitators in the process.

Alderson and Betker (1995) investigate the relation between liquidation costs of a US firms' assets and their capital structure when firms were reorganized under Chap. 11. Firms with high liquidation costs, e.g. implying low proceeds from asset sales, emerged from Chap. 11 with relatively low debt ratios. Their debt was more likely to be public and unsecured, and to have less restrictive covenant terms. Such firms were also more likely to raise new equity capital. The authors conclude that assets with high liquidation costs lead firms to choose capital structures that make financial distress less likely.

Andrade and Kaplan (1998) study 31 US HLTs that occurred in the 1980s that later became financially distressed. They estimate that the costs of financial distress are around 10% of firm value and include unexpected cuts in capital expenditures, undesired asset sales and costly managerial delay in restructuring the company.

Mason et al. (2009) investigate the lending practices to the US leveraged buyout (LBO) market prior to the 2007 credit crisis. They find that aggressive lending to riskier borrowers during the 'easy credit' period of 2004–2006 significantly increased the chances that the institution reported above-median write-downs in the credit crisis. However, LBOs by reputable private equity firms were found to mitigate the effects by using loans with more covenants and lower interest spread.

Citron et al. (2003) (CWBR) examined 42 UK failed MBOs that were carried out in the period 1992–1995 to determine secured creditor recovery rates and the factors that influence the extent of this recovery. On average, secured creditors recovered 62% of the amount owed. The percentage of secured credit recovered was higher where the distressed buy-out was sold as a Going Concern and where the principal reason for failure concerned managerial factors. It was lower if the firm had received a Going Concern Qualification in its audit report. The size of MBO at buyout also reduced the recovery rate as did the presence of a Going Concern qualification in the audit report.

Cotter and Peck (2001) examined a set of 64 US LBOs completed in the period 1984–1989. They found that when buyout specialists (PE firms) controlled the majority of post-IPO equity the LBO transaction was less likely to be financed by short term and senior debt and subsequently less likely to default. This study therefore provides empirical evidence for the PE organisational form delivering superior financial distress outcomes over management buyouts.[6]

Franks and Sussman (2005) use a unique dataset to study how U.K. banks deal with financially distressed small and medium-sized companies (SMEs) under a 'contractualist' bankruptcy system. Unlike in the U.S., these procedures limit the discretion of courts to strict enforcement of debt contracts, without any dilution of creditors' claims. They show that lenders and borrowers select a debt structure that avoids some of the market failures often attributed to a contractualist system. Collateral and liquidation rights are highly concentrated in the hands of the main bank, giving it a dominant position in restructuring or liquidating a defaulting firm. They find that there is little litigation, and no evidence of co-ordination failures or of creditors' runs. However, there is some evidence that the bank's dominance makes it 'lazy' in monitoring, instead relying heavily on the value of its collateral in timing the bankruptcy decision.

The lack of evidence of co-ordination failures amongst creditors of distressed firms and growing evidence for the role of the dominant creditor in determining buyout recovery rates (CWBR 2003; CW 2008) seem to be additional prima facie evidence against the Bolton-Scharfstein theory. Nonetheless we proceed to test its implications on our data.

More recent empirical work by Citron and Wright, CW (2008), examined the efficiency of 57 UK buyouts completed in the period 1990–1995 in recovering secured debt from firms entering Receivership. They found that recovery rates were again high: some 62% of secured debt outstanding at the date of appointment of

[6] Rather than superior economic performance which has been well-documented.

the Receiver.[7] However, data limitations prevented the authors from making a direct comparison of buyout recovery rates with those of publicly held companies. Data limitations also prevented CW from comparing the recovery rates of distressed firms (private equity (PE)- or publicly-owned) under Administration and Receivership. However, they showed within their buyout sample that sale of a business as a Going Concern resulted in a higher rate of debt recovery.

Also, whilst the average length of receivership was 3 years, CW showed that in this period 95% of repayments were made within 1.9 years, reducing the effective length of receivership by 1/3. CW tested the proposition of Bolton and Scharfstein (1996) (BS) that multiple lenders might, through greater difficulties in co-ordination of recovery efforts, create inefficiencies in the recovery process. However, their data did not support their claim: recovery rates were not lower for deals with multiple lenders. But, in cases of multiple secured lenders, the authors found that the senior secured lender tended to gain at the expense of other secured creditors.[8] Receiverships were also found to take longer the larger the amount of debt owed to the secured lenders. This last finding predicts then, that the time to recovery of secured debt will depend positively on the scale of lending.

Tashjian et al. (1996) (TLM), provide comprehensive data on the attributes and outcomes of the restructuring process for a sample of 49 financially distressed firms that restructured by means a 'pre-packaged' bankruptcy. The findings complement previous research on out-of-court restructurings and traditional Chap. 11 filings. By most measures used, including the time spent in reorganization, the direct fees as a percent of pre-distress assets, the recovery rates by creditors, and the incidence of violation of absolute priority of claimholders, they find that pre-packs lie between out-of-court restructurings and traditional Chap. 11 bankruptcies. This finding suggests that the UK Administration system of dealing with bankruptcy, similar in spirit to Chap. 11, and now predominantly a pre-pack method of dealing with distress, should be a faster process and should deliver a higher recovery rate than the Receivership alternative.

Hypotheses

Below we set up three main hypotheses, derived mainly from the literature survey. The first relates to recovery rates (proportion of secured debt recovered), the second relates to the time taken to recover debt and the last to the amount of debt recovered.

[7] For comparison, the recovery rate of SMEs in Franks and Sussman (2000) was 70%, whereas non-MBOs in the US achieved 80–100% recovery rates for secured debt (Franks and Torous 1994; Tashjian et al. 1996).

[8] Pond (2002) also found that since the 1986 Insolvency Act, which requires creditors to choose either an Individual Voluntary Arrangement (IVA) or bankruptcy to recover personal debt, that banks used the IVA rather than bankruptcy for strategic reasons, primarily to increase their bargaining power in the debt recovery process. IVA is a process akin to Administration with respect to corporate debt.

Recovery Rates

We have seen there is reason to believe that recovery rates will be higher for the private equity-owned companies due to superior governance and debt covenant structure. Administration, in attempting to sell the company as a Going Concern should also raise recovery rates over that delivered by Receivership. A larger number of creditors, by increasing the scope for disagreement about the shareout of the failed company's assets should reduce the recovery rate. We also expect that a larger debt ratio will result, after some point at least, in a lower recovery rate as early collateral placed will be likely to be of higher quality than later.[9] Likewise, a longer time spent in the recovery process may either indicate a problematic company (difficulty of selling the business or its assets) and so reduce the recovery rate, or it may mean that a more thorough process is being undertaken to sell the company or its assets, thus raising the recovery rate. Thus we state:

H1: Recovery rates under distress (RR) are

(a) *higher for PE-owned companies (Organisational Efficiency: the Jensen hypothesis)*
(b) *higher for companies passing through the Administration process (Procedural Efficiency: Going Concern Outcome)*
(c) *lower the larger the numbers of creditors (Scope for Disagreement)*
(d) *lower for higher debt ratios (Collateral Deterioration)*
(e) *higher/lower the longer the time spent in recovery (Effort/difficulty in Recovering Debt)*

The econometric formulation of hypothesis H1 is

$$RR_i = \beta_0 + \beta_1 \mathrm{PLC_i} + \beta_2 \mathrm{Admin} + \beta_3 Numcred_i + \beta_4 Drat_i + +\beta_5 \mathrm{Time}_i + \beta_6 V_i + \varepsilon_i \quad (3.1)$$

where

– *PLC* is a dummy variable taking the value 1 if the company was publicly owned (a PLC) and 0 if private equity backed (a Buyout).

[9] Banks may of course reduce the amount they are willing to lend on lower quality assets. (We are grateful to a referee for making this point). However, banks may be willing to accept lower value collateral on a loan if they can charge a higher interest rate. So the ratio D/C of loan(D) to collateral (C) may not be constant. Our hypothesis is that if the company's debt ratio (D/TA) (equivalently, its leverage, D/E) increases, it is likely that D/C will increase. Thus if collateral quality decreases the recovery rate under distress will fall and firms are likely to have to pay higher interest rates on the additional debt to compensate the bank. The state of the economy may also influence the value of collateral (in recessions it is likely to fall). We control for the latter by our GDP growth variable *Gdpgrow* and by the distress onset variable *Year*. Insofar as the effects on the value of collateral are industry related, we have controlled for this as far as possible by our industry dummies.

- *Admin* is a dummy variable taking the value 1 if the distressed firm passed through Administration and 0 if Receivership.
- *Numcred* is the number of creditors the company
- *Drat* is secured debt/total assets
- *Time* is the number of days the firm spends in recovery.
- V is a vector of industry and macro controls.

Time to Recovery

The time to recover debt from a given sized company, in a particular industry, during the same part of the economic cycle (level of *gdpgrow*) and in a particular recovery mode (*Admin* = 0,1) is unlikely to vary between ownership types (*Plc* versus *PE*). This is because the process of selling assets or the business as a whole will represent the same sorts of problems regardless of ownership type. The time taken to resolve them is therefore likely to be similar. We thus hypothesise that other things equal, the *PLC* dummy in the *Time* equation will be insignificant. We therefore include it in the vector of controls, V.

There is also a movement over calendar time towards a shortening of the recovery process. We hypothesise that when other relevant factors are controlled for this trend persists. Secondly, as Administration largely uses 'prepack' methods, designed to speed up the recovery process, we expect Administration to take a shorter time to recover debt than Receivership.[10] Thirdly, we expect that a larger number of creditors, by increasing the scope for disagreement, will be associated with a longer time in recovery. Finally, we expect, cet par, that larger firms will take longer in the recovery process due to the additional complexity involved in recovering their debt. This last may be a linear or quadratic relationship. In summary,

H2: Time in recovery

(a) *is shorter for later distress events (Secular trend)*
(b) *is shorter for the Administration process (Policy design)*
(c) *is longer the larger the number of secured creditors (Delay from disagreement)*
(d) *is shorter for smaller businesses (Simplicity of recovery)*

The econometric formulation of H2 is

$$Time_i = \beta_0 + \beta_1 Apptdat + \beta_2 \mathrm{Admin_i} + \beta_3 Numcred_i + \beta_4 TA_i + \beta_5 TA2_i + \beta_6 V_i + \varepsilon_i \quad (3.2)$$

where

- TA2 is the square of TA

[10] We note however from the correlation matrix that Admin is highly positively correlated with Apptdat (r = 0.71). Initial regression experiments demonstrated that the inclusion of both variables in the regression produced high levels of instability in the data matrix (CN = 10,841!). Hence we chose to drop *Apptdat* from the regressions below.

Modelling Considerations

In view of the dependent variable RR's non-Normality noted above,[11] and the possible bias in confidence intervals that this will induce, we also estimate a Ordered Logit function for a 'discretised' version of the recovery rate. Assume that firm i is allocated to (discrete) recovery outcome j, j = 1, 2 . . . m, depending on its performance y_j, the probability of allocation (i,j) is

$$\begin{aligned} p_1 ij = \Pr(y_1 j = 1) &= \Pr\left(k_\downarrow (i-1) < x_1 j\beta + u \leq k_1 i\right) \\ &= \phi\left(k_i - x_j\beta\right) - \phi\left(k_{i-1} - x_j\beta\right) \end{aligned} \tag{3.3}$$

where the k_i's represent the limits of the discrete categories with $k_0 = -\infty, k_m = \infty$; β is a vector of parameters; x_j is a vector of characteristics relevant to explaining firm i's performance, and $\phi(z)$ is the cumulative distribution function for the logistic distribution evaluated at z. We define $x_j = (PLC_j,\ Admin_j,\ Numcred_j,\ Dr\ at_j, Time_j, V_j)$ as in Eq. 3.1. The log likelihood is then

$$lnL = \sum_{j=1}^{N} w_j \sum_{i=1}^{m} I_i(y_j) \ln(p_{ij}) \tag{3.4}$$

where

$$l_i\left(y_j\right) = \begin{cases} 1 & if\ y_j = i \\ 0, & else \end{cases} \tag{3.5}$$

and the w_j are optional weights for the observations. Maximising this with respect to the vector β yields the parameter estimates of interest.

Recovery Levels

Our first hypothesis below on debt recovery levels is based on the idea that, controlling for industry, collateral availability and ownership type, larger companies on average have better quality assets than smaller; in consequence they offer higher recovery levels at a given level of senior debt. The second hypothesis says that more senior debt leads to a greater amount of debt recovered since senior debt, by definition, is collateralised on company assets and more collateral implies a larger amount recovered. The third hypothesis is simply another formulation of the Jensen hypothesis and based on the idea that the PE organisation

[11] A similar distribution seems to have been found in Citron et al. (2003).

form, as a result of its superior governance structure and covenants, is able to extract a larger recovered amount from a given amount of borrowed. Our fourth and final hypothesis is another formulation of the procedural efficiency hypothesis applied to the recovery process and is therefore based on the idea that Administration, by attempting to sell the company as a whole, will, for a given time in recovery, generate larger amounts recovered. In summary:

H3: Larger absolute debt recovery levels will be associated with

(a) *Larger companies (Asset quality)*
(b) *Larger amounts of secured debt (Collateral availability)*
(c) *The PE organisation form (Organisational form)*
(d) *The Administration recovery mode (Going Concern versus carcass value)*

The regression formulation we use to test this H3 is

$$Lsdebtr_i = \delta_0 + \delta_1 LTA_i + \delta_2 Lsdebt_i + \delta_3 PLC_i + \delta_4 Ad\min + \delta_5 Ltime + \delta_6 V_i + \eta_i \quad (3.6)$$

where

- *Lsdebtr* is the ln(secured debt recovery level)
- $LTA = ln(TA)$[12]
- *Lsdebt* is the amount of secured debt on the firm's books in the last accounts prior to distress.
- $Ltime = ln(Time.)$
- η_i is a white noise error term.

We specify a log formulation above in order to Normalise the dependent variable and to reduce the standard error of the regression.

Data

By the process described below we were able to assemble data from Companies House on 189 publicly and private equity owned companies that had *both* entered *and* exited Receivership or Administration in the period 1997–2009.[13] In the case of Buyouts, the sample obtained is in fact the population for the period in question.

[12] Note that we omit *Drat* (or its log) since this would be equivalent, holding constant company size measured by TA, to regressing *sdebtr* = *sdebtr*/*TA* on *TA* or *Sdebt* on a variable proportional to *Sdebt*.

[13] Unlike Citron et al. (2003) and Citron and Wright(2008) we chose distressed firms that had completed the recovery process on the grounds that this would provide us with the most accurate recovery data. This raises the issue of selection bias which we deal with by running Heckman regressions in addition to OLS.

In the case of PLCs we chose a random sample from the population without any attempt at matching.[14]

Data were collected from several sources. Distressed Buyout companies' names and registration numbers were kindly provided by the Centre for Management Buyout Research (CMBOR) at the University of Nottingham. PLC companies' names and registration numbers were kindly provided by the Centre for Credit Management (CCM) at Leeds University Business School. Companies House website was then used to download some 1,500 company documents from which we manually calculated the recovery rates for 189 companies (93 Buyouts and 96 PLCs) with distress dates (entry of the Receiver or Administrator) over the period 1997–2009.

The information to do this was obtained from an analysis of annual company Statements of Affairs to identify the balance of secured debts. The annual Receiver/Administrator Abstract of Receipts and Payments was then utilised to identify the annual proportion of secured debt recovered subsequent to distress onset.[15] Companies House website also provided useful information about the companies' insolvency history (including the time involved in the Rec/Admin process), industry classification code (SIC92) and financial statements.

The set of variables relevant to testing hypotheses H1–H3 identified above are listed with definitions in Table 3.1.

Empirical Analysis

Figures 3.1 and 3.2 below show the pattern of distress outcomes for PLCs and Buyouts over the period 1997–2009 respectively.

In the case of PLCs (Fig. 3.1) it is clear that an upward trend occurs from about 1997 onwards with a break in 2002–2005. In the case of Buyouts (Fig. 3.2) total numbers peaked in 2003 and pretty much declined thereafter, with a brief rise in 2006–2007. Year 2008 buyout failures are recorded as zero but in 2009 are beginning to show signs of an upward trend again. Examining the breakdown into outcome types, Fig. 3.1 shows that PLCs have increasingly resorted to Administration when encountering distress, with Administration being the exclusive outcome for such firms at and after 2007.

Receivership cases for PLCs correspondingly decline after 2003. By contrast, buyouts ending in Receivership declined since 2002 whereas Administration outcomes have fluctuated. In the case of PLCs missing data was low and showed little trend whereas for buyouts missing data cases were higher though showing a declining trend after 2003.

[14] Originally our intention had been to match the two samples by size and industry. However, attempts to do this threatened to result in a very small sample size for PLCs. PLCs are generally (see Table 3.4) considerably larger (by about a factor of two) and located in different industries from Buyouts (e.g. twice as likely to be in Manufacturing). These differences are controlled for in the regression analysis.

[15] The latter is defined as the secured debt recovered to debt outstanding at the last available accounts date prior to distress onset.

Table 3.1 Variable definitions

Variable	Definition
PLC	Dummy = 1 for PLCs and =0 for PE owned (Buyout) companies
Admin	Dummy = 1 if the firm passed through Administration; =0 if it passed through Receivership
Sdebt	Amount (£m) of secured debt
Sdebtr	Amount (£m) of secured debt recovered
Lsdebtr	Ln(Sdebtr)
RR	Sdebtr/Sdebt
RRdum (i, j)	Dummy = 1 if firm i's RR is in category j, j = 1, 2 . . ., 10
Time	Time in days to recovery of debt (=Receiver/Administrator exit date – entry date)
TA	Total assets (£m)registered in the firm's last accounts prior to distress
TA2	Square of TA
Equity	Book value of equity ditto
FA	Fixed assets ditto
Numcred	Number of secured creditors in the company prior to distress
Lnum	=ln(numcred)
Drat	Sdebt/TA
Year	Year of appointment of the Receiver or Administrator ('distress onset')
Manu	Dummy = 1 if the company is in Manufacturing industry ; =0 else
Itcomm	Ditto, IT and Telecommunications
Fin	Ditto, Financial Services
Whole	Ditto, Wholesale
Retail	Ditto, Retail
Service	Ditto, Other Services
Gdpgrow	Annual growth rate of GDP at the date of appointment of Receiver or Administrator
Baserate	Average annual Base rate at ditto

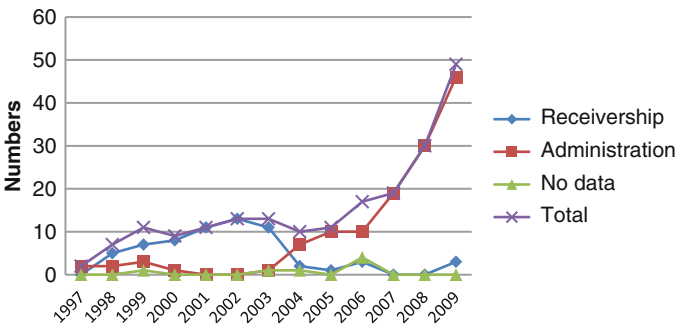

Fig. 3.1 Frequencies of PLCs in distress, 1997–2009 by recovery type

Table 3.2 shows the breakdown of the sample by ownership and outcome type. By design the total of 189 cases is roughly evenly divided between Receivership and Administration outcomes and between publicly owned (PLC) and private equity (buyout) ownership types.

Table 3.3 shows the descriptive statistics for the pooled sample of the variables used in the regressions to follow whilst Table 3.4 shows the results broken down by

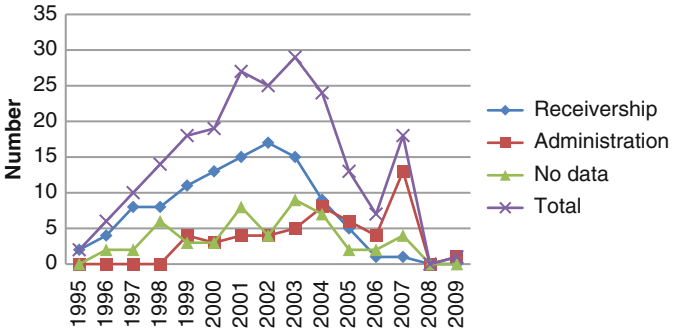

Fig. 3.2 Frequencies of buyouts in distress, 1997–2009, by recovery type

Table 3.2 Sample structure by ownership type and outcome (numbers)

	PLC-owned	PE-owned	Total
Receivership	50	50	100
Administration	46	43	89
Total	96	93	189

Table 3.3 Descriptive statistics for the pooled sample

Variable	Mean	Std Dev	Minimum	Maximum
RR	0.4492	0.3743	0.0000	1.0000
Admin	0.4709	0.5005	0.0000	1.0000
PLC	0.5079	0.5013	0.0000	1.0000
Sdebt	14.083	33.925	0.0079	238.76
Sdebtr	4.8185	17.669	0.0000	155.60
Time	977.34	745.24	105.00	3370.0
Year	2003.7	2.8775	1998.0	2009.0
TA	34.603	82.111	0.1070	633.40
Drat	1.4677	10.385	0.0023	130.81
Numcred	1.5661	0.9409	1.0000	6.0000
Sdrcred	3.3646	14.860	0.0000	155.60
Manu	0.4603	0.4997	0.0000	1.0000
Itcomm	0.1164	0.3216	0.0000	1.0000
Fin	0.0635	0.2445	0.0000	1.0000
Whole	0.1006	0.3015	0.0000	1.0000
Retail	0.0582	0.2347	0.0000	1.0000
Service	0.2011	0.4019	0.0000	1.0000
Gdpgrow	2.4481	1.1822	−4.3392	3.9150

The table reports variable means, standard deviations, minima and maxima for the pooled sample (both organisation types and recovery modes). For definitions of variables see Table 3.1. Size measures (*Turnover*, *Equity*, *FA, TA*) are all expressed in millions of pounds Sterling. Note that *drat* can be greater than one if *Equity* is negative

Table 3.4 Descriptive statistics by ownership mode

Variable	Mean	Std Dev	Minimum	Maximum
Panel A: PE owned (Buyout)				
Year	2003.4*	2.3657	1999.0	2009.0
Sdebt	5.1466***	8.9818	0.0079	60.544
Sdebtr	2.4742	5.5403	0.0000	48.000
Time	997.56	674.70	208.00	3084.0
TA	12.267***	25.976	0.1070	185.29
Drat	2.6245	14.836	0.0051	130.81
Numcred	1.6774	0.8988	1.0000	5.0000
Manu	0.6129***	0.4897	0.0000	1.0000
Itcomm	0.0645**	0.2470	0.0000	1.0000
Fin	0.0215	0.1458	0.0000	1.0000
Whole	0.1075	0.3115	0.0000	1.0000
Retail	0.0322	0.1776	0.0000	1.0000
Service	0.1612*	0.3698	0.0000	1.0000
Gdpgrow	2.6416***	0.9002	−4.3392	3.9150
Panel B: Publicly owned (PLC)				
Year	2003.8*	3.2979	1998.0	2009.0
Sdebt	22.647***	45.129	0.0275	238.75
Sdebtr	7.0650	23.973	0.0000	155.60
Time	957.57	811.70	105.00	3370.0
TA	56.007***	108.06	0.5500	633.40
Drat	0.3710	0.3356	0.0023	1.8791
Numcred	1.4583	0.9724	1.0000	6.0000
Manu	0.3125***	0.4659	0.0000	1.0000
Itcomm	0.1666**	0.3746	0.0000	1.0000
Fin	0.1041	0.3070	0.0000	1.0000
Whole	0.0937	0.2930	0.0000	1.0000
Retail	0.0833	0.2778	0.0000	1.0000
Service	0.2395*	0.4290	0.0000	1.0000
Gdpgrow	2.2606***	1.3816	−4.3392	3.9150

The Table reports descriptive statistics broken down by ownership type (PE in panel A and PLC in panel B). For definitions of variables see Table 3.1
***, ** and * indicate differences in means at the 1, 5 and 10 % levels, respectively

ownership mode. The table reveals that PLCs just prior to distress are four or five times as large as PE backed companies when measured by total assets (TA) (£56 m vs. £12.3 m). The debt ratio of such companies is also much lower (12.3 versus 37) though this difference is not significant at conventional levels.[16] PLCs are only half as likely to be in Manufacturing as PE backed companies (31% versus 61%) but are over two and a half times as likely to be in IT or Telecomms(16.7% vs. 6.5%) and one and a half times as likely to be in services (24% vs. 16%).

Table 3.5 presents the correlation matrix for the pooled sample. Whilst most correlation coefficients are relatively small, there are clusters of large positive and

[16] The debt ratio, drat, is defined as secured debt over total assets. Since equity can be negative (and is negative for a significant proportion of companies) this means that drat can exceed 1.

Table 3.5 Correlation matrix of regressors

	Numcred	RR	Time	Turn	TA	Equity	FA	Admin	PLC	Sdebt	Sdebtr	Drat	Apptdat	Baserate	Gdpgrow
Numcred	1.0000														
RR	0.0366	1.0000													
Time	−0.0263	−0.1125	1.0000												
Turn	0.0792	−0.1229	0.1386	1.0000											
TA	0.1120	−0.0709	0.0828	**0.8113*****	1.0000										
Equity	**0.1031***	−0.0489	0.1036	**0.6049*****	**0.8868*****	1.0000									
FA	**0.1029***	−0.0698	0.0745	**0.5439*****	**0.8576*****	0.8264	1.0000								
Admin	0.0521	0.0057	−0.5418	**−0.0165**	0.0895	0.0887	0.0936	1.0000							
PLC	−0.1167	**−0.4683*****	−0.0269	**0.2687*****	**0.2670*****	**0.2209*****	**0.2837*****	**0.0168*****	1.0000						
Sdebt	0.1561	−0.1164	−0.0294	**0.7194*****	**0.8929*****	**0.7803*****	**0.8109*****	**0.1361***	**0.2585*****	1.0000					
Sdebtr	0.1059	0.0988	−0.0512	**0.5451*****	**0.8501*****	**0.7947*****	**0.7956*****	**0.1776****	**0.1302***	**0.8616*****	1.0000				
Drat	−0.0156	−0.0982	0.0167	−0.0458	−0.0435	**0.1402***	−0.0429	−0.0299	−0.1087	**0.0123****	**−0.0117****	1.0000			
Apptdat	0.0439	−0.0058	**−0.6279*****	−0.0751	0.0444	0.0493	0.1114	**0.6323*****	**0.4216*****	**0.1284***	**0.1370***	−0.0169	1.0000		
Baserate	0.0885	−0.0864	**0.2673*****	0.0430	−0.0054	−0.0022	−0.0065	**−0.2169*****	**−0.2150*****	**−0.0087**	**0.0071**	−0.0501	−0.5284***	1.0000	
Gdpgrow	0.0579	−0.0212	**0.3591*****	0.0751	0.0301	0.0257	−0.0099	**−0.3849*****	**−0.3741*****	**−0271**	**−0.0080**	−0.0058	−0.6372***	0.8689***	1.0000

The table shows the simple correlations between covariates in the pooled sample. For definitions of variables see Table 3.1

*, ** and *** indicate significance at the 10, 5 and 1 % levels

large negative coefficients (highlighted in bold). The correlations between the size measures (*Turnover, TA, Equity and FA*) all exceed 0.5 and many are over 80%.

Likewise the correlations between secured debt (*Sdebt*) and its recovered counterpart (*Sdebtr*) and the size measures are again very high, exceeding 70% in general. The date of the appointment of the Receiver or Administrator (*Apptdat*) is highly negatively correlated with the time spent in recovery (*Time*) indicating that later recovery times are shorter. GDP growth rate (*Gdpgrow*) is highly correlated with both *Apptdat* (+) and *Baserate* (−). Finally, the amount of secured debt recovered over total assets (*RR*) is negatively correlated with PLC status (*PLC*). Needless to say, high absolute values of the correlations amongst the regressors may produce instability in pooled sample regressions. To finesse this, we use the Belsley et al. (1980) (BKW) Condition Number (CN) of the data matrix for each regression to decide if the correlations amongst regressors are likely to lead to instability of the coefficients. Our maximum permitted value for the CN is 20.[17] If CN exceeded this value we performed separate regressions for each of the pair of regressors.

Regression Analysis

Figure 3.3 is a histogram of the recovery rate (RR) variable. It is distinctly non-Normal[18] with mass points at 0 and 1. This suggests heterogeneity with respect to firms in the 0–10% and 91–100% recovery rate categories making them different from the average firm. OLS estimation may therefore lead to bias in the coefficients and problems with the validity of the significance tests, which assume Normality of the residuals. There are a number of ways of dealing with this problem. After preliminary estimates using OLS we chose to estimate an Ordered Logit model. This was done firstly, by 'discretising' the RR values, creating a series of 10 dummy variables to allow for differences in the intercepts between the different categories (RR values).[19] After preliminary OLS estimates (Table 3.6) we ran an Ordered Logit model (Table 3.7).

Another consideration in the estimation is that of statistical truncation. Because we analyse only companies for which *complete* recovery data is available, there is

[17] The CN is defined as the ratio of the largest to the smallest Eigenvalue of the data matrix X'X. The minimum value of the CN is 1 which occurs when the regressors are orthogonal. If the CN exceeds 20 the regressors are regarded by BKW as sufficiently highly correlated as a group to create instability of the regression coefficients.

[18] This assertion is amply confirmed by a Jarque-Bera test which yields $p = 0.0000$.

[19] Citron et al. (2003) adopted a logistic approach to 'discretisation' of the dependent variable with two different cutoff points defining the dummy dependent variable. Our approach by contrast is to recognise that the dependent variable can be represented as a large set of discrete dummies converging in the limit to a continuous but truncated variable. We chose ten dummies defined on decile intervals. Larger numbers of intervals produced very similar results.

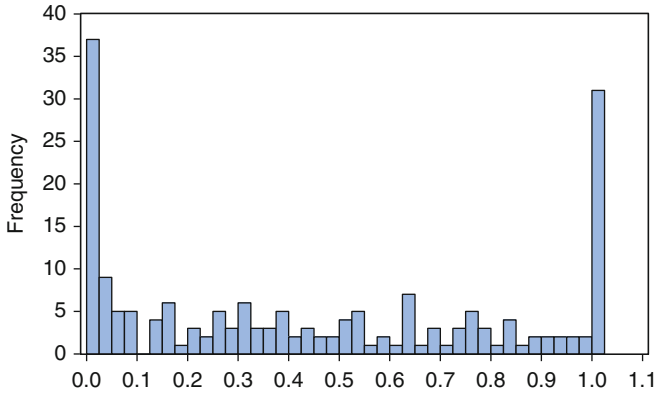

Fig. 3.3 Histogram of recovery rates of secured debt (RR)

the possibility that the recovery rates for those still in process at the time of data collection vary systematically from those completed. We deal with this in Table 3.6 by estimating Heckman regressions including an inverse Mills ratio from a probit regression on a dummy which takes the value 1 if data is present on *RR* and 0 elsewhere.[20]

Model 1 of Table 3.6 is the straightforward OLS regression without Heckman corrections for missing recovery rate (*RR*) data. Despite the quite high correlation identified earlier between *Admin* and *Time,* co-linearity between these two variables in the regression proved to be insignificant, measured by the CN of the regression. Our estimation therefore includes both variables as regressors. However, the co-linearity between *Gdpgrow* and both *Apptdat* and *Baserate* was much more serious (CN = 250) and we therefore dropped these last two variables. The resulting OLS model has an acceptable CN of 12.

Model 1 of Table 3.6 is significant at the 1% level ($(p > F) < 0.0001$). The *Admin* dummy has a negative sign (consistent with theory) but is statistically insignificant, contrary to H1b, that Administration increases the recovery rate. By contrast, the PLC dummy is negative and significant at well below the 1% level, consistent with H1a, that PE backed firms are better at dealing with distress than their public counterparts. Time to recovery of debt (*Time)* has a negative and highly significant coefficient ($p < 1\%$ in Model 2 or $<5\%$ in Models 1 and 3), suggesting that longer recovery times are associated (for fixed size) with more 'complicated' companies whose value is difficult or impossible to extract for creditors. Such companies require more Receiver or Administrator time and therefore their recovery rate is lower (Citron et al. 2003), consistently with one version of H1e. The debt ratio (*Drat*) is, as predicted by H1d, highly significant and negative

[20] The independent variables in the probit are *apptdat* and its square, *apptdat2*.

Table 3.6 OLS and Heckman recovery rate (RR) regressions

	Model 1	Model 2	Model 3
Intercept	0.7478***	0.6459***	0.5533***
	(0.1202)	(0.1302)	(0.1173)
PLC	−0.3321***	−0.3755***	−0.3400***
	(0.0577)	(0.0607)	(0.0578)
Drat	−0.0050**	−0.00496**	−0.00482**
	(0.00240)	(0.0023)	(0.00232)
Admin	−0.0605	−0.0834	–
	(0.0633)	(0.0622)	
Time	−0.0000945**	−0.000106***	−0.0000727**
	(0.0000422)	(0.0000407)	(0.0000355)
Numcred	−0.0232	−0.0282	–
	(0.02900)	(0.0276)	
TA	0.000252	0.00037	–
	(0.000355)	(0.000348)	
Lambda	–	0.1950*	0.1297
		(0.1148)	(0.1099)
R-Square	0.2522	–	–
Adj R-Square	0.1947	–	–
Root MSE	0.3280	–	–
F Stat. (12,156)	4.39***	–	–
Wald Chi2	–	59.05***	54.14***
Wald df	–	12	9
CN	12	–	–
N uncensored	169	169	169
N censored	–	190	190

The Table shows the results of OLS (Model 1) and Heckman (Models 2 and 3) regressions of the recovery rate (RR) against explanatory variables based on Eq. 3.1 in the text. (For definitions of variables, see Table 3.1). Standard errors are in brackets

*, ** and *** indicate significance at the 10, 5 and 1 % levels respectively

Industry dummies, total assets and gdp growth rate were included in the regression but are excluded from the presentation to save space. A joint test, however, shows them to be insignificant at conventional levels

in sign, suggesting that more leveraged companies are indeed collateralised on lower quality assets, at the margin. Finally, contrary to H3c (but consistent with the findings of Citron et al. 2003), the number of creditors (*Numcred*) has a negative, but quite insignificant, effect on the recovery rate. Thus the results contradict the prediction of Bolton and Scharfstein (1996).

Now, the sign of the coefficient of *Time* is negative and significant whereas that of *Admin* is negative and insignificant. We conjectured at this stage that a reason for the negative sign of *Time* might be that the variable was endogenous and therefore a possible source of bias for the coefficient of *Admin* in the regression: a higher recovery rate might require more time to be spent in recovery. However, a Hausman test rejected the hypothesis that *Time* depends on *RR*. Deleting the insignificant *Admin*, *TA* and *Numcred* from the equation we get parsimonious

Table 3.7 Ordered Logit estimates of the recovery rate (*RRdum*)

	Model 0		Model 1		Model 2	
	Coeff (χ^2)	$p > \chi^2$	Coeff (χ^2)	$p > \chi^2$	Coeff (χ^2)	$p > \chi^2$
α_1	−1.3471 (56.17)	<0.0001	−1.4185 (12.32)	0.0004	−0.1690 (0.11)	0.7386
α_2	−1.1057 (43.17)	<0.0001	−1.1739 (8.64)	0.0033	0.1071 (.05)	0.8320
α_3	−0.7900 (25.33)	<0.0001	−0.8534 (4.70)	0.0302	0.4755 (0.89)	0.3461
α_4	−0.5080 (11.44)	0.0007	−0.5649 (2.10)	0.1472	0.8217 (2.63)	0.1046
α_5	−0.2446 (2.79)	0.0951	−0.2933 (0.57)	0.4486	1.1535 (5.13)	0.0235
α_6	−0.0529 (0.13)	0.7161	−0.0937 (0.06)	0.8081	1.4018 (7.48)	0.0062
α_7	0.3093 (4.41)	0.0356	0.2847 (0.55)	0.4600	1.8717 (12.96)	0.0003
α_8	0.5993 (15.53)	<0.0001	0.5864 (2.29)	0.1306	2.2425 (18.02)	0.0001
α_9	0.8650 (29.49)	<0.0001	0.8662 (4.88)	0.0271	2.5865 (23.19)	0.0001
PLC	–	–	–	–	−2.0284 (41.45)	<0.0001
Numcred	–	–	–	–	0.0119 (0.01)	0.9288
Drat	–	–	–	–	−0.0370 (3.03)	0.0819
$\chi^2(6)$	10.12	0.1197				
$\chi^2(3)$	52.84	<0.0001				
N	189		189		187	

The table shows the results of a Ordered Logit regression based on Eq. 3.3 in the text. The Chi-squared values compare model 1 with model 0 (6 df) and model 2 with model 1 (3 df). Industry dummies and Gdp growth rate were included in the regression but to save space are not reported. Standard errors are in brackets

Model 3 of Table 3.6.[21] Now the signs remain the same and the Wald statistic is lower, but the coefficient of the selection term *lambda* is insignificant.

To test the robustness of the OLS estimation we now employ a procedure that explicitly allows for the fact that the dependent variable RR is not Normally distributed.[22] To do this we define a dummy variable with 10 values, D(i) equal to 1 for the ith decile and zero elsewhere. The probability that the ith firm will fall into jth category (decile) is given by Eq. 3.3 above.[23] Table 3.7 presents the results of estimating the Ordered Logit[24] function based on these ten categories. In all models the intercepts for the Ordered categories (α_i) are generally highly significant. This suggests the appropriateness of the Ordered approach as a description of the data. The first Chi-square statistic of the table, 2[LL(T)-LL(0)], compares the residual sum of squares of the model with the four theoretical variables, industry and intercept dummies with that of a model with only α_1. It has 6 df (15–9). The second Chi-square, 2[LL(F)-LL(T)], compares the Ordered model with and without

[21] Note that the mean squared errors of the two equations are almost identical. Thus the predictive qualities of the two are also likely to differ little.

[22] The distribution of *RR* is shown in Fig. 3.3. If uncorrected, this would present problems in interpreting the significance tests on individual variables of OLS since these would then be biased.

[23] We do not estimate the probability of falling into the tenth category since this is by definition equal to 1.

[24] An Ordered Logit was also tried but failed the test of the proportional odds assumption crucial to its validity.

industry effects in addition to the category-specific intercepts. It has 3 df (18–15). The Chi-square value for the theory variables is highly significant ($p < 0.0001$) but that of size, industry and macro effects lies just outside conventional levels ($p = 0.11$). We note that despite this method's matching the distribution of the dependent variable (RR) better, the signs of the theory variables are identical to those of the OLS regressions.[25]

Table 3.8 reports the results of the time-to-recovery regressions. We present the results separately for the correlated variables *Admin* and *Apptdat*.[26] Models 1a and 1b are straightforward OLS. They include the variables, *PLC, Admin or Apptdat, Numcred*, *TA* and its square, *TA2*.[27]

Confirming the results of CW, and consistently with H2a, all Models indicate that company ownership (*PLC*) has no effect on the time spent in recovery. By contrast, Administration seems to have a major effect on recovery times in all models in which it is included (consistently with H2b), reducing them by 707–741 days, or by around 2 years on average. However, it is difficult to be sure that this is not simply a secular trend, independent of the move towards Administration as a way of dealing with distress in PLCs.

Size (measured by total assets, *TA*) matters in all models, with larger firms taking a longer to come out of the recovery process, consistently with H2c. However, the significance of size in time to recovery varies somewhat between the models, and in the *Apptdat* models (1b, 2b, 3b) it enters nonlinearly, indicating a concave, increasing effect of firm scale on recovery time.

Finally, and inconsistently with H2d, we find no influence of the number of creditors on the time to recover secured debt.

We now move to an examination of the determinants of recovery levels, testing hypotheses 3 above. Table 3.9 reports the debt recovery *level* (*Lsdebtr*) regressions. Explanatory variables consist of the log values of *Sdebt, TA, Time* and *Numcred* and the dummies *PLC* and *Admin*. Separate regressions are presented for the variables *Ltime* and *Admin* to minimise collinearity problems. We note that the *Ltime* regression of Model 1a has a relatively high CN (29) indicating some degree of instability of the data matrix.

[25] We present the full model including industry and macro dummies but excluding *Time* and *Admin*. *PlC* and drat remain negative and significant whilst *Numcred* is of the 'wrong' sign (positive) but highly insignificant to boot ($p = 0.93$). Once more a joint test on the industry dummies does not enable us to reject the Null ($p(Chi^2) = 0.65$). The GDP growth rate (*Gdpgrow*) is now significant (and negative in sign) but only at the 10% level. The sign of drat is still positive but its significance falls to the 10% level.

[26] It should be mentioned that the *Apptdat* regression has a high CN making the estimates relatively unstable. However, attempts to remove this instability by separate regressions failed as it does not appear to result from high correlations amongst *individual* pairs of variables.

[27] We also experimented with interaction terms between the dummies PLC and Admin but found them to be insignificant in all cases. In order to reflect skewness of the dependent variable an Ltime = log(Time) version of the equation was also tried, but the results were essentially the same. Hence they are unreported although available on request.

Table 3.8 OLS and Heckman time-to-recovery regressions

	Model 1a (Admin)	Model 1b (Apptdat)	Model 2a (Admin)	Model 2b (Apptdat)	Model 3a (Admin)	Model 3b (Apptdat)
Intercept	766.04***	20630***	506.87*	20480***	471.18**	20434***
	(211.10)	(1860.0)	(236.47)	(1995.2)	(227.44)	(1982)
PLC	16.63	−22.791	−85.725	−63.034	–	–
	(108.74)	(108.26)	(114.13)	(101.791)		
Admin	−707.64***	–	−741.52***	–	−735.68***	–
	(103.75)		(102.44)		(100.13)	
Apptdat	–	−0.5187***	–	−0.5178***	–	−0.5177***
		(0.0477)		(0.0503)		(0.0498)
Numcred	−5.209	−22.22	−16.762	−27.98	–	–
	(54.49)	(46.706)	(51.78)	(46.609)		
TA	3.171*	4.197***	3.334**	4.271***	3.014*	4.065***
	(1.774)	(1.363)	(1.681)	(1.519)	(1.622)	(1.459)
TA2	−0.00391	−0.00614***	−0.00376	−0.00611**	−0.00338	−0.00585**
	(0.00309)	(0.00204)	(0.00295)	(0.00264)	(0.00291)	(0.00259)
Lambda	–	–	457.07**	184.59	388.85**	130.5
			(214.28)	(186.61)	(194.18)	(170.4)
R-Square	0.3624	0.4942	–	–	–	–
Adj R-Square	0.3180	–	–	–	–	–
Root MSE	617.81	550.23	–	–	–	–
F(11,158).	8.16***	20.18***	–	–	–	–
Wald	–	–	97.48***	164.58	98.25***	164.9***
Wald df	–	–	11	11	9	9
N uncensored	169	169	169	169	169	170
N censored	–	–	190	190	190	190
CN	12	117	–	–	–	–

The Table reports the estimates from OLS (Model 1) and Heckman (Models 2 and 3) regressions of the time to recovery, *Time*, of Eq. 3.2 against various explanatory variables. (See Table 3.1 for definitions of variables). Standard errors are in brackets. Note that industry and macro dummies were included in the regression but are excluded from the presentation to save space

*, ** and *** indicate significance at the 10, 5 and 1 % levels

Table 3.9 OLS and Heckman recovery level (*Lsdebtr*) regressions

	Model 1a (Ltime)	Model 1b (Admin)	Model 2a (Ltime)	Model 2b (Admin)
Intercept	1.779***	0.6434***	1.747***	0.7202***
	(0.4829)	(0.2078)	(0.4977)	(0.2497)
PLC	−0.3082***	−0.3380***	−0.3173**	−0.3130**
	(0.1181)	(0.1179)	(0.1248)	(0.1239)
Admin	–	0.2704**	–	0.2768**
		(0.1128)		(0.1101)
Lnum	−0.0877	−0.1714	−0.0900	−0.1659
	(0.1176)	(0.1156)	(0.1144)	(0.1126)
Lsdebt	0.3793***	0.3788***	0.3801***	0.3768***
	(0.0314)	(0.0309)	(0.0307)	(0.0302)
Ltime	0.1579**	–	−0.1574**	–
	(0.0776)		(0.0751)	
Lambda	–	–	0.0214	−0.1235
			(0.2319)	(0.2369)
R-Square	0.5059	0.4849	–	–
Adj R-Square	0.4749	0.4577	–	–
Root MSE	0.6833	0.6833	–	–
F	16.28***	16.57***	–	–
Wald	–	–	171.8***	173.5
Wald df	–	–	10	10
N uncensored	170	187	170	187
N censored	–	–	190	190
CN	29	9.6	–	–

The Table reports the estimates from OLS (Model 1) and Heckman (Models 2 and 3) regressions of the recovery level *Lsdebtr* of Eq. 7 against various explanatory variables. (See Table 3.1 for definitions of variables). Standard errors are in brackets. Note that industry and macro dummies were included in the regression but are excluded from the presentation to save space
*, ** and *** indicate significance at the 10, 5 and 1 % levels

Controlling for company size (*LTA*) and company debt prior to distress (*Lsdebt*), private equity-owned companies ($PLC = 0$) do indeed return greater amounts to creditors than private equity owned companies (H3c). Administration, however, delivers no better recovery outcomes than Receivership, as measured by the amount returned to creditors (H3d).[28]

However, *Ltime* turns out to be highly significant and carries a negative sign, implying that a longer time to recovery is associated with lower extracted total value and mirroring the recovery rate result of Table 3.6. As with the rate regressions this may reflect the costs of Administration or Receivership which are positively correlated with time in recovery. The size variable *LTA* is also highly significant and positive in sign in all three regressions, as predicted by H3a,

[28] *Admin* has a p value of 0.48 in this regression.

so that, as might be expected, larger companies have larger absolute debt recovery. This may be due to the high correlation between total assets (*TA)* and secured debt (*SD)*.[29]

More creditors (*Lnum*) has a positive but insignificant effect on the amount of debt recovered so once again the data rejects the Bolton-Scharfstein prediction.[30]

Summary and Conclusions

The study used a new, hand-collected dataset of 93 private equity backed buyouts and 96 PLCs that became financially distressed over the period 1995–2008 to investigate empirically whether private equity-owned companies (buyouts) in financial distress (Receivership/Administration) have better recovery rates for secured debt than their publicly-owned (PLC) counterparts and, if so, why. We found that, controlling for other factors, a PLC had a recovery rate about one half of that of a buyout. Contrary to expectation, recovery *rates* (as opposed to recovery *levels*) were not influenced by the recovery process, namely Administration versus Receivership. Administration, which aims at selling the company as a Going Concern and uses 'pre-pack' to speed up the process, should be a faster way to deal with distress, we find this to be consistent with the evidence. Surprisingly, however, Administration had no effect on debt recovery rates. A larger number of creditors, which in theory should reduce recovery rates, again, had no influence, nor did company size. Intriguingly, however, higher leverage consistently reduced the recovery rate for secured debt as (we hypothesise) more leveraged buyouts need recourse to lower quality assets for security. Finally, the time in recovery was influenced by the date of distress onset (later years have shorter durations) and the size of the firm (a concave relationship).

The policy implications of our findings are considerable.

Firstly, they demonstrate that Administration seems to have achieved one of the objectives set out for it but has failed to achieve the other. Objective one was to speed up the process of recovery and this occurred in the period under study, although it was difficult to be sure that this was due Administration itself (increasingly deployed as a debt recovery process in the period under study) or simply to a secular time trend; the two are highly correlated. We found that a notional switch of the recovery from Receivership to Administration would appear to reduce the *time* taken to recover debt substantively: by between 707 and 741 days. Administration, however, failed to achieve objective two, namely, to make the debt recovery

[29] The simple correlation coefficient between the two variables is 73%. A regression with the log of secured debt (*Lsdebt*) rather than ln total assets produced a positive coefficient with a p value of less than 1%.

[30] It might be thought that larger numbers of creditors are attracted to deals with plenty of good quality of collateral so that *Lnum* might be a function of *Lsdr*. However, we conducted a Hausman test on *Lnum* and could not reject the Null hypothesis of exogeneity.

process more efficient by selling the company as a going concern. On the contrary, the finding that Administration had no effect whatever on recovery rates suggests that the Administration process needs an overhaul.

Secondly, our finding that financial leverage does not merely to make a company more risky but also reduces the proportion of secured debt recovered if the company fails, suggests that it may be necessary for policymakers concerned with reducing the economy's vulnerability to financial shocks, to restrict significant increases in company leverage to cases where they are supported by adequate collateral or suitably higher interest rates imposed by lenders.

Thirdly, and most strikingly, the Jensen hypothesis, which asserts the superior governance of PE-backed firms over their PLC counterparts, seems to carry over to performance under distress. Government policymakers should therefore recognise that despite the fact that buyouts involve greater leverage, and that this may contribute to the chances of distress, creditors are nonetheless about twice as likely to get repaid in distressed buyout situations as with distressed publicly-owned companies.

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Chapter 4
Philanthropic Venture Capitalists' Post-Investment Involvement with Portfolio Social Enterprises: What Do They Actually Do?

Mariarosa Scarlata and Luisa Alemany

Introduction

In recent years, philanthropic venture capital (PhVC), also referred to as venture philanthropy, has attracted increased attention both from practitioners and academics for its focus on the maximization of social return through a long-term financial commitment and the provision of value-added activities.

In the United States PhVC investors like Acumen Fund in New York or the Roberts Enterprise Development Fund in the San Francisco Bay area have succeeded in backing social enterprises (SEs) that have, amongst others, dramatically improved the provision of health services in rural areas in developing countries or reduced the unemployment rate across offended people. In Europe, the European Venture Philanthropy Association (EVPA) was founded in 2004 with the aim to disseminate a new model of investment and capacity building for SEs aiming at going beyond the mere capital provision. From 2004 to 2010, EVPA has experienced a tremendous growth reflecting the increased interests on the new investment model proposed by PhVC investors; nowadays, EVPA brings together European PhVC investors as well as organizations and individuals interested in PhVC, amongst which traditional private equity and venture capital (VC) investors and business schools. The EVPA annual conference is attended by more than 350 participants from around the world with a diverse range of experiences, confirming its increasing importance both in the financial and the social sectors.

PhVC investors provide a blend of performance-based development finance and value-added services to SEs. SEs are here defined as organizations with a primary social aim that uses market-based approaches to the provision of services that are

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typically provided by the public sector, such as education and health care. SEs can undertake the legal form of a charity, a non-profit or a for-profit organization or, where the legal systems allows, a socially driven commercial business. To this respect, the precise organisational form chosen by the SE is subject to country-specific legal and cultural norms, leading to a non-unique definition of what a SE legally is. Arising from the non-unique legal form that SEs can undertake, PhVC operates across a spectrum of organisational types itself as well.

No matter what legal form is chosen either by the backed SE or by the PhVC investor, the value proposition of such a type of investment combines the provision of capital (grants, loans, quasi-equity or equity) with professional services in an effort to help recipient organizations to expand their social impact. This is a high-engagement partnership approach, analogous to the practices of VC investments in building the commercial value of start-up companies. However, while extensive research and analysis is present on the typology and terms of the value-added activities that VC investors provide to their investees, little is known about what types of activities are in place when it comes to PhVC backing.

The aim of this chapter is to offer a better understanding of the non-financial support given by PhVC to backed organizations in building it up while striving to maximize social impact. To do so, we present results from a study conducted in 2008 which included semi-structured interviews with leading American and European PhVC investors as well as an online survey addressed to the population of PhVC investors in the two regions.

The chapter is structured as follows. First, definitions of SEs and PhVC are provided to set the boundaries of our subsequent empirical analysis. Second, a review of post-investment activities implemented by traditional for-profit VC investor is presented to contrast then with those used in PhVC. Third, methodological issues are discussed and empirical results are reported. Last, conclusions and suggestions for further research are proposed.

Definitions

The understanding of the meaning of PhVC investments is still diverse and even disputed within scholars and practitioners. On the one hand, little research on PhVC is currently present in the academic community, with the bulk of studies on investments with social aims focusing on the economic results of socially responsible investments (Bello 2005; Mill 2006; Sethi 2005; Sparkes and Cowton 2004) and the activity of traditional grant-making foundations. Only two research studies were identified in peer-reviewed journals on PhVC, one concerning the selection phase (Miller and Wesley 2010) and the other dealing with deal structuring and covenants in PhVC investments (Scarlata and Alemany 2010). On the other hand, the lack of research on social investments reflects the pre-paradigmatic state of the social entrepreneurship literature which makes social entrepreneurship characterized by a reflexive-isomorphism (Nicholls 2010a, b). As a result, social

entrepreneurship scholars still strive to coin a proper definition of what a SE is, leaving room for multiple conceptualizations and interpretations of the term. Without a proper conceptualization of what a SE is, it turns out that a definition of investments in SE remains blurring and unclear. As such, before moving to reviewing and defining what PhVC actually is, it is important to briefly stress what a SE is in the context of this paper, drawing from the work done previously.

Most definitions of social entrepreneurship refer to an ability to leverage resources that address social problems. Social entrepreneurship has been defined in a context of social change (Dees 1998) and act both inside and outside institutional boundaries. Also, in their review of the social entrepreneurship concept, Dacin et al. (2010) suggest that definitions focus on four key factors: the characteristics of individual social entrepreneurs (Mair and Martí 2006), their operating sector (Zahra et al. 2009), the processes and resources used by social entrepreneurs (Mair and Martí 2006), and the primary mission and outcomes associated with the social entrepreneur (Reis 1999). As such, the legal form a SE might undertake is a sufficient or necessary condition to be taken into account while defining it: SEs can be non-profit organizations, for-profit organizations, charities or hybrid entities like the American low-profit liability companies. To this respect, of particular importance in the debate, thus, becomes the relationship between social and commercial entrepreneurial activity. This can only be grasped by considering the relative priority that a venture gives to social value development and economic value capture. Austin et al. (2006) unfolded the people-context-deal-opportunity diagram asserting that a key difference between social and commercial entrepreneurship lies in that a problem for a commercial entrepreneur is seen as an opportunity for the social entrepreneur and that the market act as a less powerful tool in the case of social entrepreneurship. Integrating different views of the characteristics of social entrepreneurship, we particularly define it as a business model of organizations fulfilling social needs by using pragmatic market-based approaches to business and income generation aiming at supporting the long-term organizational sustainability (Austin et al. 2006; Certo and Miller 2008; Chell et al. 2010; Di Domenico et al. 2010; Kistruck and Beamish 2010; Mair and Schoen 2005; Mair and Martí 2006; Meyskens et al. 2010; Peredo and McLean 2006; Seelos and Mair 2005a, b; Zahra et al. 2009).

When it comes to formulating a definition for PhVC, the same conceptual challenges mentioned while defining social entrepreneurship hold. Particularly, if the legal form of a SE is not a necessary or sufficient condition to establish what SE means, it is the case that it will not be able to help building a comprehensive definition of PhVC investment as well. Like SEs do, PhVC investors range within a continuum of legal forms, from non-profit organizations, like Acumen Fund in the United States and Impetus Trust in the United Kingdom, to foundations, like the Draper Richards Kaplan Foundation in the Bay area and the dob Foundation in Ireland, as well as for-profit companies, like Bridges Community Ventures in the United Kingdom and Oltre Venture in Italy. PhVC also spans between pure social return seeking investors to those blending social, environmental, and economic return in their value proposition (Scarlata 2011).

As explained in Scarlata (2011), the key aspect of PhVC investments lies in the combination of social and economic return considerations, with the social component being of superior importance than the economic one: economic return is strictly associated to economic sustainability objectives which are considered a means toward the maximization of the social impact of the backed organization. This is in line with Moss et al. (2011) analyses of social entrepreneurial activity In PhVC the long-term partnership with the backed SE is not limited to the mere capital provision but includes value-added services aiming at fostering the SE's capacity building, sustainability and survival. This reflects the investment techniques and strategies adopted by profit-maximizing VC investors which, if implemented as explained in the seminal article by Letts et al. (1997), would benefit the long-term survival and effectiveness of organizations pursuing a primary social aim. Exactly like VC investors, the PhVC firm manages a number of investments in its portfolio, typically one and in few cases more than four.

Post-Investment Activities: A Literature Review

In an effort to understand what value-added activities are provided by PhVC investors once a SE enters into their portfolio, the strategy followed here is similar to what done by Scarlata and Alemany (2010) and Scarlata (2011) Based on these studies, if PhVC implements the investment strategy of traditional VC investors, then we could have a better understanding of what PhVC does by looking at what VC investors do and thereafter empirically investigating if VC results hold for PhVC. As such, when trying to explain what post-investment activities are implemented by PhVC investors, Scarlata and Alemany (2010) find a substitution effect between agency risk, which typically describes monitoring in VC, and stewardship. Contrary to agency theory built on the existence of an interest divergence between investor and investee where each party seeks to maximize her own wealth, stewardship theory sees investors as sharing the same goals as the backed entrepreneurs. Investors act as stewards of the organizations they back and implement all the activities that are necessary to the organizational development with the social entrepreneur.

This aspect results to be different from traditional VC investments: formal monitoring through veto power increases when the VC investor perceives high level of business and agency risk (Barney et al. 1996; Sapienza et al. 2000). Additionally, Gompers (1995) demonstrates that staging the total amount of committed capital is one of the most important formal monitoring tools used by VCs to minimize the present value of agency costs: staging of capital infusions allows venture capitalists to gather information and monitor the progress of firms, maintaining the option to periodically abandon projects.

The perspective presented by VC scholars is that the VC investor and the entrepreneur have unequal power where a principal seeks control of an agent's behaviour (Cable and Shane 1997). Jensen and Meckling (1976) argue that, after selling a portion of the ownership in their companies, entrepreneurs bear only a

fraction of the direct costs of their actions. This may reduce managerial incentive to work toward long-term profit rather than short-term gain. VCs, thus, need to implement value added activities that although being privately costly, benefit the company, increasing its value. However, scholars have argued that agency theory can be applied if there is an interest divergence between actors when decision making authority is delegated (Eisenhardt 1989). As such, while agency theory can appear to be able in explaining the VCs-entrepreneur relationship in the pre-investment phase, after the VCs has decided to invest in the new venture, the VCs and entrepreneur's goals tend to become aligned as both focus on venture success. Thus, agency theory can be less capable of explaining the relationship between the two actors.

As a result, a bunch of VC scholars have tried to reframe VCs' value added by taking into account a procedural justice view (Sapienza and Korsgaard 1996), the prisoner-dilemma approach (Cable and Shane 1997), or stewardship theory (Arthurs and Busenitz 2003). Independently from the theoretical basis that might be chosen to explain why VCs add value, the common factor underlying them is that cooperation rather than competition between the VCs and the entrepreneur needs to be taken into account for the successful post-investment performance of the backed venture.

MacMillan et al. (1989) identify three specific levels in which VCs become cooperative with the entrepreneurs they back. VCs can be cooperative at the *strategic* level by serving as sounding board and by collaborating with the entrepreneur in the formulation of the venture's business strategy. Also, VCs collaborate on a *supportive* level, i.e., in monitoring financial and operating performance and, as Hellmann and Puri (2002), Kaplan and Strömberg (2001), Gorman and Sahlman (1989) as well as Timmons and Bygrave (1986) document, in playing a significant role for the professionalization of the firms, fostering the development of human resources in start-ups, both at the top and bottom levels of the organization. Last, VCs assist the backed companies on a *networking* level aiming at assisting them in finding alternative sources of funds (Gorman and Sahlman 1989; MacMillan et al. 1989). To this respect, Wright and Lockett (2003), Brander et al. (2002), Lerner (1994) and Bygrave (1987) show that syndication in VC is a response to the need of sharing or accessing information in the selection and management of investments: involving other VCs provides a second, and third, and fourth option on the investment opportunity, which limits adverse selection problems. Also, Sorenson and Stuart (2001) argue that syndication is a powerful way to extend the geographical and industry investment scope of VC firms, creating a dense inter-firm network which allows for information dissemination across geographic and industry boundaries, thus decreasing adverse selection issues.

MacMillan et al. (1989) results are consistent with Gorman and Sahlman (1989) and Sapienza and Timmons (1989) and supported by a later study by Rosenstein et al. (1993) for what concerns role identification, while they diverge in terms of role importance. However, MacMillan et al. (1989) is based on the VCs' own assessment of the extent of their involvement, whereas both Rosenstein et al. (1993) and Sapienza and Timmons (1989) base their analysis on a dyadic study of VCs-entrepreneurs perception of importance.

As explained by Scarlata and Alemany (2010), the stewardship behaviour of PhVC investors pushes them in following the progresses of the firms they back, in an effort to implement corrective activities when needed, and to provide the social entrepreneur the tools for promptly identifying any signal of organizational problems. The PhVC investor provides a series of monitoring services that are initiated by trust: PhVC sit on the board of directors of the social enterprises but tend not to retain any formal control rights, in the belief that organizational development must be at the discretion of the social entrepreneur, who is considered the key to the maximization of the social return on the PhVC backed investments. PhVC investors act as advisors and prefer to exert supervision at an informal level and interact more with the social entrepreneur. Also, in the case formal control rights are retained, PhVC investor place more importance on informal ones as a tool for the effective development of the social organization (Scarlata and Alemany 2010)

Empirically, by surveying a sample of European PhVC investors, John (2007) finds out that PhVCs stewards SEs offering them a wide range of value-added services through a variety of delivery channels. Strategic consulting constitutes the most popular service provided to SEs, followed by support in strengthening board governance and financial management/accounting. John (2007) also reveals that PhVCs actively deliver their support through their own staff or board members, but given the diversity of skills required and the relatively small staff numbers found within PhVC funds, other channels for delivery are sought. Partnerships with professional service firms that offer pro-bono services to PhVCs are an attractive, long-term solution. John (2007) shows that PhVCs offer SEs access to their network, but he does not mention syndication practices. However, in a previous paper John (2006) identifies co-financing as important characteristics of PhVC funds.

Empirical Analysis of Value-Added in Philanthropic Venture Capital Investments

In order to analyse what value-added activities are implemented by PhVC investors, both in Europe and in the United States, we followed the methodology used in Scarlata and Alemany (2010). We first conducted a series of semi-structured interviews with leading investors in both regions and thereafter designed a web-based survey addressed to the entire population of PhVC investors. As explained in Scarlata and Alemany (2010), overall 74 investors were identified, as of 2008, by consulting different sources to minimize under-coverage error; 38 are European and 36 are American. A Response rate of 54% was obtained, with 40 responses over 74 surveyed PhVC investors.

Evidence from the online survey suggests that the most important cooperative activity results to be the provision of strategic advice to backed SEs (cfr. Table 4.1). Independently from taking a seat on the board of directors, PhVC investors try to maximize the social return on their investments helping the social entrepreneur and

Table 4.1 Rating of value-added post-investment activities

Activity	Variable	% of very important	Mean	Median	SD
Strategic		*50.23*	*6.09*	*6.67*	*1.11*
	Strategic advice	69.2	6.36	7.00	1.16
	Board seat	52.6	6.16	7.00	1.08
	Governance advice	28.9	5.76	6.00	1.10
Networking		*30.6*	*4.56*	*4.67*	*1.32*
	Access to future investors	57.9	6.29	7.00	0.98
	Syndication	28.9	5.66	6.00	1.28
	Other	5.0	1.74	1.00	1.69
Supportive		*19.00*	*5.04*	*5.00*	*1.38*
	Financial and accounting management	25.6	5.79	6.00	0.98
	Human resource advice	23.1	5.56	6.00	1.19
	Marketing and communication	28.2	5.36	5.00	1.39
	Legal services	12.8	4.41	4.00	1.76
	IT consultation	5.3	4.08	4.00	1.57

1–7 scale, 1 = "*Never used*", 4 = "*Sometimes used*", 7 = "*Always used*"
Source: Scarlata, Alemany, and Zacharakis (2012); Scarlata (2011)

her organization to develop strategic plans for growth. In PhVC investments, provision of advise and mentoring become of key importance and the investor takes action in such a way that the organization has the tools to expand its activity and its reach. Results also indicate that PhVCs tend to behave as prescribed by MacMillan et al. (1989) in the case of traditional VC investments, with strategic roles followed by networking roles and by supportive roles respectively.

Concerning the networking dimension, syndication practices, i.e., the provision of a certain amount of capital by different investors, appear to be very important to a marginal percentage of PhVCs, contradicting John (2007) findings. This might be related to the relatively small scale of investments that characterize the PhVC field (Scarlata 2011) which can be easily provided by one unique investor. On the contrary, if focusing on future perspectives, the PhVCs support as a way for backed SEs to access their social network of future funders seems to be of primary importance; this receives a high average rating attributed to it, a high percentage of PhVCs rating it as a very important post-investment activity, and the lowest standard deviation (SD).

Among supportive roles, advise on financial management and accounting is the most important activity; this confirms that SEs backed by PhVC investor need to place emphasis on a good understanding of financial measures to better grasp where the organization is succeeding and the areas it needs to focus more to ensure long-term financial sustainability. Also, value-added at human resource management induces PhVC investors in recruiting qualified staff thanks to whom focusing on the social value creation process.

PhVCs use their social network not only to enable backed organizations to survive in the long-term through subsequent rounds of financing or access to banks, but also to provide non-financial services benefiting from the activity of the PhVC investor's network of strategic and/or pro-bono partners. An example is

Table 4.2 Internal provision of value-added post-investment activities

Dimension	Variable	Only internally (%)	Only externally (%)	Both (%)
Strategic				
	Strategic advice	89.5	7.9	2.6
	Governance advice	81.3	15.6	3.1
Networking				
	Access to future investors	94.3	2.9	2.9
	Syndication	78.8	18.2	3.0
Supportive				
	Financial and accounting management	60.0	37.1	2.9
	Human resource advice	58.3	38.9	2.8
	Marketing and communication	43.8	56.3	–
	IT consultation	14.3	56.3	–
	Legal services	6.7	93.3	–

Source: Scarlata, Alemany, and Zacharakis (2012), Scarlata (2011)

CAN Breakthrough, which was established in 2004 in the United Kingdom and "*combines the passion and expertise of its founders, CAN and Permira. CAN and Permira share a mission – to support great businesses – and seek to build on CAN's 10-year track record of supporting social enterprises with Permira's 20-year record of supporting business growth and transformation* (CAN 2011)."

Results presented in Table 4.2 show that both strategic and networking roles are mainly provided internally by PhVCs. More particularly, new partners for syndication purposes as well as new potential investors are sought by the PhVCs in more than 94 and 78% of the cases, supporting the idea that PhVCs' main activity consists of allowing backed SEs in benefiting from the network of contacts.

Marketing and communication, IT consultation, and particularly legal services are mainly provided as outsourced services, indicating the need for the PhVCs to develop a network with external specialized service providers.

If comparing value-added services in PhVC with those in place in VC investments, results presented here indicate that PhVC investors tend to behave as prescribed by MacMillan et al. (1989), with strategic services followed, respectively, by networking and last by supportive roles.

Conclusions

This chapter has presented the value-added services that PhVC investors provide to backed SEs with the objective of maximizing their social impact. Once the investment takes place, PhVC investors implement both activities that monitor the progresses of the firms they back as well as consulting activities focused on different aspects of the organizational development. By surveying the population of active PhVC investors in Europe and in the United States, we have identified the

provision of strategic advice as the most important value-added service in place after the investment takes place. Also, the network component of PhVC investments is of key importance in the investment value proposition both in terms of connecting the SEs with partner firms that could help the organization from a strategic point of view as well as potential new investors that could finance it on future stages of development.

Future research could address the effectiveness of value-added services in creating and maximizing social return while simultaneously enabling the SE to become economically sustainable. Also, it could be further addressed the relationship between the PhVC investor's social capital and the ability of the SE to survive in the long-term.

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Chapter 5
Law and Corruption in Venture Capital and Private Equity

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Introduction

Since the 2007 financial crisis, there has been significant and growing concern in the venture capital and private equity industries worldwide of the role of corruption in influencing venture capital and private equity fund manager activities. For example, the high profile law firm S.J. Berwin noted in their Private Equity Comment[1] (March 2010) that regulators are paying significantly more attention to venture capital fund manager corruption, particularly with respect to bribery, and environmental, social and governance issues. As they commented,"[i]t makes good business sense, therefore, for [fund] managers to understand the legal issues in every country in which the fund does business, and to take active steps to ensure that responsible business practices are adopted throughout the portfolio." Indeed, a lack of understanding by the private equity industry on differences in legal practices, corruption and cultural norms around bribery could result in longer term (negative) effects for the industry. S.J. Berwin expressed particular concern with international venture capital and private equity transactions where exposure to firms could result in "corrupt linkages" to local, regional and national governments.

[1] http://www.sjberwin.com/latestpublicationdetails.aspx?title=privateequitycomment; On the political and economic debate see, for example, discussion of the regulation after the mid-2007 financial crisis in *The Economist*, 19 November 2009*, "Europe's War on Hedge Funds"*.

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Media coverage and public debate over venture capital and private equity investment activity in the last few years has focused on the level of compensation received by fund managers, and their behavior in generating returns for their investors. The discussion about corruption is a recent manifestation of a wider debate about whether private equity investing adheres to ethical business practices in improving the economic welfare of companies and the economy, or is a redistribution of existing resources from certain sections of society (workers, customers) to private equity managers and their investors. In this context, studies on the relationship between legal systems, corruption and venture capital and private equity investment activity are instructive.

This chapter summarizes recent research on the role of law, culture and corruption on venture capital and private equity fund structures, governance and performance. We focus on the role of law and corruption on two aspects of venture capital and private equity investment: the structure of manager compensation; and performance outcomes.

Manager compensation contracts regulate the payment of fees for fund managers of venture capital and private equity. The differences in structure of these contracts in various countries around the world provide a useful way to examine the role of law, corruption and culture in setting fund manager fees. Venture capital and private equity funds are typically set up as limited partnerships whereby the institutional investors are the limited partners and the fund manager is the general partner (Cumming et al. 2005; Cumming and Johan 2007). Thus, legal system and cultural norms impact on negotiated outcomes at the start of the contractual relationship, and determine acceptable behaviour during the contract (or limited partnership) life. We compare and contrast the role of fund manager characteristics and market conditions to the legal and institutional setting in which a fund is based to understand the determinants of fund manager fees. We expect market conditions and fund manager characteristics to be important in setting fees, as these factors would be important in any labor market context. In respect of legal and institutional differences, we compare and contrast the role of legal conditions versus cultural conditions in a country to ascertain the importance of country-specific factors on fees. We expect countries with superior legal settings to affect fees in a way that better aligns the interests of fund managers with their investors.

Performance outcomes across countries can also illuminate how legal system and corruption impact private equity investment activity. We review quantitative analysis of the relationship between legal protection, corruption and private equity returns, work which is related to a growing body of work indicating that legal protections are important in explaining the size, structure and success of private equity markets (Lerner and Schoar 2005; Cumming et al. 2006; Cressy et al. 2007; Cao et al. 2010; Johan and Najar 2011). Our study is the first to consider the interplay between corruption across markets and the financial returns to private equity investments. The new look at the role of law and corruption considered here is not trivial or obvious. On one hand, one may conjecture that countries with higher levels of corruption have lower returns to private equity investments due to the economic inefficiencies inherent with corrupt economies. On the other hand,

private equity returns may be higher in more corrupt countries as activist private equity funds that bring about organizational change in their investees are able to make companies more efficient and mitigate the economic costs of corruption, thereby facilitating higher returns.

Our findings are on both compensation and performance outcomes are related to a growing literature on law and finance associated with financial intermediation. Prior work has shown that manager compensation depends on legal conditions (Cumming and Johan 2009a, b; for related work, see Keuschnigg 2004; Keuschnigg and Nielsen 2001, 2003, 2004) albeit that one is yet to understand fully what specifically matters in terms of specific attributes of a legal system that affected fees. Contemporaneous studies have shown legal systems affect venture capital financial contracts with entrepreneurs and investment performance (Lerner and Schoar 2005; Cumming et al. 2006; Hege et al. 2009; Cumming and Johan 2009a, b; Cumming and Walz 2010), as do cultural factors across countries (Hazarika et al. 2009). The evidence summarized in this chapter is novel and a new contribution to the literature as it examines for the first time how specific legal and cultural differences across countries matter for compensation and investment returns.

Our findings on compensation are broadly consistent with the view that legal protection enables superior compensation arrangements in venture capital limited partnerships where the interests of general partners and limited partners is aligned. More corrupt countries, by contrast, have less efficient compensation structures. In particular, our sample of 123 venture capital and private equity funds around the world shows that in countries with better legal conditions, fixed fees are lower, carried interest fees are higher, clawbacks are less likely, and share distributions are more likely. These findings support the idea that legal conditions help to align the interests of managers and investors. We examine specific components of legal indices to ascertain what specific legal conditions matter across countries, and find a significant effect of the rule of law and the efficiency of the judiciary on fees. Further, the data indicate that corruption levels play a pronounced role in shaping fund manager fee contracts across countries. Countries with lower levels of corruption have lower fixed fees and higher performance fees, and are less likely to have clawbacks and cash-only distributions. Also, we show that Hofstede's measure of power distance is negatively related to fixed fees and the use of cash-only distributions, but positively related to performance fees and clawbacks. Overall, it is noteworthy that the data strongly indicate that corruption, culture and legal settings play a more significant role in determining fees than fund manager characteristics and/or market conditions.

The evidence on performance (from investments returns across 20 countries in Asia) indicate that legal protections are an important determinant of private equity returns, but also that private equity managers are able to mitigate the potential for corruption. The quality of legal system (including legal protections) is positively related to returns. Inefficient legal protections negatively impact transaction structures and economic certainty when exiting investments, thereby negatively impacting returns. The data show that private equity managers, irrespective of the quality of legal system they are operating within, can mitigate the potential impact

of corruption. The data further show that private equity returns are higher in countries with higher levels of corruption, controlling for legal systems. This finding is consistent with the view that private equity managers bring about organizational change to alleviate the costs of corruption, thereby generating higher returns. Both findings are robust to inclusion of controls covering economic conditions, Hofstede cultural factors, and transaction specific characteristics. As well, the findings are robust to econometric sample selection methods for unexited investments.

The chapter is organised as follows. In the next section we provide two groups of hypotheses on the relation between legal conditions and managerial compensation, and between law, culture and corruption, and investment returns. We then describe methodology, the data sets, and empirical findings. We conclude with a discussion of venture capital and private equity markets around the world, and expected future developments in relation to law, corruption and culture.

Hypotheses

The Role of Corruption, Culture and Law on Fund Manager Compensation

Venture capital and private equity fund managers are financial intermediaries between institutional investors and entrepreneurial firms. Venture capital and private equity funds are typically set up as limited partnerships whereby the institutional investors are the limited partners and the fund manager is the general partner (Cumming et al. 2005; Cumming and Johan 2007). Institutional investors include pension funds (Jeng and Wells 2000; Mayer et al. 2005) (which are most common across countries), insurance companies, banks and endowments. Venture capital and private equity funds typically have a finite life of 10–13 years. This life-span enables fund managers time to select appropriate investees and manage such investments to fruition. A typical investment in an entrepreneurial firm can take from 2 to 7 years from first investment to the exit date. Entrepreneurial firms typically lack income, revenue and/or cash flows to pay interest on debt and dividends on equity; hence, returns to institutional investors are in the form of capital gains upon exit (such as an IPO or acquisition for successful entrepreneurial firms, or a write-off for unsuccessful firms).

Venture capital and private equity fund managers are compensated with a two-part fee. The first part is a fixed fee which is commonly 1–3% of the fund's assets in the U.S. (Gompers and Lerner 1999), and paid annually. This enables an appropriate annual salary for the fund managers and enables the fund managers to meet overhead costs over the life-span of the fund, particularly in times prior to the realization of investments in the investee firms. The second component is the performance fee, or carried interest, which is commonly 20% of the profits earned by successful fund investments (Gompers and Lerner 1999). Fixed fees are higher

and performance fees are lower among younger funds, which is consistent with a learning model whereby risk averse fund managers are more likely to prefer more certain compensation when their abilities are unknown to themselves (Gompers and Lerner 1999). Fund managers may face clawbacks of their fees, which means that institutional investors in funds can retract performance fees paid out in the early years of the fund in the event of poor performance in latter years. Institutional investors into funds can state in limited partnership contracts that payment terms come in the form of cash or share distributions.

Institutional investors do not have the time and specialized skill set to carry out due diligence in screening potential private entrepreneurial firms in which to invest; institutional investors also do not have the time and skills to efficiently monitor and add value to the investee entrepreneurial firms. The pronounced risks, information asymmetries and agency problems associated with investments in small, illiquid, and high-tech entrepreneurial firms is a primary explanation for the existence of private investment funds with specialized skill sets to mitigate such problems (Sahlman 1990; Gompers and Lerner 1999; Cressy 2002; Cressy and Toivanen 2001; Cressy et al. 2007; Cressy and Farag 2011).

We expect countries with less corruption and superior legal settings to affect managerial compensation in a way that better aligns the interests of fund managers with their investors. Where there is less corruption, there is less uncertainty and risk of misappropriation of financial resources. Fund managers who believe that their efforts and higher risk taking will pay off will therefore prefer lower fixed fees and higher performance fees in countries with less corruption. Moreover, institutional investors are less likely to demand clawbacks rights on fees in countries with less corruption, and less likely to demand cash-only distributions.

Corruption is distinct from legal conditions in a country, and therefore we consider legal settings alongside measures of corruption. Legal conditions can be measured in a variety of ways, such as the many indices developed by La Porta et al. (1998) and others. The traditional La Porta et al. (1998) indices include efficiency of judicial system, rule of law, risk of expropriation, risk of contract repudiation, and shareholder rights. A weighted average of these indices was adopted by Berkowitz et al. (2003), and referred to as the Legality Index. It is natural to expect these indices to matter for cross-country determinants in fees, not because these indices were developed for limited partnerships, but rather because they affect the uncertainty faced by fund managers in carrying out their investments in those countries and as such their expected incomes. Consistent with Acemoglu and Zilibotti (1999), we conjecture that fund managers operating in legal conditions of poor quality will be more inclined to accept higher fixed fees and lower performance fees. At a general level, information asymmetries are more pronounced in countries with poor legal conditions, and therefore less developed countries are less likely to employ incentive contracts for managers and entrepreneurs (Acemoglu and Zilibotti 1999). Specifically in the venture capital context, prior empirical work is consistent with the view that countries with weaker legal conditions (based on the La Porta et al. 1998, indices) face more uncertain exit markets whereby it is more difficult to obtain a capital gain and generate fund returns (Lerner and Schoar 2005; Cumming et al. 2005). As such, we expect risk

averse fund managers to prefer higher fixed fees in exchange for a lower performance fees in order to garner a more certain income stream in countries with weaker legal conditions.

Similarly, as compensation contracts are the outcome of bargaining between fund managers and their institutional investors, and bargaining depends on culture in different countries, we may expect cultural measures developed by Hofstede to matter in setting fees. Perhaps most notably, Power Distance, Individualism and Masculinity influence the degree of inequality amongst contracting parties, and hence are likely to be associated with higher fixed fees and lower performance fees. The intuition, perhaps best illustrated by Power Distance, is as follows. Power Distance reflects the degree to which those in control or with bargaining power are able to dictate terms and those not in control are happy to accept terms. Typically bargaining power is greater among institutional investors than fund managers since raising a venture capital fund is challenging, particularly among first time fund managers in less developed countries where Power Distance is more pronounced. Institutional investors might be more inclined to prefer lower performance fees with higher fixed fees, not higher performance fees with lower fixed fees, if they do not want fund managers to be able to earn extremely large incomes from the contractual arrangement and thereby have a shift in the Power Distance between the parties. Similarly, Uncertainty Avoidance is also more likely to be associated with higher fixed fees and lower performance fees if both institutional investors and fund managers seek more predictable payoffs in terms of fees.

H1: Fixed management fee percentages will be in higher in countries with more corruption, weaker legal conditions, and in countries with more Power Distance, Individualism, Masculinity, and Uncertainty Avoidance.

H2: Carried interest performance fee percentages will be higher in countries with less corruption, stronger legal conditions, and in countries with less Power Distance, Individualism, Masculinity, and Uncertainty Avoidance.

While fund managers benefit from higher fixed fees and lower performance fees in countries with poor legal conditions, institutional investors nevertheless face a particularly pronounced risk of lower profits among funds in countries with poor laws. Institutional investors can lower the downside costs of low returns with the mechanism of a "clawback". A clawback means institutional investors can retract performance fees paid out in the early years of the fund to the fund manager in the event of poor performance in its latter years, thereby reducing the overall compensation paid to fund managers in the event of poor performance. A fund usually distributes cash and other proceeds to the fund manager and other investors upon each liquidating event. The problem of excess distributions may occur when earlier liquidations are profitable, and later ones are not. This will be further exacerbated if the fund manager accelerates the sale of profitable investments and holds off the liquidation of bad investments. In countries with more pronounced corruption, this acceleration of a sale of an investee firm is commonly carried out to pre-empt any adverse consequence to the investment situation in a country as a result of changes in political or ruling regimes. What may have been a friendly investment

environment when the initial investments were made may be hostile by the time divestments have to be made over the life of the fund The clawback allows the investors to recover excess distributions upon liquidation of the fund. We therefore expect clawbacks to be more frequently employed in countries with poorer legal conditions and in countries with more pronounced corruption. We likewise expect clawbacks to be more common in countries with greater Power Distance as it directly reflects bargaining power amongst fund managers and institutional investors.

H3: Clawbacks of fund manager fees in the event of poor performance are more common in countries with greater corruption, a weaker Legality Index and greater Power Distance.

We further expect legal conditions to influence the mode of distribution of fund profits to institutional investors in terms of cash versus share distributions. Poor legal conditions increase the financial risk of share positions in entrepreneurial firms; therefore, all else being equal, the greater the uncertainty created by a lower quality legal environment, the greater the probability of a cash-only distribution policy in the setup of a fund. In countries with more pronounced corruption, institutional investors prefer to limit their exposure to vulnerable entrepreneurial firms up to the life of the fund itself and will not want to hold on to shares of the investee firm on their own account.

H4: The weaker the legal environment, and the greater the corruption, the greater the probability of covenants mandating cash-only distributions from fund managers to institutional investors.

Finally, in an international context venture capital and private equity funds can be set up offshore, and doing so typically has significant tax advantages. In the U.S., share distributions are common as the institutional investor can decide when it is the best time to realize capital gains (There are other reasons for share distributions, see e.g., Gompers and Lerner 1999). Since offshore funds are by their very nature tax lowering entities, the timing of realization of capital gains is a less pronounced concern among institutional investors of offshore funds, and therefore the need for share distributions is less pronounced for offshore funds. Furthermore, aside from concerns relating to taxation, offshore funds commonly comprise of various types of institutional investors, such as pension funds, insurance companies, banks, and endowments from a diverse set of countries. Institutional investors from a diverse set of countries typically face non-harmonized legal impediments to acquiring and selling shares in entrepreneurial firms transferred to them from the fund manager. Overall, therefore, offshore funds are expected to mandate cash-only distributions.

H5: Offshore funds are more likely to mandate cash-only distributions from fund managers to institutional investors.

We also control for a variety of factors pertaining to economic conditions, institutional investor and fund manager characteristics, including education and experience as well as fund factors such as stage and industry focus, among other factors, may quite validly influence fund manager compensation. We briefly discuss each of these factors below.

First, in regards to economic conditions, fund managers are more likely to be compensated better when the demand for fund managers exceeds supply. For instance, in the boom periods a phenomenon of "money chasing deals" (Gompers and Lerner 1999) typically results, whereby fund managers are short in supply relative to the institutional investors wanting to contribute to the asset class (Kanniainen and Keuschnigg 2004). As such, fund managers are more likely to have higher fixed fees and carried interest percentages, and less likely to face clawbacks, in times of boom economic conditions (i.e., in countries with stronger economic environments and at times of better stock market performance).

Second, apart from overall legal quality conditions, specific legal environments pertaining to legal origin might influence fee structures (La Porta et al. 1997, 1998; Cumming and Johan 2006). Cultural differences across regions may also be closely to legal origin variables.

Third, the level of overall compensation paid out to fund managers is dependent upon tax regimes. Performance fees paid to general partner fund managers (carried interest) may be taxed at the capital gains tax rate or deemed as business income and taxed at the income tax rate (unlike venture capital firms set up as corporations) (Fleishcher 2008; see also Gilson and Schizer 2003, on tax in venture capital finance in the U.S.). As such, we control for the difference between income tax and capital gains tax rates for limited partnership funds.

Fourth, fund managers who are more educated are more likely to receive higher fixed and performance fees, and less likely to face clawbacks. Fund managers with more relevant work experience are more likely to have lower fixed fees but higher carried interest percentages (consistent with the signalling model as discussed in Gompers and Lerner 1999).

Fifth, fund characteristics such as fund size, stage focus and industry focus can affect fees (Gompers and Lerner 1999a). Larger funds are more likely to have smaller fixed fees simply because the fixed compensation would be excessive. Funds focused on investing in earlier stages of development and in more high-tech industries are more likely to have higher performance fees to incentivise the fund managers and align their interests with that of the institutional investors (since agency problems and information asymmetries are more pronounced among funds focused in early stage and high-tech investments).

Sixth, the type of institutional investor (bank, government, pension fund, etc.) and their respective risk tolerance levels could influence the pay structure of the fund managers in terms of fixed versus managerial fees (for reasons analogous to research in Mayer et al. 2005). As well, the identity of the institutional investors could of course affect the probability of use of clawbacks and the mode of distributions in terms of cash versus shares.

The Role of Law and Corruption in Investment Returns

There is a developed body of literature which examines how legal institutions impact economic growth and equity returns. The literature categorizes countries

by differences in law quality, such as the efficiency of the judiciary and adherence to the rule of law, enforcement of contracts and legal structures that matter for private equity transactions. Under the "law matters" view (La Porta et al. 1998, 2002), countries with better legal environments enable private equity funds to more efficiently provide advice and effect organizational change to bring about higher returns in their investee firms. This is the basis of hypothesis six.

The law and finance factors (based on La Porta *et al*. 1997, 1998) include the efficiency of the judicial system, the rule of law, risk of expropriation, risk of contract repudiation, and shareholder rights. These various rights deal with the substantive content of laws pertaining to investing and the likelihood and quality of their enforcement. Because the index values for different substantive areas of law are highly collinear, we focus on a weighted average Legality index in our regressions. We expect that Legality matters for private equity returns for a number of reasons. Higher legality implies stronger investor protection, and therefore a more active stock market which affords an exit outcome for venture capital deals. Furthermore, better legal conditions facilitate better enforcement of private equity contracts, and help to alleviate information asymmetry between transacting parties, both at the time of initial investment and at the time of exit (consistent with La Porta *et al*. 1997, 1998). Private equity funds seek to maximize returns, and new owner(s) will pay more when information asymmetries are lowest, which is in countries with better legal conditions. IPOs are more likely in countries with better legal conditions, and buybacks are more likely in countries with worse legal conditions (Cumming et al. 2006). Therefore, all else being equal, higher returns are expected in countries with better legal conditions.

H6: Venture capital and private equity returns are higher in countries with superior law quality.

While legal systems may matter, it is also possible that private equity managers can mitigate the potential costs of inefficient legal systems (and thus the likelihood of expropriation of rents) by actively changing the governance and incentive structures inside private companies. This hypothesis is based on the argument that private equity funds are active investors which seek to generate absolute returns in excess of those available through public equity investments. An important part of the private equity investment process is initiating, where possible, organizational change in their investee firms with a view to increasing profitability, enterprise value, and equity returns (Gompers and Lerner 1999; Cumming and Johan 2009a, b). As a result, active private equity fund managers that bring about organizational change in their investees can alleviate the expected costs of corruption in a country and thereby generate higher returns than that which would otherwise would be expected (Cressy, et al. 2007; Cumming 2007; Nikoskelainen and Wright. 2007). By contrast, non-active private equity funds that do not bring about organizational change to alleviate the expected costs of corruption would likely experience lower returns in countries with higher levels of corruption.

H7: Venture capital and private equity returns are higher in countries with higher levels of corruption.

In effect, the positive association between corruption and private equity returns is a test of the extent to which private equity funds are able to mitigate the expected costs of corruption through changing the organizational and governance arrangement inside the firm.[2]

A number of other transaction specific factors can influence private equity returns. First, it is natural to expect that the actual changes brought about in the organization post investment, such as further acquisitions or divestitures, will influence returns. Second, the ownership held by the private equity fund, and relatedly, the extent of leverage in the transaction, might influence returns (Nikoskelainen and Wright 2007). Third, whether or not the private equity fund syndicates the deal with other private equity funds could affect returns through either greater value added provided by the syndicate and/or improved deal selection. Fourth, whether or not the management team is replaced by the private equity fund manager could influence returns. Each of these and other deal specific items might be endogenous to expected returns as, for example, the decision to syndicate in the first place depends on the expected profits from the investment. In our empirical tests we consider these possibilities and robustness to including or excluding these variables.

In assessing private equity returns, it is also important to consider both exited and unexited investments. As discussed in the previous section, private equity funds are limited partnerships that last for 10–13 years, and investments often take anywhere from 2 to 7 years to come to fruition (via a sale of the company through an IPO, acquisition by a competitor, management buyback or write-off). Private equity funds might sell their better investments earlier on in their life-cycle in order to fund raise for their follow-on funds (Cumming and Walz 2010). As such, in empirically assessing realized private returns, we control for the non-random decision to exit an investment in the first place.

Empirical Evidence

Empirical Tests of H1–H5

The data used to test H1–H5 come mainly from a survey conducted over the period December 2009 and March 2010. The aim of our study is therefore to present a new set of international data corresponding to other countries in the world. The data on fund structure, their size and their investments are mostly available on the financial databases. Otherwise, details of the fees structure of general partners, the terms of

[2] We acknowledge that an alternative interpretation of a positive association between corruption and private equity returns could be that private equity fund managers are themselves "corrupt" (i.e. expropriate rents) and able to take advantage of investee firms in more corrupt economies. The empirical tests in Cumming et al. (2010) include a number of transaction specific variables that account for this view.

recoveries and the profit distribution policy used by the fund (cash against shares) are not publicly revealed by all funds in some countries. On the other hand, most of the contracts used to govern the relationship between managers and investors in the fund are generally written in different languages, so it was necessary to obtain the data by use of surveys and interviews that allow collecting pertinent information. Funds publications on their websites were however used to verify and enhance data obtained by survey and interviews.

The potential respondents were identified from various sources such as: (1) The Kompass database for the case of French fund managers; (2) The database Thomson One banker to collect the email addresses of fund management teams internationally; and (3) The websites of investment funds. One survey form each was sent to approximately 2,500 investment funds around the world with the use of software for online survey (WysuForms).

One limitation to obtaining data through a survey is the possibility of sample selection bias. While we acknowledge that this is a possibility, we believe from a detailed analysis of the responses received and the data obtained from the responses that this concern does not arise in this exercise. First, survey data were gathered for a final sample of 123 funds in 23 countries. We are aware that the work carried out by Gompers and Lerner (1999) utilized a sample of 140 contracts used to establish funds, obtained from institutional investors (two fund of funds and one endowment). Litvak (2004, 2008) has data from 38 funds in the US, and Metrick and Yasuda (2010) have data from 203 funds in the US. We believe however that by obtaining data from funds situated both in and outside the US, and by having access to data regarding contracts entered into by 123 different fund managers in 23 countries, response bias is mitigated as much as possible. Similarly, Lerner and Schoar's (2005) study of the relation between legality and venture capital contracts with entrepreneurs is based on data from 28 fund managers. Limitations in our sample size from each country from which we derived data, as well as the limited information about venture capital and private equity funds around the world, however, makes reliable statistical comparisons of our sample relative to the population of funds intractable. Our sample of respondent funds includes 21 funds from France, 14 funds from the U.S., 12 funds from the U.K., 11 funds from the Netherlands and, 8 funds from Malaysia, 6 funds from Germany, 5 funds each from Australia, Finland and South Africa, 4 funds each from Brazil and the Netherlands Antilles, 3 funds each from the Philippines, Belgium, Canada, India, Italy, Spain and Switzerland, 2 funds each from the Cayman Islands and Mexico, and 1 fund each from the New Zealand, Singapore and Luxembourg. The number of respondents, and representation of funds from both developed and emerging venture capital and private equity markets, makes a response bias even less likely.

Second, a broad array of respondents replied to the survey. For example, the data show the median respondent fund size of US$70.9 million and the average being US$144.7 million (minimum US$263 thousand; maximum US$930 million), indicating that respondents were of a variety of fund sizes and of typical size for a sample of non-U.S. countries. The possibility of sample selection bias is further reduced by the presence of both onshore and offshore funds within the final sample, the presence of funds organized not only in both common law and civil law

jurisdictions, but also within jurisdictions in legal systems with English, French, Scandinavian and German based legal systems, and also the presence of funds situated in countries where English is not the primary language. Finally, a sufficient number of variables regarding both fund and fund manager organization and the relevant features of the fund asset size, fund vintage, investor composition, investment strategy, industry composition of fund investments and governance structures, more specifically the specific covenants provided in the terms within the agreements that govern the relationship between fund investors and fund manager, were collected to minimize the risk of response bias. We also sought information on the method of calculating management fees, the treatment of other fees such as consulting and monitoring fees, and profit sharing and distribution terms. We unfortunately realize that we cannot absolutely rule out the possibility of a response bias as the data we have collected here is unique.

In the data the average performance fee is 18.01%, and the median performance fee is 20%. The average fixed fee is 2.32%, and the median fixed fee is 2.5%. Thirty four of the 123 funds imposed clawbacks against fund managers in the event of poor performance; the degree of these clawbacks was most often 20% of the fund manager fees. Eighty seven of the 123 funds mandated cash-only distributions.

Consistent with H1 and H2, the data show a strong negative correlation between less corruption (higher Corruption Perception Index) and fixed fees (−0.53) and higher performance fees (0.47). Also, there is a strong negative correlation (−0.62) between the Legality index and fixed fees (−0.62) and a strong positive correlation between performance fees and the Legality index (0.51). Consistent with H3, clawbacks are associated with weaker legal conditions (−0.27) and greater power distance (0.32). The data also support H4 and H5 as covenants mandating cash-only distributions are more likely in weaker legal conditions (−0.16), and for offshore funds (0.19). Finally, we found that many variables were correlated, and as such the multivariate analyses completed by Johan and Najar (2010) considers collinearity by presenting various specifications.

Johan and Najar (2011) analyse four different dependent variables in their empirical tests: fixed fees, carried interest performance fees, clawbacks, and cash-only distributions. Also, they provide a number of tests to show robustness with alternative model specifications.

Johan and Najar's (2011) results for fixed fees and performance fees show that legal conditions significantly (at the 1% level) negatively influence fixed fees and positively influence performance fees, respectively, consistent with H1 and H2. The economic significance is such that the model predicts that a move from India (Legality index is 12) to Canada (Legality Index is 21.13), for example, gives rise to a reduction in fixed fees by 1.16% and an increase in performance fees by 4.92%, which are very economically significant effects (and the actual difference is 1.67% for fixed fees and 1.33% for performance fees). English legal origin countries have lower fixed fees and higher performance fees, respectively, consistent with H1 since English legal origin countries offer superior flexibility and investor protection (La Porta et al. 1997, 1998). Similarly, the data shows higher rule of law countries have lower fixed fees, while higher efficiency of the judiciary countries have higher

performance fees. Overall, the data provide very strong support for H1 regarding the effect of legality on fixed and performance fees. Similar evidence is provided in earlier work by Cumming and Johan (2009a, b)

Corruption is one of five components of the aggregated Legality Index. Johan and Najar consider whether corruption matters separately on its own, controlling for other things equal. The data show that for all specifications, the corruption index is significantly negatively related to fixed fees. Also, corruption is significantly positively related to performance fees, but the statistical significance of the effect depends on the model specification. A move from India (corruption index of 3.4) to Canada (corruption index 8.63), for example, gives rise to lower fixed fees by 1.84% and higher performance fees by 4.2%. Again, the data are strongly consistent with the predicted effect in H1 and H2. The effect of corruption on fees is graphically illustrated in Fig. 5.1.

In addition to corruption and legal conditions, Johan and Najar assess at the same time whether Hofstede's culture measures affects fees.[3] The data indicate that

[3] Hofstede's five dimensions of culture. The dimensions are: Small vs. large power distance, Individualism vs. Collectivism, Masculinity vs. Femininity, Weak vs. strong uncertainty avoidance and Long vs. short term orientation. ***Power Distance Index (PDI)*** is the extent to which the less powerful members of organizations and institutions (like the family) accept and expect that power is distributed unequally. This represents inequality (more versus less), but defined from below, not from above. It suggests that a society's level of inequality is endorsed by the followers as much as by the leaders. Power and inequality, of course, are extremely fundamental facts of any society and anybody with some international experience will be aware that 'all societies are unequal, but some are more unequal than others'. ***Individualism (IDV)*** on the one side versus its opposite, collectivism, is the degree to which individuals are integrated into groups. On the individualist side we find societies in which the ties between individuals are loose: everyone is expected to look after him/herself and his/her immediate family. On the collectivist side, we find societies in which people from birth onwards are integrated into strong, cohesive in-groups, often extended families (with uncles, aunts and grandparents) which continue protecting them in exchange for unquestioning loyalty. The word 'collectivism' in this sense has no political meaning: it refers to the group, not to the state. Again, the issue addressed by this dimension is an extremely fundamental one, regarding all societies in the world. ***Masculinity (MAS)*** versus its opposite, femininity, refers to the distribution of roles between the genders which is another fundamental issue for any society to which a range of solutions are found. The IBM studies revealed that (a) women's values differ less among societies than men's values; (b) men's values from one country to another contain a dimension from very assertive and competitive and maximally different from women's values on the one side, to modest and caring and similar to women's values on the other. The assertive pole has been called 'masculine' and the modest, caring pole 'feminine'. The women in feminine countries have the same modest, caring values as the men; in the masculine countries they are somewhat assertive and competitive, but not as much as the men, so that these countries show a gap between men's values and women's values. ***Uncertainty Avoidance Index (UAI)*** deals with a society's tolerance for uncertainty and ambiguity; it ultimately refers to man's search for Truth. It indicates to what extent a culture programs its members to feel either uncomfortable or comfortable in unstructured situations. Unstructured situations are novel, unknown, surprising, different from usual. Uncertainty avoiding cultures try to minimize the possibility of such situations by strict laws and rules, safety and security measures, and on the philosophical and religious level by a belief in absolute Truth; 'there can only be one Truth and we have it'. People in uncertainty avoiding countries are also more emotional, and motivated by inner nervous energy. The opposite type, uncertainty accepting cultures, are more tolerant of opinions different from what they are used to; they try to have as few rules as possible, and on the philosophical and religious level they are relativist and allow many currents to flow side by side. People within these cultures are more phlegmatic and contemplative, and not expected by their environment to express emotions. Source: http://www.geert-hofstede.com/

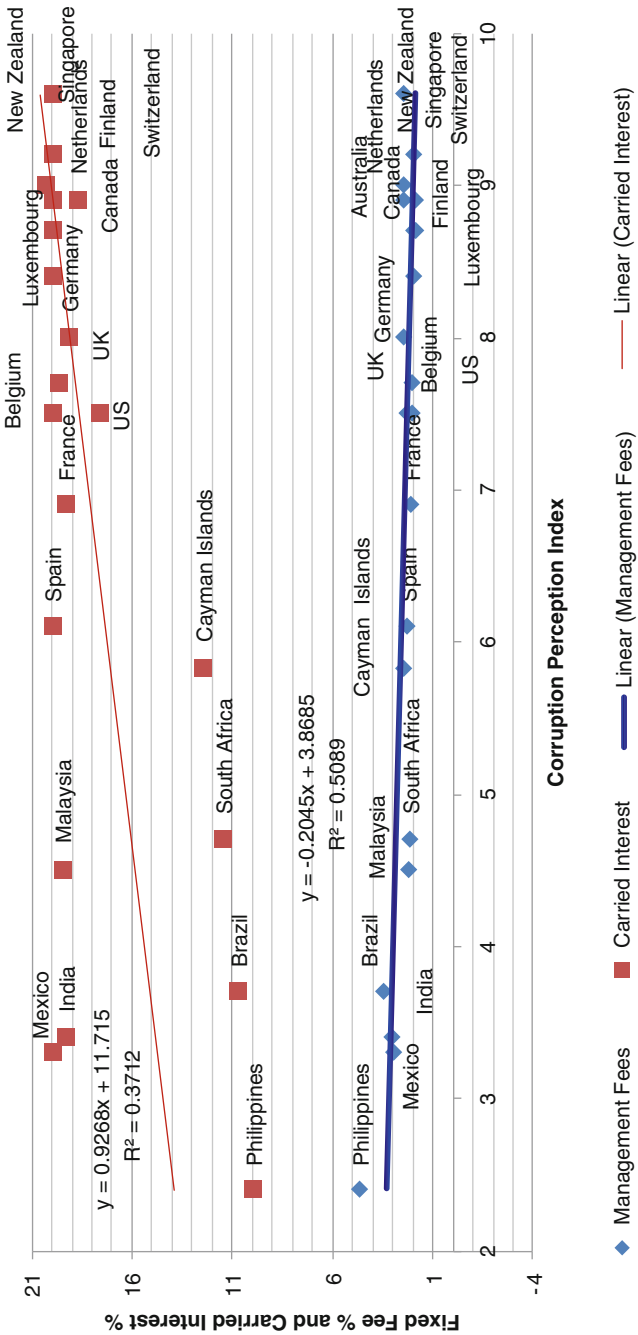

Fig. 5.1 Corruption, fixed fees and carried interest

culture is statistically significant, and the most statistically robust effect comes from the Power Distance Index. Consider again the case of India (Power Distance is 77) and Canada (Power Distance is 39). A move from India to Canada, for example, gives rise to a higher fixed fees by 0.30% and lower performance fees by 1.98% by virtue of the effect from Power Distance, all else being equal.

Overall, therefore, the data provide strong support for H1 and H2 that corruption, culture and legal settings all matter for the structure of fees. Moreover, while some of the control variables were also significant, they are not nearly as robust or significant as the corruption, culture and legal variables. These results are robust to the inclusion and/or exclusion of controls for a variety of factors including market conditions, institutional investor and fund manager characteristics, including education and experience as well as fund factors such as stage and industry focus.

Some of the control variables are significant in Johan and Najar's models and in ways that are expected. Government investors have higher fixed fees, and countries with higher GNP per capita have lower fixed fees and higher performance fees. The other variables, however, are generally insignificant and/or not robust. For example, differences between income and capital gains tax rates do not consistently significantly affect fixed fees versus management fees. Overall, therefore, the most robust variables are corruption, culture and legality for explaining international differences in fixed and performance fees.

Further to the evidence on fixed and performance fees, Johan and Najar's regression evidence indicates that the legal environment is the most statistically and economically significant determinant of clawbacks among private investment funds across countries, strongly supporting H3. In terms of the economic significance, a reduction in the quality of legal conditions by one point increases the probability of clawbacks by approximately 3.4%, so that a move from India to Canada, for example, would be a 28.32% reduction in the probability of a clawback due to legal conditions, all else being equal.

Note the asymmetric relation between legality and fund manager compensation. Fund managers have higher fixed fees and lower incentive fees in countries with weak legal conditions. But in regards to penalty clauses, fund managers in countries with weak legal conditions are more likely to face the downside risk of a clawback on their fees. Risk adverse institutional investors are more likely to require clawbacks to protect against downside risk in countries with poor laws.

The Legality index has many components, one of which is corruption. When Johan and Najar break out corruption from other components of the Legality index they discover that corruption is significant in some model specifications. However, the statistical significance of corruption goes away when cultural variables are added to the regressions. By contrast, the Power Distance is the most statistically and economically significant effect, and the most significant effect (significant at the 5% level) when it is included as an explanatory variable. The economic significance is such that a move from India to Canada, for example, gives rise to a reduction in the probability of a clawback by 1.60% due to the change in Power Distance, which is an economically significant change. Also, the regression models

in Johan and Najar indicate government investors are more likely to have clawbacks, but this effect is significant only at the 10% level of significance.

Finally, Johan and Najar analyse the relation between legality and payment terms to a fund's institutional investors in terms of cash versus share distributions from realized investments in entrepreneurial firms. The Logit regression indicates a robust relation between legality and cash distributions, consistent with H4. An improvement in legal conditions such as from India to Canada, for example, gives to a reduction in the probability of cash only distributions by 31.65%. The components on the legality index that appear to be the most significant are the rule of law and corruption. The strong effect of corruption on cash distributions and clawbacks is graphically illustrated in Fig. 5.2.

In addition to the significant effect of corruption, power distance is likewise important for cash versus share distributions, and power distance is the only robust cultural variable in some of the regression models in Johan and Najar. The economic significance is such that a move from India to Canada, for example, lowers the probability of cash only distributions by 38%. This result is intuitive as Power Distance measures the degree to which decisions are held by those with bargaining power, which would be the institutional investors and not the fund managers, particularly in developing countries with substantial power distance.

Offshore funds are much more likely to have cash only distributions, as expected (H5). Offshore funds have investors from many different countries with different interests, and cash distributions facilitate legal and tax interests of a diverse set of international investors as discussed above.

Finally, the data indicate that government institutional investors are more likely to demand cash only distributions. This finding is consistent with Government investors being more likely to have clawbacks. Also, it is intuitive as it shows that government entities have less of an interest in holding equity in the portfolio firms after the venture capital fund exits the investment.

Empirical Tests of H6 and H7

In this section we test the two central hypotheses introduced in the first section of this paper pertaining to legality and returns (H6) and corruption and returns (H7).

The data to test H6 and H7 are derived from proprietary information obtained by a leading international fund-of-funds manager, from a population of private equity managers operating in Asia (as reported in Cumming et al. 2010). The data were provided by private equity managers on a confidential basis and have been sensitized for this study. In order to avoid sample selection bias, we have drawn upon data from all managers operating in the region and who provided data, not just those which were ultimately invested in by the fund-of-funds or its clients. The data comprise information on 756 private equity investments over 21 years (1989–2009), covering investments in Australia (260 investments), China (147), Hong Kong (22), India (108), Indonesia (6), Japan (82), Korea (46), Malaysia (6),

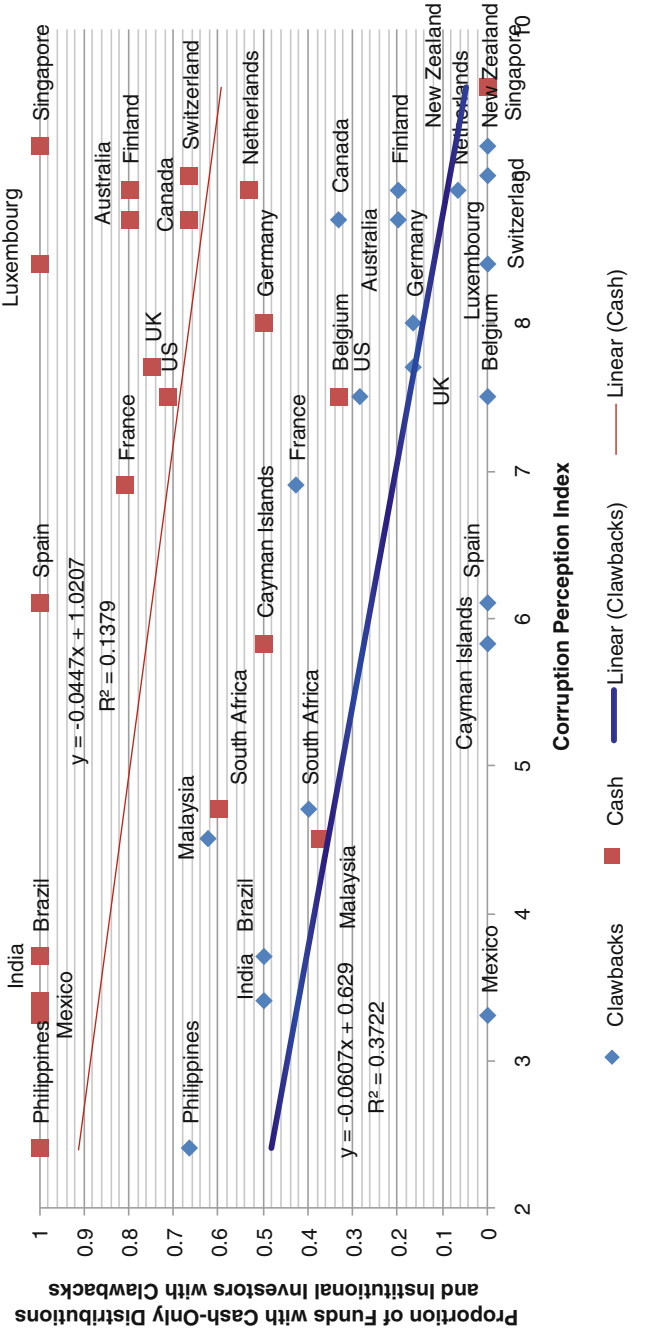

Fig. 5.2 Corruption, cash and clawbacks

New Zealand (13), Philippines (6), Singapore (18), Sri Lanka (1), Taiwan (12), Thailand (14) and Vietnam (1), as well as these funds investments overseas in Canada (1), Germany (1), Spain (1), the U.K. (3), and the U.S. (8).

Return on investment (ROI) and internal rate of return (IRR) for fully realized Asian investments are available for 289 private equity backed companies between 1989 and 2009. The remaining investments were not yet fully exited as at March 2010, the time of the Cumming et al. (2010) study. Consistent with U.S. and European studies, Asian investments generate positive returns to investors, on average. However, the return data also exhibits skewness, with high ROI/IRR observations positively impacting average returns (most notably in the case of China). The median returns show that risk-unadjusted returns are relatively consistent across different Asian companies. Australia, China, India, Japan, New Zealand, Taiwan and Thailand have median returns ranging between 1.75 and 3.0 times cost, although hold periods are relative shorter in some countries (e.g. India) which increases the IRR. Given that economic and stock market growth rates varied greatly across countries over the sample period (1989–2009), the data show that positive private equity returns can be generated in a range of institutional and financial environments.

Cumming et al. (2010) calculated a number of correlation statistics to gain useful insights into the relations observed in the data. IRRs and legality are positively correlated (0.011), consistent with H6, albeit the correlation is not statistically significant. IRRs and corruption are significantly negatively correlated (−0.24), consistent with H7. We also note that a number of the other country level variables are highly correlated, such as the Hofstede cultural measures and GDP per capita. As such, in econometric tests the authors were careful to show results with different sets of explanatory variables.

Cumming et al.'s multivariate analyses of H6 and H7 are undertaken with both OLS regressions on the subsample of fully exited investments, as well as Heckman (1976, 1979) corrected investments. The Heckman estimates account for the fact that the decision to exit is not a random event. For example, there is evidence that private equity funds tend to hang on to poorer performing investments in order to facilitate fundraising activity (e.g., Cumming and Walz 2010). Specifically, the Cumming et al. (2010) sample selection corrections procedure involves two steps. The first step involves determining the probability of an exit. The second step is the linear regression explaining returns with the sample selection correction based on steps one and two (based on Heckman 1976, 1979). It is noteworthy that their results are quite robust to alternative specifications of the sample selection corrections, but not as robust relative to the standard OLS estimates on the subsample of fully realized exits. Specifically, the econometric specifications are the function of the following variables:

1. Probability of observing an actual exit $= f$ {date of investment, legal and cultural variables, economic conditions, transaction specific characteristics}
2. Realized returns $= f$ {legal and cultural variables, economic conditions, transaction specific characteristics | Actual Exit [regression (1)]}

The regressions in Cumming et al. (2010) provide strong support for H6 for the Legality index. On average, Cumming et al. estimate that a one-point improvement in legality is associated with a 17.5% increase in IRRs. For example, moving from Malaysia (legality 15.506) to Singapore (Legality 18.291) gives rise to an estimated 48.7% increase in expected returns, which illustrates that the legality effect is economically large. In some specifications, however, collinearity across explanatory variables is problematic and as such this finding is not robust in every one of their model specifications.

Cumming et al.'s (2010) data also provides strong support for H7. Indeed the effect of corruption on returns is significant across all six regression models. Higher levels of corruption (indicated by lower values of the Corruption Perception Index) are associated with higher IRRs, and this effect is statistically significant at at least the 5% level in all models. The economic significance is fairly robust in the reported models whereby a one-point increase in corruption is associated with a drop in returns by 30%. We note that for more parsimonious models, the statistical significance of corruption is similar and the economic significance can go down to −7.4%.

The statistical and economic significance associated with H6 and H7 is graphically illustrated in Figure 5.3 which presents the results for median levels by country. Figure 5.3 shows a negative relation between the corruption index and returns, consistent with H7 and the regressions models, and a positive relation between corruption and legality, consistent with H6 and the regressions models.

There is also evidence in Cumming et al. (2010) that the control variables are significant in ways consistent with expectations. Hofstede's cultural factors are generally insignificant. The control variables for market conditions include GDP per capital, as well as the MSCI return over the contemporaneous investment period. The pseudo beta is estimated to be 1.76–1.80, which is consistent with other work estimating the beta of venture capital and private equity investments (Cochrane 2005; Cumming and Walz 2010). Post investment acquisitions are positively related to IRRs, and post investment divestitures are positively related to IRRs, but these effects are not robust. Enterprise value at the time of investment is positively associated with IRRs. Equity share of the fund manager(s) is negatively associated with IRRs, which is likely attributable to the reduced incentives for the other equity holders and the lower levels of leverage in such transactions. Finally, managerial replacement is negatively related to IRRs, which is likely attributable to the fact that private equity funds are more likely to replace management when expected returns are lower. Cumming et al. (2010) note that some of these transaction specific variables are endogenous, and we do not have viable instruments to control for endogeneity. Nevertheless, the results pertaining to the central hypotheses are not significantly influenced by the inclusion or exclusion of these transaction specific variables.

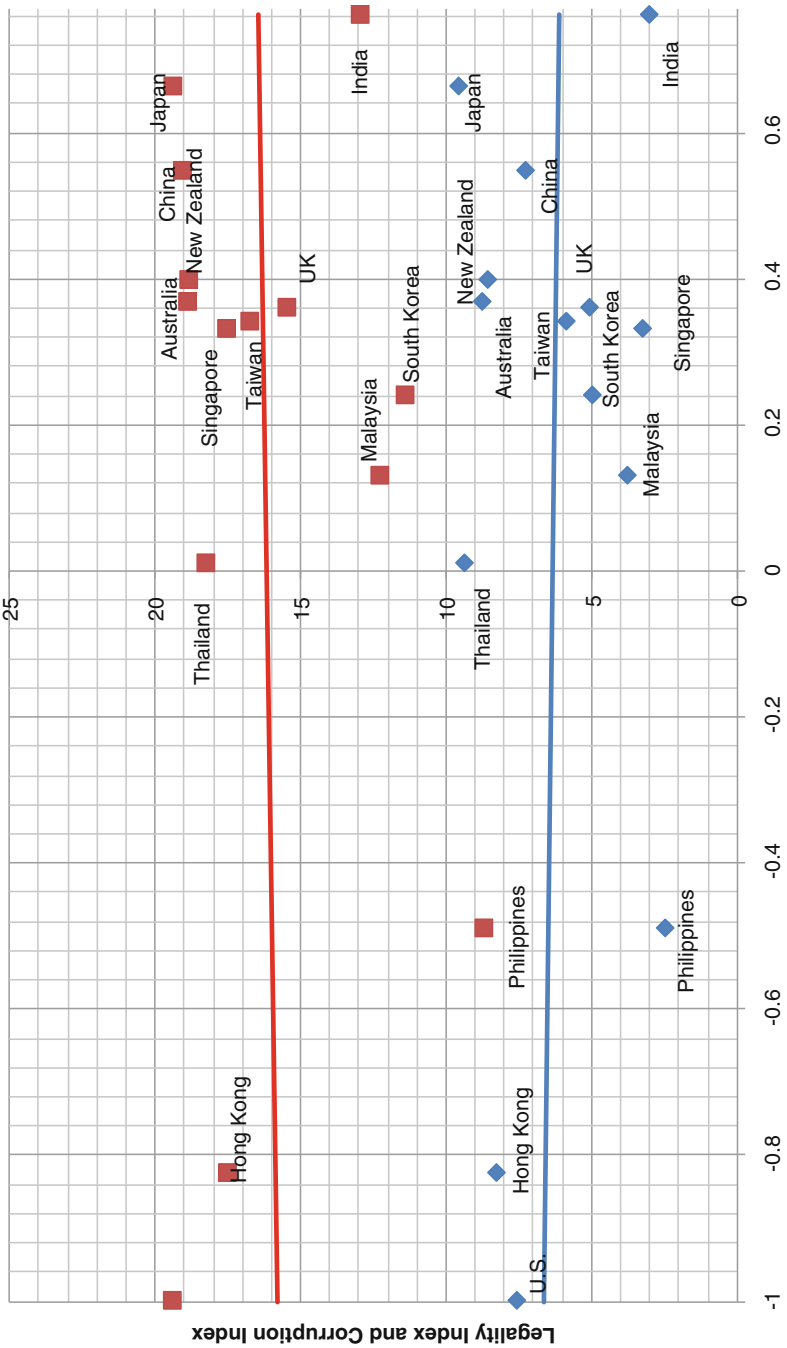

Fig. 5.3 Corruption, legality and buyout returns

Concluding Remarks

In this chapter we have reviewed theory and evidence on how law and corruption influence manager compensation and performance outcomes. Our research has been motivated by growing popular concern since the financial crisis over manager compensation and the "economic benefits" of venture capital and private equity investing. Media and political debate has questioned whether compensation structures in asset management lead to the appropriate alignment of interest and to "value creating" behavior by fund managers. In an international context, international law firms such as S.J. Berwin have highlighted the role of corruption and law in setting fees and governance in the private equity industry: as they note, "[p]rivate equity funds that use agents, advisers or consultants to conduct business on their behalf without proper due diligence, training or monitoring, and business partners that lack transparency in their books and records should also place the fund on alert, as should unusual or unclear sales timings, transactions or payment routes, and any non-standard contractual terms." [4]

We first focused on managerial compensation. Using a sample of 123 venture capital and private equity funds around the world, we found that countries with better legal conditions are more likely to have lower fixed fees, higher carried interest fees, that clawbacks are less likely, and share distributions are more likely. These findings support the idea that legal conditions help to align the interests of managers and shareholders. Further, the data show that countries with lower levels of corruption have lower fixed fees and higher performance fees, and are less likely to have clawbacks and cash-only distributions. Hofstede's measure of power distance is negatively related to fixed fees and the use of cash-only distributions, but positively related to performance fees and clawbacks. Overall, the data strongly indicate that corruption, culture and legal settings are much more significant in determining fees than fund manager characteristics and/or market conditions.

That legal conditions affect the payment conditions of fund managers and institutional investors across countries has a number of implications for future research. Legal and cultural conditions influence fund manager compensation, which in turn could have implications for fund investment selection, returns and the development of private equity markets across countries. The comparative importance for law versus culture in compensation contracts versus the role of law directly in other aspects of fund management could be a fruitful avenue for future research.

Next, we considered the relationship between legal protection, corruption and private equity returns, using transaction data spanning 20 countries between 1989 and 2009. The data indicate that private equity returns are positively associated with legality and negatively associated with corruption. In addition to the importance of legality, the data show that institutional investors in private equity should explicitly examine how private equity managers add value to their portfolio companies. Our findings suggest that private equity managers are active investors who can mitigate the

[4] *Supra* note 1.

expected costs of corruption and hence generate higher returns in more corrupt countries (controlling for legal system). In addition to these central results, we noted that private equity fund returns in part depend on cultural factors, economic conditions and deal specific characteristics such as equity shares held by the private equity funds, syndication and managerial replacement.

Research on venture capital and private equity is in its infancy, particularly for less developing economies. This is not surprising as the institutional history of markets such as Asia are is substantially younger than the U.S. or Europe. Existing literature has focused on the institutional development of particular countries or on topics where public data is available (e.g. public-to-private transactions). Institutional investors have not, until recently, been able to draw upon empirical analysis to improve their understanding of the impact of legal and political systems on private equity returns in other regions such as Asia. The evidence reviewed herein is a first contribution to what we hope is a growing body of work on this topic. The data are strongly consistent with the view that fund fee structures and performance strongly depend on law, culture and corruption.

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Part II
The Impact of Regulation and Financial Structure on Ethics and Governance

Chapter 6
The Development of the UK Alternative Investment Market: Its Growth and Governance Challenges

Chris Mallin and Kean Ow-Yong

Introduction

The UK Alternative Investment Market (AIM), launched in 1995, has proved to be attractive to both UK and overseas companies seeking a London listing. It has a number of advantages for small and medium sized companies including less onerous requirements to list than would be needed on the UK's Main Market whilst still retaining the benefits of a world-class public market within a regulatory environment designed specifically to meet the needs of smaller companies.

As well as its success within the UK, AIM has recently exported its model to both Italy and Tokyo. Central to both is the concept of the NOMAD (nominated advisor), a unique feature of AIM. It is early days for both markets yet but no doubt they may flourish in the same way as AIM itself has. Of course there are many other junior exchanges including the Nuevo Mercado, TSX Ventures, Growth Enterprise, KOSDAQ, SESDAQ and Mothers but none seems to have had the overall success that AIM has had.

In this chapter, we examine the development of AIM and its attraction for both UK and overseas companies seeking a UK listing. We analyse the distribution of companies on AIM from various industries and from various overseas countries. We detail the structural characteristics of AIM examining the role played by the NOMAD, and the corporate governance requirements for AIM companies. Next, we conduct some mini case studies on the extent of corporate governance disclosure by four AIM companies based on their annual reports and company website information. We also contextualise AIM comparing it to other junior markets globally. Finally we have some concluding comments about AIM and its future development.

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Growth of the Alternative Investment Market (AIM)

The UK Alternative Investment Market (AIM) was launched in 1995 and now has over 1,100 companies listed. Why has AIM proved so attractive?

Mallin and Ow-Yong (2008) highlight the advantages for companies of AIM: 'The market offers opportunities to smaller and fast growing companies to raise new capital, allowing their shares to be traded widely and for its owner/managers to liquidate some of their shareholdings. Although it was intended to succeed the Unlisted Securities Market (USM), its admission requirements and on-going rules are less onerous. For example, there is no minimum market capitalisation, no minimum trading record and no minimum percentage of shares in public hands. AIM membership rules were thus kept simpler to encourage a wide variety of companies to join and keep capital raising and membership costs to a minimum. To dispel the investor community's concern over its relaxed admission rules, the London Stock Exchange (LSE) introduced an unofficial class of sponsors called nominated advisors who effectively verify their AIM clients' financial soundness and health. The more relaxed admission rules have proved attractive not just for UK companies but also for overseas companies wishing to obtain a listing in the UK. The post-Enron climate in the USA which led to the introduction of Sarbanes-Oxley also saw many companies discouraged from trying to list in the USA and a resultant surge of interest by overseas companies in the UK's AIM.

From Table 6.1, it can be seen that there was a total of 1,151 companies at July 2011, of which 929 were UK companies and 222 were international companies. The proportion of international companies joining AIM has increased over time and since 2006, international companies have always represented at least 20% of companies on AIM. Whilst AIM has seen phenomenal growth particularly during the period 2004–2006 when there was a peak of 519 admissions in 2005, there has been a declining trend in admissions to AIM since 2007 with a particularly low number of admissions during 2009 when there were only 36 new admissions. This decline is likely attributable to the global financial crisis and a reluctance on the part of companies to come to the market.

The distribution of companies by equity market value can be seen in Table 6.2. The most common market value for companies is in the range £10–25mn with 238 companies having a market value in this range. There are 303 companies with a market value of more than £50mn accounting for 26.3% of the companies on AIM with a combined equity value of £62544.9mn (82.7% of the AIM companies' equity value). However the vast majority of AIM companies have a market value of less than £50mn (831 companies) with 622 of these companies having a market value of less than £25mn.

Table 6.3 shows the distribution of companies by business sector. Financial companies (23%) represent the largest number of companies in a business sector. However, the oil and gas sector (22%) has the largest total value by market capitalisation (£16,580mn) although the sector as a whole has less than half the number of companies compared with the financials sector. The telecommunications and

Table 6.1 AIM 1995–2011

	Number of companies				Number of admissions		
	UK	International	Total	Market value (£m)	UK	International	Total
19/06/1995	10	0	10	82.2			
1995	118	3	121	2,382.4	120	3	123
1996	235	17	252	5,298.5	131	14	145
1997	286	22	308	5,655.1	100	7	107
1998	291	21	312	4,437.9	68	7	75
1999	325	22	347	13,468.5	96	6	102
2000	493	31	524	14,935.2	265	12	277
2001	587	42	629	11,607.2	162	15	177
2002	654	50	704	10,252.3	147	13	160
2003	694	60	754	18,358.5	146	16	162
2004	905	116	1,021	31,753.4	294	61	355
2005	1,179	220	1,399	56,618.5	399	120	519
2006	1,330	304	1,634	90,666.4	338	124	462
2007	1,347	347	1,694	97,561.0	197	87	284
2008	1,233	317	1,550	37,731.9	87	27	114
2009	1,052	241	1,293	56,632.0	30	6	36
2010	965	229	1,194	79,419.3	76	26	102
2011 to Jul	**929**	**222**	**1,151**	**75,625.9**	**41**	**9**	**50**
Launch to date					**2,697**	**553**	**3,250**

Source: AIM Market Statistics, London Stock Exchange (July 2011)

Table 6.2 Distribution of companies by equity market value

Market value range (£m)	Number of companies	%	Equity market value (£m)	%
Over 1,000	8	0.7	11,149.8	14.7
500–1,000	15	1.3	10,523.6	13.9
250–500	46	4.0	14,964.8	19.8
100–250	108	9.4	17,058.4	22.6
50–100	126	10.9	8,848.3	11.7
25–50	209	18.2	7,392.3	9.8
10–25	238	20.7	3,948.9	5.2
5–10	156	13.6	1,158.4	1.5
2–5	141	12.3	479.1	0.6
0–2	87	7.6	102.3	0.1
Unvalued securities	9	0.8	–	–
Suspended	8	0.7	–	0.0
Totals[a]	**1,151**	**100.0**	**75,625.9**	**100.0**
More than £50m	303	26.3	62,544.9	82.7
Less than £50m	831	72.2	13,081.0	17.3
Less than £25m	622	54.0	5,688.7	7.5

Source: AIM Market Statistics, London Stock Exchange (July 2011)
[a]Excluding fixed interest securities

Table 6.3 Distribution of companies by business sector

Business sector	Number of companies	%	Market capitalisation (£m)	%
Oil & gas	125	11	16,580.0	22
Basic materials	167	15	16,230.0	21
Industrials	214	18	7,830.8	10
Consumer goods	60	5	3,157.1	4
Health care	63	5	3,957.6	5
Consumer services	125	11	6,253.9	8
Telecommunications	13	1	1,069.0	2
Utilities	12	1	729.1	1
Financials	259	23	14,133.3	19
Technology	113	10	5,685.1	8
Total	**1,151**	**100**	**75,625.9**	100

Source: AIM Market Statistics, London Stock Exchange (July 2011)

utilities sectors are the smallest both in terms of the number of companies as well as market capitalisation.

As mentioned earlier, AIM has attracted many overseas companies. Table 6.4 highlights the distribution of companies according to the country of operation. The main country of operation is the geographical location from which the AIM company derives the largest proportion of its revenues or where the largest proportion of its assets are located.[1]

By far the largest number of companies (704) have the UK as the main country of operation (60.95%); followed by Western Europe (68 companies); Africa (54 companies); China and the USA (each with 43 companies); Russia and CIS (38 companies); and South East Asia (36 companies). Other countries of operation include India and Bangladesh, Canada, Japan, Latin America and the Middle East. The range of countries of operation indicates the attractiveness of AIM in an international context. It also highlights that the companies' operations are undertaken in countries with strong corporate governance, for example, the UK, Canada, and the US, and in countries with weaker corporate governance systems, for example, China, India and Bangladesh, Russia and the Middle East.

Back in May 2003, The LSE announced[2] that companies already listed in an AIM designated market may be eligible to join AIM. This fast track route requires companies to have had their securities traded in one of the nine designated markets such as Johannesburg Stock Exchange, NASDAG Global and NYSE Euronext, in addition to any UK Official Listing, for at least 18 months prior to the date of admission to AIM. These companies are also required to make a more detailed pre-admission announcement in lieu of an AIM admission document. Research by

[1] According to the LSE AIM Statistics 2011, where a company has more than one country of operation, and where no single country can be identified clearly as the main country of operation, the country of incorporation has been selected by default.

[2] The LSE AIM Website, May 2003 Press Release.

Table 6.4 Geographical region/country of operation

Geographical region/country	Number of companies	Total market capitalisation as at month end (£m)
Africa	56	8,371
Australia	23	1,233
Canada	17	3,826
Central & Eastern Europe	23	1,248
Channel Islands	7	881
China	41	4,095
India & Bangladesh	29	3,532
Isle of man	10	1,155
Israel	9	67
Japan	1	86
Latin America	26	1,998
Middle East	11	2,052
Other Offshore	12	945
Russia & CIS	40	3,187
South East Asia	36	3,749
UK	698	31,368
USA	44	3,092
Western Europe	68	4,740
Totals	**1,151**	**75,625**

Source: AIM Market Statistics, London Stock Exchange (July 2011)

Trowers & Hamlins,[3] found that 14 out of 73 dual-listed companies, used this Designated Market Route to join AIM. For example, SacOil, a company already listed on the Johannesburg Stock Exchange, joined AIM in April 2011 via the fast track admission process.

Regulatory and Legal Issues for Junior Markets

In this section we widen our view to consider some of the literature covering some of the regulatory and legal aspects relevant to AIM and other junior markets. This approach has the benefit of highlighting issues from a wider range of markets that may be relevant for AIM companies and, secondly as we include a discussion of the applicability of AIM to other countries and a comparison with some other junior markets later in the chapter it is helpful to have discussed some of the regulatory and legal issues.

Chiu (2004) examines whether UK small businesses can obtain growth capital in the public equity markets. She identifies that major cost savings are derived from less onerous admission requirements to second tier markets such as AIM. However she also points out that AIM was established 'without fully reviewing the needs of small businesses as part of a holistic inquiry. Therefore, the AIM is founded upon the assumption that admission to trading requirements is by themselves the key

[3] Trowers & Hamlins Press Release, 17 June 2011.

factor to improve small business access to capital. This may be erroneous.' She identifies that as amounts of finance that companies need to raise vary considerably, and that as smaller companies tend to raise smaller amounts of finance, then 'the crucial issue lies with the fixed costs associated with statutory compliance of mandatory disclosure for an initial public offer'.

In similar vein, Cassia et al. (2009) examine the effects of external sources of knowledge on firm growth by comparing companies listed on the UK main market with those on AIM (entrepreneurial firms). They find that universities' knowledge input and output are important determinants of the growth of entrepreneurial firms and that 'knowledge produced and diffused in the local environment is more important for entrepreneurial companies than for companies in more advanced stages of the development process'.

Carpentier et al. (2009) analyse the economic consequences of disclosure and regulation within a context of significant information asymmetry and lenient regulation in Canada where firms can join the stock market at the pre-revenue stage either using full disclosure (IPOs) or the minimal disclosure allowed by reverse mergers (RMs). They state that more than 80% of firms in Canada report negative earnings at the time of listing and close to 50% report no revenues and they point out that such firms could not enter other junior markets in the world either because they require minimum gross proceeds (for example, of five million euros) or they have principles-based listing requirements whereby they do not apply a numerical threshold but require the firm to have a sponsor (for example, AIM with its NOMAD system). In a sample of IPOs and RMs for the period 1993–2003, they find that the level of disclosure and regulation significantly influence the value and long-run performance of newly listed firms. Their results are consistent with increased disclosure levels lowering the information asymmetry component of the cost of capital. Moreover they posit that low listing requirements negatively affect investor wealth and that a higher initial listing requirement will protect investors. This has relevance for the AIM where the NOMAD is responsible for taking the company coming to AIM through the admittance process, advising and guiding it on various aspects. If this role is not carried out diligently, then this may present an ethical dilemma whereby companies have lower standards than is desirable.

In a subsequent paper, Carpentier et al. (2010) examine the valuation of venture capital (VC) backed IPOs in Canada compared to the US over the period 1986–2007. They find that lower listing requirements in Canada lead to valuations that are much lower in Canada relative to the US with its stricter listing requirements. This situation is disadvantageous for the VC industry in Canada as low levels of valuations for IPOs may exacerbate the comparatively lower performance of the Canadian VC market compared to the US.

Another paper which examines the venture capital market in Canada is Carpentier and Suret (2009). In addition to the Toronto Stock Exchange (TSX) and the TSX Venture Exchange (TSXV), they identify two secondary and more recently created markets: the NEX and the Canadian National Stock Exchange (CNSX). However it is the TSX main market that they state is equivalent to the London AIM although it does not have the NOMAD system that AIM has. They

find that 'for a horizon of 5 years, the delisting rate of newly listed companies is lower than the one reported in the US, and much lower than the failure rate observed for the private VC sector in Canada'. They find this result surprising given the apparently poor quality of the new issuers on the public market and the lack of value added activity usually associated with conventional VC providers, and argue that this may be explained by two reasons. Firstly that in Canada a company can easily issue private or public equity even if it is not profitable or even not making sales, and secondly that the TSXV is more tolerant in terms of not delisting non-operating companies.

A decade earlier, Gilson and Black (1999) cited the United States has having both an active venture capital industry and well-developed stock markets. They argued that 'venture capital can flourish especially – and perhaps only – if the venture capitalist can exit from a successful portfolio company through an initial public offering (IPO), which requires an active stock market.'

Levis (2008) examines a sample of 1,735 IPOs listed on the London Stock Exchange main market and the AIM during the period January 1995–December 2006. He finds that the two markets provide a vital exit route through direct flotation and sale of quoted equity for some of the largest portfolio companies held by private equity firms in the UK. IPOs on the main market perform relatively better, in equal weighted returns, than their AIM counterparts although in value weighted terms, the performance of venture capital-backed IPOs in the main market is badly affected by the small number of IPOs listed in 2000. Levis provides a useful summary of related studies covering IPOs in the US and other European capital markets in an appendix to his paper and interested readers are referred to this for further information as IPOs are not the main focus of this chapter.

Widening our perspective of the AIM to consider some international dimensions, we can consider two interesting aspects. Firstly, in his paper, Mendoza (2008) analysed how AIM's regulatory regime has contributed to the success of low-cost listing stock exchanges. He argued that the AIM provides a funding gap opportunity for companies that cannot meet the more rigorous listing requirements in senior markets such as the NYSE, NASDAQ or the LSE Main Board. He states that the AIM's model relying on lower admission costs and lighter on going requirements that are overseen by NOMADs, has led to its rise as one of the world's fastest growing exchanges. He surmises that AIM's regulation level is close to optimal in explaining its recent success and adequacy as a listing venue for smaller, high growth firms. However, he argued that NOMADs as AIM's regulators may be questioned on the grounds that these entities are paid by the firms they counsel. To counter this, it is in NOMADs interest to avoid considerable loss to their reputational capital and hence to their future business through negligent oversight or when they permit their clients to misrepresent the accuracy of their market disclosures. He concludes that if AIM is to continue to compete successfully with the lower tier segments of well-established markets like NASDAQ's Capital Market Segment and competition from trading platforms within the UK, it must focus on several areas including adapting its rules to fit investor needs, remain vigilant in overseeing NOMADs and their client firms, improve liquidity constraints and increase the number of international companies.

Secondly, Mizuno and Tabner (2008) compared three junior stock exchanges in East Asia with the AIM's model and examined whether Asian stock exchanges have the features to replicate the success of the AIM. They evaluated these exchanges listing criteria, how investors were protected, governance structures and how they monitor and oversee their listed firms. They concluded that the Tokyo Stock Exchange Mothers Market, the Hong Kong Stock Exchange Growth Enterprise Market and the Singapore Exchange Catalist market share many similarities with the AIM but differ in two main features. First, companies on LSE's senior tier Official List seem willing to move 'downward' to the AIM, but the companies on the top tier of these three exchanges have not shown a willingness to migrate downwards to their junior stock exchanges .Secondly, the generous fiscal incentives for investors is unique only to AIM and not found in these three junior stock exchanges, although how much AIM's success is due to this incentive remains to be determined.

Finally, in terms of corporate governance, the OECD (2009) points out that there may be a more general relaxation of governance standards in some markets 'For instance, Alternext-listed companies are not subject to any of the corporate governance codes applicable in the four jurisdictions covered by the Euronext main market. On the other hand, insofar as these new segments mostly do not compete head-to-head with old exchanges for the same listings the approach can equally be seen as an adaptation of governance requirements to suit the size and type of prospective issuers. Through multiple listing tiers, exchanges may actually have improved the governance and transparency of small and medium size issuers, which might not have listed in the absence of such preferential treatment.'

The next section considers in detail the corporate governance recommendations and guidelines applicable to companies listed on the UK AIM.

Corporate Governance in AIM Companies

UK Corporate Governance Code

Following a series of consultations, in May 2010, the Financial Reporting Council (FRC) published a new UK Corporate Governance Code (the 'Code') to replace several revisions of the Combined Code which was first introduced in 2003. All companies, wherever they are incorporated, with a premium listing[4] of equity securities on the Main Market of the London Stock Exchange (LSE), must disclose in their annual report for periods beginning on or after 29 June 2010, the extent to which they comply with the Code, or provide a reasoned explanation where they do not.

[4] The Official List or Main Market now has two tiers; a premium listing retaining the standards that apply previously to Official Listed companies and a new Standard Listing with less onerous standards. All companies on the FTSE index classifications are required to be premium listed.

The Code consists of certain core or 'main principles' supplemented by various supporting principles and other Code provisions which provide detailed information about, and offer examples of how, the main principles may be applied. Listed companies have to disclose whether or not they have complied with these provisions and, if they have not, their reasons why they decide to apply a main principle differently from that suggested by the Code.

A number of new key main principles were introduced to reflect the new Code's greater emphasis on board's role and behaviour. In particular, four new main principles focussing on: the Chairman's responsibility to report on the board's role and its effectiveness; the board having an appropriate balance of skills, experience, independence and knowledge of the company; non-executive directors (NEDs) to challenge and develop strategy; and that all directors spend sufficient time to discharge their responsibilities effectively.

The Code requires all board directors of FTSE 350 companies to put themselves forward each year for re-election by shareholders. This new requirement for annual re-election is perhaps the most significant amendment to the Combined Code. However, the companies can exercise their discretion not to comply and instead explain why they think their governance practices adequately deal with this new principle of annual re-election. In practice, it seems likely that institutional shareholders will expect FTSE 350 companies to comply and offer annual re-election.

While the LSE regulates AIM companies, to some extent through disclosure requirements via the AIM rules, AIM companies are not legally bound to comply with the corporate governance provisions for companies listed on the Main Market. Nevertheless, investors in particular institutional investors expect AIM companies to voluntarily adopt corporate governance provisions. As reported in LSE's 'The Growth Market of the World' (2008) report, 45% of the value invested in AIM companies comes from institutional investors. Hence AIM companies often voluntarily adopt corporate governance structures and disclose them to satisfy the expectations of these sophisticated investors.

There are in the main, three key sources of corporate governance guidelines and rules that AIM companies may adopt; namely AIM rules, the Quoted Companies Alliance (QCA) Guidelines; and the Corporate Governance and Voting Guidelines for AIM Companies published by the National Association of Pension Funds (NAPF). Each of these main sources is discussed below.

The AIM Rules

Whereas the Listing Rules require companies on the LSE premier listing to either comply with the Code, or to explain why they have not done so, the AIM Rules for Companies (2010) (hereafter the AIM Rules) do not contain such a requirement. The LSE accepts that a blanket requirement in the 'one size fits all' Code is not appropriate given the nature and range of smaller growing companies that make up AIM. The LSE views such a step as one which could be seen as simply 'more

regulation' rather than benefiting a company's business or in its interaction between the shareholders and its board. The AIM Rules implicitly contain a corporate governance consideration relating to disclosure obligations and restrictions on corporate transactions.

The LSE introduced AIM Rule 26 whereby from August 2007, it is the responsibility of each AIM company and their nominated advisor, from admission, to maintain a website where specific key corporate information should be made available to view free of charge. This specific information should include a description of its business; the names and brief biographical details of each director; a description of the responsibilities of board directors and details of any board sub-committees and their responsibilities; its country of incorporation and main country of operation; the number of AIM securities in issue and the percentage holdings of its significant shareholders; its most recent annual report published and similar reports published since the last annual report; and details of its nominated advisor and other key advisors.

Failure to comply may result in penalties for both the AIM company and its Nominated Advisor for breaching this AIM Rule. Under the AIM Rules for Nominated Advisers (2007), the penalties imposed by the LSE on an AIM company found guilty of contravening this AIM Rule, range from issuing a warning notice, imposing a fine, public censure and cancellation of the admission of its AIM securities. As an example, following an exercise in August 2007 to access compliance with Rule 26, the LSE issued warning notices to seven AIM companies and fined a further nine companies, a total of £95,000 for more serious breaches.[5]

Disclosure Obligations

The nominated advisor for a company applying for admission to AIM must give consideration, together with the directors, and make a statement as to whether or not appropriate corporate governance measures were adopted (AIM AR Schedule 3 for Nominated Advisors). However, after admission, there is no continuing obligation in the AIM Rules to report on the compliance or otherwise with corporate governance standards.

A number of continuing disclosure obligations are contained in the AIM Rules requiring disclosure, for example, of new developments which if made public would be likely to lead to a substantial movement in the price of its securities (Rule 11). These new developments by an AIM company include a change in financial condition or sphere of activity; and the performance of its business or expectation of business performance. In addition, under Rule 17, an AIM company must issue notification without delay of any deals by directors; changes in the holdings of significant shareholders and the resignation, dismissal or appointment of any director, nominated advisor or broker. Further, half-yearly and annual reports must be published on

[5] LSE AIM Notice, 10 January 2008.

time, and each AIM listed company is required to disclose the information set out under Rule 26 on its website.

To sum up, the LSE views good corporate governance as just as important and relevant for AIM companies as it is for Main Market companies on the premium list although the LSE AIM Rules do not require AIM companies to comply with the principles of the new Code. This is because the LSE does not believe that AIM companies, given their nature and range, should be required to comply or explain against a particular Code. In addition, the LSE expects NOMADs should work with their AIM company clients, both on admission and on an on-going basis, to evaluate and implement corporate governance standards appropriate for each AIM company to adopt.[6]

The Quoted Company Alliance (QCA) Guidelines

However "good" corporate governance as embodied in the recommendations of the new Code n (2010) is viewed as a standard that AIM companies should aspire to. The LSE supports the use of corporate governance guidelines issued by the Quoted Companies Alliance (QCA) which help AIM companies achieve the standard of corporate governance appropriate to them.

The Quoted Companies Alliance (QCA), formerly the City Group for Smaller Companies (CISCO), is an association representing the interests of smaller companies and their advisors. The QCA fully embraced the principles of corporate governance contained in the various versions of the Combined Code and advocated that these principles should be adopted by all public quoted companies insofar as it was practicable for their size. QCA Guidance for Smaller Companies (2004) urged smaller companies to comply with the Combined Code as far as they were able but where they were unable to comply fully, then they should explain why they were unable to comply.

In July 2005, the Quoted Companies Alliance (QCA) published a set of corporate governance Guidelines for AIM companies as the Combined Code did not directly apply to them.[7] These 2005 QCA Guidelines were superseded by a new publication, 'Corporate Governance Guidelines for Smaller Quoted Companies' (the QCA Guidelines) published in September 2010. The QCA Guidelines takes into account the new UK Corporate Governance Code ('the Code' referred to in the earlier section). The new QCA Guidelines is less rigorous than those applicable to companies listed on the main exchange under the new Code. All AIM companies are expected to comply with at least the new QCA Guidelines with larger AIM companies aiming for higher standards of good governance practice nearer those of the new Code.

[6] LSE Inside AIM Issue 2, July 2010.

[7] The Code was revised in 2007 but there were no material changes and again in 2010. The new guide (2010) combines the content of both the previous guides.

The QCA Guidelines (2010)

The underlying theme behind the QCA Guidelines (2010) is that trust and transparency between an AIM company's board and its shareholders will reduce the need for more regulation. The QCA Guidelines promulgates four key elements to effective corporate governance namely the Chairman's responsibility for corporate governance; the board acting together as a team; the adoption of best practice corporate governance processes; and non-executive directors being truly independent. The independence of a board member should be defined according to the individual's approach to the role and his/her ability to behave independently and appropriately, rather than an absence of connections.

The QCA states that the 12 guidelines mentioned below represent good corporate governance practice. The guidelines are divided into three categories; flexible, efficient and effective management, entrepreneurial management and delivering growth in shareholder value over the longer term.

The guidelines under the category of flexible, efficient and effective management address the following areas:

- Structure and process – governance structures implemented by companies should reflect their size and business complexity.
- Responsibility and accountability –management responsibility should be clear and transparent. No one person should carry out both the roles of chairman and chief executive
- Board balance and size – a board should not be so large as to prevent it operating efficiently. A company should include at least two independent non-executive directors and not be dominated by one person or a group of people and
- Board skills and capabilities – board members should have appropriate experience and qualification in the industry in which the company operates. An effective audit, remuneration and nomination sub-committees with the necessary character, skills and knowledge should be put in place to advise the board.
- Performance and development – there should be regular reviews of the board, its sub-committees and individual board members. Board members found ineffective should be replaced if their performance does not improve.
- Information and support – the board need to be in receipt of the best possible information (sufficient, timely, accurate and clear) to enable them to constructively challenge recommendations put before them. Where necessary, non-executive directors should be given access to external advice.
- Cost-effective and value added service – shareholders should be advised on the benefits of effective governance. This will normally involve publishing key performance indicators which align with strategy, and communications through regular meetings between the directors and shareholders.

The following two guidelines relate to the category of entrepreneurial management:

- Vision and strategy – the vision and strategy of the company must be communicated internally and externally.

- Risk management and internal control – the board needs to be able to define and communicate the company's risk appetite and how it manages its key risks, while maintaining an appropriate balance between risk management and entrepreneurship.

In the category of delivering growth in shareholder value over the longer term, the guidelines relate to:

- Shareholders' needs and objectives – there needs to be effective communication between shareholders and the board so that the board understands shareholders' needs and objectives and their views on the company's performance.
- Investor relations and communications – an effective communication channel needs to be in place between the board and its shareholders.
- Stakeholder and social responsibilities – companies should have a proactive corporate social responsibility (CSR) policy, as this can help create long-term value and reduce risk for shareholders and other stakeholders.

The QCA Guidelines emphasises that good corporate governance means clear disclosure as high quality reporting benefits not only the shareholders but all the stakeholders. The Guidelines advise companies to publish an annual corporate governance statement that describes how they achieve good governance. This should be published in their annual report and accounts, or failing that, on the company's website.

The Guidelines include a section describing what good corporate governance mean for the board as a whole, to the key board members and its audit, remuneration and nomination committee members, the company secretary and shareholders.

As can be seen from the above summary of the QCA Corporate Governance Guidelines for Smaller Quoted Companies, there is an expectation that AIM companies will have good governance, and as the QCA states: 'It is anticipated that all AIM companies will wish to follow good governance and should be able to apply all of the Guidelines set out in this QCA Guidelines. The Corporate Governance statement should, at a minimum, describe how each of the QCA Guidelines is put into practice by the company and also describe any additional corporate governance standards and procedures that the company applies beyond this basic level. It is anticipated that a company should be able to (and will) apply all of the QCA Guidelines. Where this is not the case, the statement should describe how the features of good governance are being achieved'.

The NAPF Corporate Governance and Voting Guidelines for AIM Companies

In March 2007, NAPF issued its policy and voting guidelines for AIM companies (hereinafter the NAPF AIM Policy). These guidelines have not been updated for AIM companies to reflect the publication of the UK Corporate Governance Code

although NAPF issued a response to the Code in November 2010 to help investors interpret compliance with the Code provisions. NAPF acknowledges the Combined Code revised earlier in 2007 may not be appropriate for AIM companies and the NAPF Guidelines are intended to guide companies and shareholders on issues which it believes are important and whose practice may differ from the Combined Code.

The key issues considered by NAPF include disclosure standards, the combined roles of chairman and chief executive, composition of the Board and its subcommittees, remuneration arrangements, independence of directors and pre-emption rights.

NAPF acknowledged that disclosure standards set by the Combined Code may not necessarily be appropriate for smaller AIM companies. However, NAPF expects companies to disclose their corporate governance policies and as a minimum, to disclose directors' names, other directorships and biographical details; the names of the senior members of the board and its committees (where these committees exist) and the names of non-executive directors whom the board determines to be independent with reasons where necessary. These requirements are similar to the disclosure requirements under AIM Rule 26.

NAPF views the functions of the chairman and chief executive as different and that they should be clearly distinguished. However, it accepts that they could be pragmatic for an individual combining both these roles. If this happens, the AIM company must disclose its reasons for a combined role in its annual report and describe the selection process. NAPF requires the appointment of a senior independent director where a company has a combined chairman and chief executive, to ensure an independent voice on the board.

The NAPF AIM Policy supports the Combined Code principle of having at least two independent non-executive directors excluding the chairman for larger AIM boards. For smaller boards of no more than four directors, such boards might consist of the chairman, the chief executive and at most, two non-executive directors, of which one should be independent

On the issue of composition of audit, remuneration and nomination committees, the NAPF AIM Policy states that these committees should ideally comprise only independent non-executive directors, and there should be at least a majority of independent directors on all committees. While the chairman may be a member of the audit, remuneration or nomination committees, he must be independent and should not be chairman of those committees.

According to the NAPF AIM Policy, remuneration arrangements for companies should generally adhere to current best practice guidelines (Association of British Insurers and NAPF Remuneration Guidelines). A significant component of senior management's remuneration should be linked to performance and performance criteria should be disclosed.

Like the QCA Guidelines, the NAPF AIM Policy encourages all companies to use the criteria of independence defined in the 2007 Combined Code. However, some flexibility may be shown to AIM companies due to their particular circumstances. For example, a director's independence may be compromised if the director's shareholding exceeds 3% (the threshold is set at 1% for Official List companies).

The NAPF AIM Policy requires AIM companies to seek annual approval from shareholders when they wish to issue shares on a non pre-emptive basis. While it recognises there will more often be good reasons for waiving pre-emption rights among smaller companies, these companies should consult with their leading shareholders in advance and account for this decision in the subsequent Annual Report.

Case Study Analysis of AIM Companies' Corporate Governance Disclosure

We selected four AIM companies as mini case study examples to indicate the level of disclosure before and after the implementation of AIM's Rule 26 in February 2007. All four companies were listed on AIM for at least 10 years and operate in the mining industry sector. Two of them were incorporated in UK with the other two registered overseas. Three sources of information namely their 2005 and latest (2009 or 2010) available Annual Reports and their Rule 26 websites as at 2nd August 2011, were accessed to determine the extent of corporate governance disclosure using the 2010 QCA Guidelines as a benchmark. To preserve confidentiality, the four companies discussed are designated as Company A, Company B, Company C and Company D.

Company A, a UK incorporated company, was admitted to AIM 11 years ago. Its principal activity is in the exploration and development of mineral projects. Its significant (more than 3%) institutional shareholdings totalled 13% in the 2005 Annual Report[8] compared with 32% as published in its 2010 Annual Report.[9] Both Annual Reports included a Corporate Governance Statement stating the Board seeks to comply with the UK Corporate Governance Code in so far as its recommendations are appropriate. As expected, the 2010 Annual Report contained extra sections including the Board's role and conflicts of interest. There was more information provided in the biographical details of members of the board such as their photographs, their work experience and directorships held in other companies. The company's board consists of the same executive chairman and two non-executive directors as it did in 2005. The reasons cited for the non-executive directors' independence were the same under both Annual Reports. There was information provided about the executive chairman's remuneration scheme in the 2010 Annual Report, this being absent in the earlier 2005 Annual Report. Company A's Rule 26 website which was last updated on 22 March 2011, complied with all the information required to be disclosed by the LSE. In addition, the website included the Annual Reports going back to 2007, and a 15 min delay stock trading information. Company B's business activity is gold mining and it was incorporated

[8] Company A's AIM Rule 26 website.

[9] Company A's AIM Rule 26 website.

in the UK 10 years ago. Its 2005 Annual Report[10] indicated that 53% of its shares were owned by institutional shareholders, with a slight increase to 55% in its 2009 Annual Report.[11] A Corporate Governance Statement was included in both Annual Reports, stating that the directors seek as far as is considered appropriate to comply with the UK Corporate Governance Code. There were five directors on its board for both years too. Its board was headed by a CEO in 2005 and by a Chairman 5 years later. There were three non-executive directors in 2009, one more than in 2005. The 2005 Annual Report mentions the setting up of an Independent Committee comprising the two non-executive directors. However, it does not define what the term 'independent' means. Its directors' remuneration details were disclosed in 2009 but not in its 2005 Annual Report. Its AIM Rule 26 website makes available all the information required under that Rule. Additionally, it allows access to all its Annual and Interim Reports as far back as and including the 2000 Annual Report.

Company C was incorporated in the Republic of Ireland 10 years ago. It is a natural resource company engaged in mineral exploration and development. Six percent of its shares were shown in its 2005 Annual Report[12] to be owned by institutional shareholders, much lower than the 35% disclosed in its 2010 Annual Report.[13] There were nine directors on its board in 2010, an increase of two directors from its 2005 board. Although there were four non-executive directors on its board in 2005, there was no mention whether they were independent or not. Also, the 2005 Annual Report did not include a Corporate Governance Statement, which was found in its 2010 Annual Report. Two different directors performed the role of chairman and managing director both in 2005 and 2010. The 2010 Annual Report now included a Corporate Governance Statement, disclosed biographical details of individual board directors and described the responsibilities of the remuneration and audit committees, this information was not disclosed in the 2005 Annual Report. Interestingly, the 2010 Annual Report did not disclose whether any of the six non-executive directors were deemed independent nor about the board's consideration of independence. As expected, the AIM Rule 26 website showed the company complying with all the requirements under this rule. In addition, the website provides Annual and Interim Reports dating back to 2000. It also has a weblink to LSE's data on its current stock price (15 min real time delay).

Company D is a mining company incorporated in Bermuda. It joined AIM in 1997 and disclosed that 34% of its shares were held by investment institutions in its 2005 Annual Report,[14] higher than the 20% institutional shareholding reported in its 2010 Annual Report.[15] Its board in 2005 consists of four directors including a chairman and biographical details including directorships in other companies were

[10] Company B's AIM Rule 26 website.
[11] Company B's AIM Rule 26 website.
[12] Company C's AIM Rule 26 website.
[13] Company C's AIM Rule 26 website.
[14] Company D's AIM Rule 26 website.
[15] Company D's AIM Rule 26 website.

disclosed. However, although the Corporate Governance Statement in the annual report mentioned that the Board included a number of non-executive directors, the directors' biographical details did not identify which directors held a non-executive role. There was also no audit or remuneration committee mentioned either in the 2005 and 2010 Annual Reports. Equally, the 2010 Annual Report disclosed the board's composition and also the role of each director which was the same as in 5 years earlier. The company's AIM Rule 26 website indicated that it had complied with this Rule requirement. In addition, it made available all its Annual Reports going back to 1998 inclusive.

Discussion of Case Study Analysis

To sum up, all four companies reported in their 2010 Annual Report that on the whole, institutional investors owned at least 20% of their shares which suggests in their own interest, support the compliance with the 2010 QCA Guidelines. From a corporate governance disclosure perspective, both in 2005 and 2010, Companies A and B, both of which are incorporated in the UK, disclosed more information about their corporate governance compared with Companies C and D, their non-UK incorporated counterparts. For example, while both Companies A and B published a Corporate Governance Statement in their Annual Reports, Company C did not. While Company D had included a Corporate Governance Statement in its 2005 and 2010 Annual Reports, it did not identify the non-executive directors on its board.

Secondly, three of the four companies in this case study analysis showed a higher level of corporate governance disclosure in 2010 than in 2005. Company A added biographical details about their board members and other directorships held by them; Company B disclosed directors' remuneration details; and Company C added a Corporate Governance Statement. However Company D's Annual Report in 2010 did not disclose more about its corporate governance than in its 2005 Annual Report.

Finally, two of the four companies (Companies B and C) did not describe what the term 'independent' means in relation to the role of their non-executive directors, while a third (Company D) did not identify non-executive directors on its board. This suggests that these AIM companies comply with the best practice guidelines in so far as it is commercially justified having regard to the size and nature of the company's activities. All four sample companies fully complied with the requirements of AIM Rule 26. Non-compliance may have attracted the attention of the LSE which may impose disciplinary action against both the company and its NOMAD for breach of this rule. This suggests that AIM companies tend to comply more fully when they are aware that disciplinary action may be imposed for non-compliance whereas they seem less inclined to comply more fully with recommendations where non-compliance does not result in disciplinary action for example, best practice corporate governance recommendations.

Table 6.5 Market capitalisation and Number of companies with shares traded on 'junior' exchanges as of December 2010

Exchange	Name of market	Market cap. (US$m)	No. of companies domestic	No. of companies foreign	No. of companies total
UK : London SE group	AIM	123,498.5	967	228	**1,195**
Germany: Deutsche Borse	Entry standard	17,419.5	117	12	**129**
USA: NYSE Euronext (Europe)	Alternext	6,735.1	144	11	**155**
Spain: BME Spanish exchanges	MAB expansion	383.3	12	0	**12**
Italy: Borsa Italiana	AIM Italia	478.4	11	0	**11**
Ireland: Irish SE	Irish enterprise	2,880.7	22	1	**23**
USA: NASDAQ OMX Nordic exchange	First North	3,401.8	120	4	**124**
Canada: Toronto TSX group	TSX ventures	72,509.9	2,376	0	**2,376**
Hong Kong: Hong Kong exchanges	Growth enterprise	17,324.3	169	0	**169**
Korea: Korea exchange	KOSDAQ	84,441.3	1,016	13	**1,029**
Singapore: Singapore exchange	SGX catalist	5,087.1	97	36	**133**
Tokyo: Tokyo SE group	Mothers	16,167.6	179	2	**181**

Source: World Federation of Exchanges

Junior Stock Exchanges Globally

The AIM is just one of a number of junior (or second tier) stock exchanges around the world. The World Federation of Stock Exchanges (2011) data indicates the market capitalisation of the junior exchanges expressed in US$ million.

At the end of December 2010 AIM far outstrips its rivals with a total market capitalisation of US$ 123,498.5 million, the nearest market to this is Korea's KOSDAQ with a market capitalisation of US$ 84,441.3 million, followed by TSX Ventures (Toronto) with a market capitalisation of US$ 72509.9 million.

As can also be seen from Table 6.5, at the end of 2010 the junior exchanges with the most companies listed were AIM and TSX Ventures (Toronto) with a total of 1,195 and 2,376 companies listed respectively. Korea's KOSDAQ is third with 1,029 companies listed. However what makes AIM stand out is the number of foreign companies listed as 228 out of the total of 1,195 companies were foreign companies. TSX Ventures had no foreign companies listed; KOSDAQ had 13 foreign companies listed and the nearest 'rival' to AIM in terms of foreign listings was Singapore's SESDAQ with 36 foreign companies listed (out of a total number of 133).

Grant Thornton (2007) Global Growth Markets Guide analysed the merits of the 41 stock markets competing to list growth company stocks; it analysed in greater

detail those which had been in existence for at least 4 years, had more than 150 companies listed and a market capitalisation in excess of US$2 billion. The Guide highlights that 'AIM's success in attracting high numbers of IPOs during 2006 helped it grow its average number of listed companies by over 300 and to raise more funds (over $29bn) than all global growth markets combined'.

Whilst analysing 41 growth markets worldwide (19 in Europe, 15 in Asia Pacific, three in Africa and four in the Americas), the Guide found that apart from AIM, competition for listings is only provided by a handful of markets, although these markets are gathering momentum.

Furthermore, the Guide states that 'In terms of growth in the average number oflisted entities, AIM's startling performance was unmatched by any other growth market, with marginal gains experienced by KOSDAQ, SESDAQ, the Mothers Market and Plus and small reductions by GEM and NASDAQ. In terms of fundraising, AIM was again the clear leader, raising more money that all other markets combined. Its performance was followed by NASDAQ ($17bn) and TSX-V ($7.1bn) which accounted for 26 and 12% of the total respectively. While GEM and SESDAQ also experienced growth in fundraising levels, the Mothers Market raised less than half the funds it did the previous year.'

AIM Goes Global

An interesting development which is indicative of the success of AIM is the recent introduction of AIM Italia and Tokyo AIM. Both markets utilise the original AIM concept of a NOMAD (nominated advisor) to guide a company through coming to the market and to provide ongoing advice on regulatory and other aspects including corporate governance.

The advantages for AIM Italia and Tokyo AIM are: builds on the established international reputation of the London Stock Exchange's AIM; opens up access to an established successful market for small and medium sized enterprises (SMEs); gives access to a network of institutional investors, a number of whom have specialist AIM investment funds; utilises the 'light touch' approach combined with a NOMAD which is a tried and tested regulatory model; international visibility; provides advantages for companies coming to market in terms of time and cost savings; and gives the credibility associated with a well-established successful market.

AIM Italia

The rules governing AIM Italia, while mirroring the main features of the London Stock Exchange's AIM, have been specifically tailored to suit the Italian economic and business landscape.

AIM Italia is designated as a Multilateral Trading Facility (MTF) rather than a stock exchange; it is a market regulated by Borsa Italiana and therefore not

Table 6.6 Companies on AIM Italia at end September 2011

Company	Description
IKF	Investing company based in Milan, willing to invest in SMEs, mainly Italian companies
Neurosoft	Software company which operates primarily in Greece. Three core business: sports betting and gaming, business intelligence and core factoring
Vrway	Realizes, designs and publishes virtual reality images. Sells virtual tour services to organizations in tourism, environment and cultural sectors
TBS group	Provision of outsourced and integrated management and maintenance services for all systems and technologies in the health field
PMS	Strategic consulting on corporate and financial communication, relationship with media, corporate image and market research
Poligrafici printing	Industrial printing maker: polygraph to print daily newspaper, graphic to print magazine, free press, folder, commercial brochure and catalogues
Fintel	Active in electric power and natural gas sale and in the development and exploitation of plants for the production of renewable energy
Methorios capital	Independent corporate finance advisor in M&A, listing, capital raising and debt restructuring
Vita	Publishing company focused on not for profit sector
First capital	Private Investments in Public Equity (PIPE) focused on SMEs
Unione Alberghi Italiano	Investment company investing in hotel

subject to supervision by the Control Authority. Therefore a company joining AIM Italia is not required to publish an information prospectus complying with the EU reporting directive. As with the UK AIM companies, following admission, the company's market operations are guided by a NOMAD. For AIM Italia, the NOMAD is accountable to, and regulated by, Borsa Italiana.

AIM Italia opened on 1 December 2008 and as at the end of September 2011, there are just 11 companies. The only foreign companies are Neurosoft and Vrway. Table 6.6 shows the composition of AIM Italia and the activities of the companies.

AIM Italia's regulatory framework is based on two main rulebooks: *AIM Italia Rules for Companies* and *AIM Italia Rules for Nominated Adviser*s. The former document details the various rules including that to be eligible for admission, a company must appoint a nominated advisor and following admission must retain the nominated advisor at all times. Should a company on AIM Italia cease to have a nominated advisor, then Borsa Italia will suspend trading in its AIM Italia securities; and if within 2 months of being suspended, the company still does not have a nominated advisor, then the admission of the AIM Italia securities will be cancelled. The latter document details the various responsibilities of the nominated advisor.

Tokyo AIM

Tokyo AIM is not yet as established as AIM Italia. Tokyo AIM are working on establishing their list of J-Nomads and bringing companies to market. The first – and to date, only – company to be listed on Tokyo AIM is Mebiopharm Company

Ltd, a Japanese biotechnology firm involved in the development of medicines, which joined AIM in July 2011.

The term 'J-Nomad' is the Japanese Nominated Adviser. Tokyo AIM, like the UK AIM and AIM Italia, emphasise the important and central role of the Nomad to the AIM listing process: 'J-Nomads are appointed by companies wishing to list on TOKYO AIM. They assess and confirm the overall appropriateness and suitability of companies to list on the market whilst managing that listing process. Once a company has been admitted to the market, a J-Nomad must be retained at all times to ensure that the company fulfils its ongoing obligations... The J-Nomad system is integral to the TOKYO AIM model. Should a TOKYO AIM company cease to have a J-Nomad at any time, the Exchange will place the company on the Watch List. If the company is unable to appoint a replacement J-Nomad within a set period of time it will be de-listed from the market' (Tokyo AIM website).

Tokyo AIM also emphasise the benefits for companies coming to the Tokyo AIM. These include a tailored regulatory model; simplified listing process; reduced costs; flexible structure; international outlook; professional investor base; and the brand/ reputation of both the London Stock Exchange and the Tokyo Stock Exchange.

Conclusions

AIM is a fast-growing and important market in the UK. It has proved to be attractive to both UK and overseas companies seeking a London listing. The review of the growth of AIM in this chapter has highlighted its phenomenal success over the years in attracting both UK and overseas companies to join it. The LSE has also exported the AIM model and we discuss the importance of AIM's new ventures with AIM Italia and Tokyo AIM.

The NOMAD is central to the success of AIM with its lighter touch regulation. Part of the NOMAD's role is to provide advice to their AIM companies on corporate governance and other matters. Corporate governance and ethical issues may arise where the corporate governance structure of AIM companies is less robust than that of companies listed on the main market, either because of the knowledge and resources required to build a sound corporate governance structure or because of the poorer corporate governance of some of the overseas companies admitted to AIM where their home country may have less stringent corporate governance requirements than in the UK. AIM companies often rely on their NOMAD for advice about corporate governance requirements and how they should ensure an appropriate corporate governance structure in their companies, and hence the role of the NOMAD may play a key role in ensuring that AIM companies have good governance and sound ethics.

The three main sources of corporate governance guidelines for AIM companies come from the AIM Rules, the QCA Guidelines and the NAPF Corporate Governance and Voting Guidelines for AIM Companies. The AIM Rules do not require

adherence to a set of corporate governance rules. Instead, AIM expects NOMADs to work with their AIM client companies to comply with corporate governance standards commensurate with their size, stage of development, jurisdiction and business sector. AIM companies are not expected to adhere in full to the UK Corporate Governance Code, only that the Code serves as a standard for them to aspire to. Among the AIM Rules is Rule 26 which requires AIM companies, from August 2007, onwards to provide free key corporate information (for example, a description of its business, where it is incorporated and its main country of operation, the names of its directors and brief biographical details, its most recent annual report published pursuant to rule 19 and all notifications the AIM company has made in the past 12 months) on their company website. The 2010 QCA Guidelines embraces the principles of corporate governance found in the new UK Corporate Governance Code but tailored appropriately to smaller AIM companies. The QCA Guidelines advocates four key corporate governance elements and recommends 12 guidelines for good corporate governance practice. The NAPF AIM Policy issued in 2007, is intended to guide AIM companies and their shareholders on issues which it deems important and where practice may differ from the Combined Code.

AIM's unique system with NOMADs acting as corporate governance monitors on admission on behalf of the LSE and providing an on-going oversight of their AIM client companies has hitherto made it successful and its model has been copied by other stock exchanges. However, as NOMADs are incentivised by the fees receivable from their AIM client companies, the LSE must constantly supervise to ensure the 'self-regulation system' operates properly.

AIM has so far shown remarkable resilience in adapting to changing market conditions, thus making it a dominant exchange in the market for small, high growth companies. Despite the success in exporting its regulatory model to other exchanges, AIM now faces increasing competition from other junior stock exchanges. To continue its success, AIM must regularly update its rules to fit market pressures and increase the number and quality of its international companies.

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Chapter 7
Controlling Shareholders' Fiduciary Duties Owed to Minority Shareholders – A Comparative Approach: The United States and France

Celine Gainet

Introduction

> When asked what the shares in his company were worth, a prominent newspaperman replied, "There are 51 shares that are worth $ 250,000 and there are 49 shares that are not worth a. . .." John H. Doyle from a speech delivered before the Ohio State Bar Association in 1893 quoted in Humphrys v. Winous Co., 165 Ohio St. 45, 50, 133 N. E.2d 780, 783 (1956).

The corporate governance framework "describes whom the organization is there to serve and how the purposes and priorities of the organization should be decided" (Johnson and Scholes 2002). Under the capitalist model, the imbalance of power in corporate governance is inherent and favors the majority whenever there is one (American Law Institute 2011). Minority shareholders are, however, extremely susceptible to the majority's abuse of control. The majority allows minority shareholders to participate in the decision making process "purely at the grace or acquiescence of the majority." (O'Neal and Thompson 1993) Consequently, under the guise of a shareholders' vote, majority shareholders dictate the direction of a corporation. Traditionally shareholders have been thought to have far more limited fiduciary duties than corporate officers and directors (Anabtawi and Stout 2008). Recognizing the potential for abuse, state legislatures have promulgated laws and most courts impose a fiduciary duty on majority shareholders of corporations to protect the interests of minority shareholders (Fletcher 2011).

Besides majority shareholders, other shareholders may control or attempt to control the corporation, depending of the circumstances, mainly by exercising power over a *de facto* majority to be subject to fiduciary duties (Anabtawi and Stout 2008). Regulation and case law are less clear on what the duties of those controlling shareholders are. Although they should be similar to the ones of majority shareholders, regulation and

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case law tend to retain a narrow definition of controlling shareholders by mainly considering that only majority shareholders have fiduciary duties.

Today, in the US and abroad, there are divergences on what the definition of controlling shareholders should be and how extensive those fiduciary duties are.

This Chapter aims to analyze whether this balance is achieved in theory and in practice in two distinct legal systems: the US common law legal system and the French civil law legal system.

According to Wymeersch (2001), when "looking for complementary forces of harmonization, one can confidently point out that international capital markets powerfully drive the homogenization of governance structures in company law. Opinion leaders in this respect are, most often, institutional investors from the United States." Despite this convergence of the theoretical and business-oriented proposals, empirical evidence on Western countries suggests contrasting situations. Broadly, two models could be distinguished: the Anglo-Saxon version of capitalism, and on the other hand, the continental European model (Crane and Matten 2004).

The Anglo-Saxon model focuses on the stock market as the central element of the system of governance. Most of the larger, publicly owned companies' source their capital there, and in these countries, shareholding is largely in the hands of smaller shareholders with the result that shares are broadly dispersed (Becht and Roell 1999).

In the continental European model of capitalism, corporations tend to be embedded in a network of a small number of large investors, among which banks play a major role. Within this network of mutually interlocking owners, the central focus is the long-term preservation of influence and power. For the purpose of sourcing capital, banks and their loans, rather than the stock market, are still of major importance for continental European corporations (Becht and Roell 1999; Morck 2000; Gilson 2006; Enriques and Volpin 2007).[1]

In these contexts, this Chapter suggests controlling shareholders' fiduciary duties owed to minority shareholders should balance controlling shareholders' rights in the Anglo-Saxon and the Continental European model of capitalism. As there tend to be more controlling shareholders in the Continental European model of capitalism, with greater rights, controlling shareholders in these legal systems should also own higher duties to minority shareholders. Whereas this seems to be the case in theory, the conclusion needs to be mitigated when looking at the enforcement rules and case law.

Part I of the chapter begins by briefly surveying US and French corporate law rules of controlling shareholders' fiduciary duties. The US and French systems use different concepts to achieve a balance between controlling shareholders' rights and duties. Even though the US governance law does influence French governance law, major difference remains.

[1] According to indicators of ownership concentration reported by Enriques and Volpin (2007) for the 20 largest listed companies at the end of 1995 in France, Germany, Italy, the United Kingdom and the United States, the empirical evidence shows that dispersed share ownership is prevalent only in two countries, the US and the UK.

Part II discusses how controlling shareholders' fiduciary duties are enforced. This is certainly where the US system is the most different from the French system. Although in theory, minority shareholders have a certain number of ways to enforce their rights, in practice, they tend to be costly and not so frequently used.

Controlling Shareholders' Fiduciary Duties

Where shareholders are not passive and use of their power to exercise some kinds of control on corporations, duties should come to limit their power. Different legal systems may adopt different standard to limit shareholders' power, but to the extent shareholders are increasingly powerful, it is difficult to conceive that shareholders have no duties at all towards the corporation and their fellow shareholders. Controlling shareholders' fiduciary duties in the US legal system are presented and put in perspective with controlling shareholders' fiduciary duties in the French legal system.

The US Fiduciary Duties

Shareholders' fiduciary duties are hardly addressed by corporate codes. Nonetheless, courts have considered them for years.[2] The definition of controlling shareholders varies from a state to another as well as what fiduciary duties they should comply with.

Shareholders' Fiduciary Duties Left Out by the Corporate Codes

As Art (2003) pointed out, one would expect that corporate codes would establish the principles determining duties of shareholders, in the same way that they specify the duties of directors and officers. In reality, corporate codes tend to have little concern for shareholders' duties. For instance, both the Delaware General Corporation Law ("DGCL") and the Model Business Corporation Act ("MBCA") makes no mention at all of the "fiduciary duty" theory or its underlying concepts with regards to shareholders.

In the DGCL, only two sections make a reference to potential conflict of interests between the corporation and its shareholders: §203 as well as §245 that refers to §203.[3]

[2] See e.g. *Dodge v. Ford Motor Company*, 204 Mich. 459, 170 N.W. 668. (Mich. 1919).

[3] Delaware Code, Title 8 Corporations, Chapter 1 – General Corporation Law, §203.

Section 203 limits transactions between the corporation and interested shareholders. It provides that "corporation shall not engage in any business combination with any interested stockholder for a period of 3 years following the time that such stockholder became an interested stockholder" and lists several categories of qualifying transactions that might be employed to increase a shareholder's proportionate interest in the company. The statute provides the definitions of "control" and "interested shareholders". It defines "control" extensively, specifying that control is "possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a person, whether through the ownership of voting stock, by contract or otherwise. A person who is the owner of 20% or more of the outstanding voting stock of any corporation, partnership, unincorporated association or other entity shall be presumed to have control of such entity, in the absence of proof by a preponderance of the evidence to the contrary (. . .)."[4] An interested shareholder is "any person (other than the corporation and any direct or indirect majority- owned subsidiary of the corporation) that (i) is the owner of 15% or more of the outstanding voting stock of the corporation, or (ii) is an affiliate or associate of the corporation and was the owner of 15% or more of the outstanding voting stock of the corporation at any time within the 3-year period immediately prior to the date on which it is sought to be determined whether such person is an interested stockholder, and the affiliates and associates of such person (. . .)".[5] The statute continues with a set of exception to this definition. Although both of these definitions could be quite interestingly used in an encompassing approach of controlling shareholders' fiduciary duties, none of them are. Some scholars, such as Thompson (2008), call for a Delaware corporation code that would better address shareholders' powers and responsibilities. Although I believe DGCL addresses shareholders' powers[6] quite well in comparison to their duties, the requested revision of the DGCL should certainly include controlling shareholders' fiduciary duties. Hamermesh (2008), while commenting on Thompson's article (2008), notice that "this is a most interesting challenge, given the well recognized conservative tendency in Delaware corporate law to allow evolution more through judicial decisions than through statutory definition."[7] Nonetheless, the DGCL, at least partially, addresses directors' fiduciary duties. Hence, it could be reasonably considered that the DGCL could similarly address controlling shareholders' fiduciary duties.

[4] Delaware Code, Title 8 Corporations, Chapter 1 – General Corporation Law, §203 (c) (4).

[5] Delaware Code, Title 8 Corporations, Chapter 1 – General Corporation Law, §203 (c) (5).

[6] See e.g. Delaware Code, Title 8 Corporations, Chapter 1 – General Corporation Law, §121.

[7] *See, e.g.*, Hamermesh (2006): "Delaware corporate lawmakers embrace the idea that legal issues that depend for their resolution on complex facts cannot and should not be reduced to black letter codification." As for Kahan and Rock (2005), they noted a preference for "incremental legislation".

Similarly to the DGCL, the MBCA does not include a fiduciary theory relating to shareholders. One connection between shareholder dissension case law and the statute is in a remedies section, authorizing judicial dissolution if "the directors or those in control of the corporation have acted, are acting, or will act in a manner that is illegal, oppressive, or fraudulent".[8] "Those in control" and "oppressive" are not defined in the statute. Another connection is in the right of appraisal section, which deal with controlling shareholders who may have conflicting interests that could, if not dealt with appropriately, adversely affect the shares' consideration that otherwise could have been expected.[9] For the purpose of this section only, shareholders are considered controlling by virtue of ownership of a substantial amount of voting stock (20%)[10] or ability to exercise control, through contract, stock ownership, or some other means, over at least one fourth of the board's membership.[11]

Overall, the Delaware General Corporation Law and the MBCA is more concerned by shareholders' rights than shareholders' duties, which have been developed by case law. Fiduciary duties basically apply to officers and directors, but, to the extent that a shareholder holds the power to control the corporation, courts have shown some willingness to apply these duties to such a shareholder as well (Fletcher 2011, §5811, 151–153).

The next issue is to understand whom courts have considered controlling shareholders.

Defining Controlling Shareholders

State courts usually agree that controlling shareholders owe fiduciary duties but a debate exists between them as to what extent controlling shareholders owe fiduciary duties. As more that 60% of US corporations, including the largest ones, are incorporated in Delaware, this Chapter focuses on Delaware case law.

Anabtawi and Stout (2008) pointed out that, under Delaware case law, the "archetypal "controlling" shareholder" remains "a shareholder who own more than 50% of the company's outstanding shares" in particular "because shareholders generally elect and remove directors by a majority vote."[12] Where a shareholder

[8] MBCA, Section 14.30 (2) (2007)

[9] MBCA, Section 13.02(b)(4) (2007)

[10] MBCA, Section 13.02(b)(4)(i) (A) (2007)

[11] MBCA, Section 13.02(b)(4)(i) (B) (2007)

[12] Delaware Code, Title 8 Corporations, Chapter 1 – General Corporation Law, §§211 (b), 141 (k), (2005).

does not own a majority of the corporation's share, the court will look at whether this shareholder has exercised actual domination and control of the corporation. In *re PNB Holding Co. S'holders Litig*.,, a controlling shareholder is defined as one who "(1) owns more than 50% of the voting power of the corporation; or (2) exercises control over the business and affairs of the corporation."[13] Based on this definition provided, it could seem that any shareholder can be considered a "controlling shareholder" depending of the circumstances. This is certainly not the case under Delaware case law. In *re PNB Holding Co. S'holders Litig*., the court continues with a more specific definition of what 'exercising control over the business and affaires of the corporation' means. According to the court, "the second test exists to allow the law to impose fiduciary obligations on stockholders who, although lacking a clear majority, have such formidable voting and managerial power that they, as a practical matter, are no differently situated than if they had majority voting control."[14] Hence, Delaware state courts have drawn a narrow definition of 'controlling shareholders' by setting a high standard review for a non-majority shareholder. To be considered a controlling shareholder, he or she should hold "formidable" power to compensate a lack of "clear" majority. This restrictive definition of 'controlling shareholder' can be found in a number of cases. For instance, in *Tomczak v. Morton Thiokol, Inc*., the court held that a share-ownership of 8.23% did not approach the threshold of control of the corporation and accordingly, the shareholder did not owe any fiduciary duties to the remaining shareholders.[15] Also, in *Ivanhoe Partners v. Newmont Mining Corp*., the court held that "a shareholder owes a fiduciary duty only if it owns a majority interest or exercises control over the business affairs of the corporation" and concluded that a 26% shareholder "owed no fiduciary duty to the other shareholders".[16]

As pointed out by Anabtawi and Stout (2008), "when a shareholder has a less than 50% stake, courts tend to engage in cautious, detailed factual analysis of whether that particular shareholder, individually or together with associates, owns enough shares to give the shareholder clear voting power to replace the board of directors". For example, in one case, the Delaware Supreme Court held that a 43%

[13] In re PNB Holding Co. S'holders Litig., No. Civ. A. 28-N, 2006 WL 2403999, (Del.Ch. Aug. 18, 2006) (citing Kahn v. Lynch Commc'n. Sys. Inc., 638 A.2d 1110, 1113–1114 (Del.1994)).

See also *Kaplan v. Centex Corp*., 284 A.2d 119, 123 (Del. Ch. 1971); *Siegman v. Tri-Star Pictures, Inc*., C.A. No. 9477 (Del. Ch. May 5, 1989, *revised* May 30, 1989), at 8 ("For a shareholder to occupy the status of a fiduciary, it must either have majority stock control or exercise actual domination and control over the corporation's business affairs."); *Citron v. Fairchild Camera & Instrument Corp*., 569 A.2d 53, 70 (Del. 1989) ("For a dominating relationship to exist in the absence of controlling stock ownership, a plaintiff must allege domination by a minority shareholder through actual control of corporate conduct.").

[14] In re PNB Holding Co. S'holders Litig., No. Civ. A. 28-N, 2006 WL 2403999, (Del.Ch. Aug. 18, 2006) (citing Kahn v. Lynch Commc'n. Sys. Inc., 638 A.2d 1110, 1113–1114 (Del.1994)).

[15] *Tomczak v. Morton Thiokol, Inc*., C.A. No. 7861 (Del. Ch. Apr. 5, 1990), slip op. at 40. See also Balotti and Finkelstein (2010, Volume 1, Chapter 4, Part Two, §4.16).

[16] *Ivanhoe Partners v. Newmont Mining Corp.,* 535 A.2d 1334, 1344 (Del. 1987).

holder effectively exercised control,[17] while in another the Court held that a 47% holder did not necessarily have control without some particularized facts showing domination.[18]

The Delaware case law indicates that "when a shareholder does not control an absolute majority of the votes of a corporation, it must exercise power over a *de facto* majority to be subject to fiduciary duties" (Anabtawi and Stout 2008).

[17] *Kahn v. Lynch Commc'n Sys., Inc.,* 638 A.2d 1110, 1113 (Del. 1994). The Delaware Supreme Court used a cautious approach in "analyzing whether Alcatel, the minority shareholder alleged to be controlling in that case, "did exercise actual control over Lynch by dominating its corporate affairs." (at 1115). The Court concluded that Alcatel, which owned more than 43% of Lynch, did "dominate" Lynch because it was able to substitute its own judgment for that of the Lynch board (at 1113–1114). As evidence, the court quoted an Alcatel-nominated director's admonition to Lynch's other board members: "You must listen to us. We are [sic] 43% owner. You have to do what we tell you" (at 1114). "The court took such statements, together with evidence that the board's independent directors voted with Alcatel's directors, to uphold the lower court's finding that Alcatel exercised actual control over Lynch and dominated its corporate affairs" (at 1114–1115) (Anabtawi and Stout 2008).

See also *In re Cysive, Inc. Shareholders Litigation,* 836 A. 2d 531 (Del. 2003) in which Nelson Carbonell owned approximately 35% of Cysive, Inc., a publicly traded company. When associates' holdings and options to purchase additional stock were taken into account, Carbonell controlled as much as 40% of Cysive's voting equity. In deciding whether this made Carbonell the "controlling" shareholder of Cysive, the Delaware Chancellor focused on Carbonell's ability, should he became disenchanted with Cysive's directors, to elect a new board "without having to attract much, if any, support from public stockholders" (at 552). The Chancellor emphasized that "100% turn-out is unlikely even in a contested election" (at 552 n30), and that "a 40% block is very potent in view of that reality" (at 552 n30). (Anabtawi and Stout 2008). The Chancellor determined that "Carbonell is a controlling stockholder" and concluded his analysis by holding that "the analysis of whether a controlling stockholder exists must take into account whether the stockholder, as a practical matter, possesses a combination of stock voting power and managerial authority that enables him to control the corporation, if he so wishes. Carbonell has that capability and would be perceived as having such capability by rational independent directors, public stockholders, and other market participants."

[18] *Aronson v. Lewis*, 473 A.2d 805, 815 (Del. 1984);

See also *In re W. Nat'l Corp. S'holders Litig*., C.A. No. 15927 (Del. Ch. May 22, 2000), slip op. at 15–16 (finding a 46% shareholder not controlling because the possibility that it could obtain a majority of the company's shares on the open market was not enough and because a standstill provision limited it to nominating only two directors);

Gilbert v. El Paso Co., 490 A.2d 1050, 1055 (Del. Ch. 1984) ("[A] shareholder who owns less than 50% of a corporation's outstanding stocks does not, without more, become a controlling shareholder of that corporation, with a concomitant fiduciary duty status.");

Superior Vision Servs., Inc. v. ReliaStar Life Ins. Co., C.A. No. 1668-N (Del. Ch. Aug. 25, 2006), slip op. at 12 (holding that an allegation that a shareholder has a "contractual right that allows it to prevent implementation of the corporate dividend policy adopted by the Board," without more, is insufficient to allege that it is a controlling shareholder);

In re PNB Holding Co. S'holders Litig., C.A. No. 28-N (Del. Ch. Aug. 18, 2006), slip op. at 20–22 (holding that a group of directors owning, collectively, 33.5% of the company's shares did not make up a controlling-shareholder group where the group did not have voting agreements and each had incentive to act in his or her own self-interest).

It then becomes necessary to understand whether courts analyze '*de facto* majority' globally or on a context-specific basis. Case law is relatively ambiguous on this issue. A certain number of cases consider that "allegations of control over the particular transaction at issue are enough."[19] This would mean that a shareholder could be deemed controlling over one transaction and not another. Supporting this view, certain courts do seem to engage in an analysis highly specific to the transaction at hand. In particular, *In Kahn v. Lynch Communications Systems, Inc,*[20] the Supreme Court of Delaware insisted on the fact that its analysis of the shareholders' controlling issue was specific to "the testimony and the minutes of the August 1, 1986 Lynch board meeting."[21] Similarly, *In re Primedia Inc. Derivative Litig.*,[22] the court considered the discussions between the potential controlling shareholder and the other shareholders as well as the course of dealing for the specific transactions.[23]

Nonetheless, it is unlikely that those contextual elements would have been by themselves enough for those shareholders to be considered controlling without a high percentage of share ownership and a corporate governance structure controlled by the defendant shareholder. In fact, because case law focuses on voting powers, the corporate governance structure, and sets a high standard review for "actual control", courts' analysis tend to assess shareholders' control globally rather than consider it in function of its context. For instance, to decide whether a defendant is a controlling shareholder, courts consider, among other criteria, the number of

[19] *In re Primedia Inc. Derivative Litig.*, 910 A.2d 248, 257 (Del. Ch. Nov. 15, 2006).

See also *In Kahn v. Lynch Communications Systems, Inc.* 638 A.2d, at 1114–1115 (Del. 1994): "the Vice Chancellor concluded: . . . Alcatel did control the Lynch board, at least with respect to the matters under consideration at its August 1, 1986 board meeting.";

In re Western Nat'l Corp. S'holders Litig., 2000 WL 710192, at *20 (Del.Ch. May 22, 2000): "[A] significant stockholder that does not, as a general matter, exercise actual control over the investee's business and affairs or over the investee's board of directors but does, in fact, exercise actual control over the board of directors during the course of a particular transaction, can assume fiduciary duties for purposes of that transaction.";

Williamson v. Cox Communications, Inc., 2006 WL 1586375 (Del.Ch. June 5, 2006): "It is not necessary, however, for plaintiff to plead actual control by Cox and Comcast over the day-to-day operations of At Home. Plaintiff can survive the motion to dismiss by alleging actual control with regard to the particular transaction that is being challenged".

[20] *In Kahn v. Lynch Communications Systems, Inc.* 638 A.2d, (Del. 1994).

[21] *In Kahn v. Lynch Communications Systems, Inc.* 638 A.2d, at 1114–1115 (Del. 1994): "Based upon the testimony and the minutes of the August 1, 1986 Lynch board meeting, the Court of Chancery concluded that Alcatel did exercise control over Lynch's business decisions." Also: ". . .Alcatel did control the Lynch board, at least with respect to the matters under consideration at its August 1, 1986 board meeting".

[22] *In re Primedia Inc. Derivative Litig.*, 910 A.2d 248, 257 (Del. Ch. Nov. 15, 2006).

[23] *In re Primedia Inc. Derivative Litig.*, 910 A.2d 248, 257 (Del. Ch. Nov. 15, 2006): "the discussions of KKR's contained in Primedia's SEC filings indicate that KKR was the influential force behind the stock redemptions." Also: "the course of dealing present here suggests that KKR enjoyed actual control over the stock redemptions".

affiliates the defendant appointed on the corporation's board,[24] an issue more likely to be general rather than context specific.

As analyzed by Anabtawi and Stout (2008), "the conventional approach to shareholder fiduciary duties accordingly seem to frame the issue of shareholder control in terms of whether a particular shareholder *has absolute control over all corporate conduct as a routine matter*. The inquiry is not issue-specific". And this remains the case even though certain courts claim that "allegations of control over the particular transaction at issue are enough"[25] and others that the question of whether shareholders are "controlling" should not focus on mathematical calculations but, instead, should focus on whether they have the power to work their will on others and whether they have done so improperly.[26]

Instead of the limited approach developed by case law, courts could extend their definition of 'controlling shareholder' by considering that any shareholder in a position to dictate to a corporation's business decision could be deemed "controlling" for this specific decision. As Anabtawi and Stout (2008) pointed out, cases[27] indicate that "controlling shareholders analysis, as currently performed, looks to whether a shareholder or group of affiliated shareholders owns enough voting shares to allow it to dictate membership on the board. This approach ignores entirely the possibility that shareholders with smaller stakes – that is, shareholders who do not have voting power clearly sufficient to determine who sits on the board of directors – might still be able to influence corporate officers or directors in less obvious ways (for example, by threatening a distracting and costly proxy fight, or an embarrassing media relations campaign). It also ignores the power that the marginal impact of a shareholder's vote can have on the outcome of a corporate decision" (Anabtawi and Stout 2008). As observed by Gordon (2008), managements are

[24] *In re Primedia Inc. Derivative Litig*., 910 A.2d 248, 257 (Del. Ch. Nov. 15, 2006): "the number of KKR associates on Primedia's board supports an inference of actual control. The fact that an allegedly controlling stockholder appointed its associates to the board of directors is certainly an important factor that provides a court with insight when evaluating whether actual control is pleaded adequately".

In re Western Nat'l Corp. S'holders Litig., 2000 WL 710192, at *20 (Del. Ch. May 22, 2000): "There also is no evidence to suggest that American General directly or indirectly participated, or was in any way involved, in the functioning of the Western National board of directors before the merger. In other words, to use the familiar language deployed in non-majority shareholder control inquiries, no evidence indicates that American General dominated the Western National board of directors".

Williamson v. Cox Communications, Inc., 2006 WL 1586375 (Del. Ch. June 5, 2006): "The fact that an allegedly controlling shareholder appointed its affiliates to the board of directors is one of many factors Delaware courts have considered in analyzing whether a shareholder is controlling. (...) The fact that Cox and Comcast nominated directors to the At Home board does not, without more, establish actual domination or control. (...) As discussed below, plaintiff also points to Cox and Comcast's (...) control over At Home board decisions."

[25] *In re Primedia Inc. Derivative Litig*., 910 A.2d 248, 257 (Del. Ch. Nov. 15, 2006).

[26] *Hollis v. Hill*, 232 F.3d 460 (5th Cir. 2000).

[27] *In re Cysive, Inc. Shareholders Litigation* 836 A.2d 531 (Del. 2003).
In Kahn v. Lynch Communications Systems, Inc. 638 A.2d 1110 (Del. 1994).

never happy to reject a recommendation that has substantial shareholder support. Hence, in response to the increase of shareholder powers, an extensive and context-specific definition of controlling shareholders would be more appropriate than the current approach, which drastically limits the definition of controlling shareholders.

Hence, a more rational approach would probably be where the circumstances surrounding the transitions or the votes dictate the degrees of fiduciary duty imposed by courts,[28] the controlling shareholders' intended effect constituting the breach.

Controlling Shareholders' Fiduciary Duties

The next issue is to know what fiduciaries duties controlling shareholders are responsible for. As officers and directors, controlling shareholders may owe a fiduciary duty of care, and loyalty to the minority shareholders and to the corporation. This principle has been established in the close corporation context as well as for publicly traded corporations.

The Duty of Care and the Business Judgment Rule

Anabtawi and Stout (2008) pointed out that "shareholders have been held, in some circumstances, to have a duty of care. In particular, a few cases have held that a controlling shareholder may breach its duty of care if it knowingly sells control of the corporations to a "looter" (that is, a controlling shareholder that plans to breach its duty of loyalty and expropriate corporate assets for itself)".[29]

For directors and officers, the duty of care is very limited by the business judgment rule. The business judgment rule is "usually described as a legal presumption that the directors and officers of the corporation have exercised due care by acting on an informed basis, in good faith, and in the honest belief that their actions are in the best interests of the corporation.[30] Unless a plaintiff can produce persuasive evidence rebutting one of these three elements, corporate directors and officers are effectively insulated from liability for breach of the duty of care" (Anabtawi and Stout 2008). The question is to know whether it applies to

[28] See Houlihan (1980) who wrote a note on the following case: *Linge v. Ralston Purina Co.* (Iowa 1980), 30 DRAKE L. REV. 679, 682. See also, O'neal and Thompson (1993) who argue that the degree of reliance and dependency should dictate the degree of fiduciary responsibility. See also Anabtawi and Stout (2008): "the shareholder control test should be context-specific, meaning it determines whether a shareholder is a controlling shareholder by referring to the role that the shareholder played with respect to a particular corporate decision".

[29] *Swinney v. Keebler Co.,* 480 F.2d 573, 577 (4th Cir. 1973); *Abraham v. Emerson Radio Corp.,* 901 A.2d 751, 762 (Del. Ch. 2006).

[30] *Smith v. Van Gorkum,* 488 A.2d 858 (Del. 1985). See generally Stout (2002) for a discussion on the business judgment rule.

controlling shareholders. Courts have not been consistent on this issue. *Sinclair Oil* used the business judgment rule to analyze a controlling shareholder's receiving improper dividends where the controlling shareholder did not receive a benefit causally related to the minority's detriment.[31] That analysis is quite different from the analysis in *Kahn v. Lynch Communication Systems*, which held that the "exclusive standard of judicial review in examining the propriety of an interested cash-out merger transaction by a controlling or dominating shareholder is entire fairness."[32] This tension in Delaware law is still being worked through by the courts, "the determination of the appropriate standard of judicial review [being] frequently determinative of the outcome of derivative litigation."[33] As a general rule, to the extent that it is more relevant to develop a fiduciary theory for controlling shareholders similar to the one developed for directors and officers, shareholders who do not have a personal economic stake in an outcome should benefit as directors and officers do of the protection of the business judgment rule. The shareholders' duty of care would then be minor compared to their duty of loyalty.[34]

[31] *Sinclair Oil Corp. v. Levien, 280 A.2d 717, 720, 722 (Del. 1971*); *see also Getty Oil Co. v. Skelly Oil Co*., 267 A.2d 883, 887 (Del. 1970) (holding that the business judgment rule applied where the parent got no benefit from its control over its subsidiary): "Since there is no proof of self-dealing on the part of Sinclair, it follows that the expansion policy of Sinclair and the methods used to achieve the desired result must, as far as Sinclair's treatment of Sinven is concerned, be tested by the standards of the business judgment rule. Accordingly, Sinclair's decision, absent fraud or gross overreaching, to achieve expansion through the medium of its subsidiaries, other than Sinven, must be upheld. Even if Sinclair was wrong in developing these opportunities as it did, the question arises, with which subsidiaries should these opportunities have been shared? No evidence indicates a unique need or ability of Sinven to develop these opportunities. The decision of which subsidiaries would be used to implement Sinclair's expansion policy was one of business judgment with which a court will not interfere absent a showing of gross and palpable overreaching. *Meyerson v. El Paso Natural Gas Co.,* 246 A.2d 789 (Del.Ch.1967)." at 11;

Meyerson v. El Paso Natural Gas Co., 246 A.2d 789, 794 (Del. Ch. 1967) (holding that the business judgment rule applied where the subsidiary did not suffer a detriment). But *cf. In re Primedia Inc. Derivative Litig*., 910 A.2d 248, 259–61 (Del. Ch. 2006) (refusing to apply the business judgment rule where the controlling shareholder received a benefit causally related to the detriment to the minority: "on the facts alleged in the complaint, the court can reasonably infer that KKR exercised actual control over Primedia and used that control to cause Primedia to enter into an unfair self-dealing transaction without any procedural safeguards to protect the minority stockholders. These allegations of fact, if proven at trial, suffice to remove the protection of the business judgment rule." citing: "*Sinclair Oil*, 280 A.2d at 720; see also Tooley v. AXA Fin., Inc., 2005 WL 1252378, at *5 (Del. Ch. May 13, 2005) (noting that the plaintiffs' allegation of facts are barely sufficient to rebut the presumption of the business judgment rule)").

[32] *In Kahn v. Lynch Communications Systems, Inc*. 638 A.2d 1110, 1117 (Del. 1994).

[33] See *Mills Acquisition Co. v. Macmillan, Inc.,* 559 A2d. 1261, 1279 (Del. 1989) quoting *AC Acquisitions v. Anderson, Clayton & Co.,* 519 A 2d. 103, 111 (Del. Ch. 1986). See also Balotti and Finkelstein (2010, Volume 1, Chapter 4, Part Two, §4.16).

[34] As for directors and officers, it would be very difficult for a plaintiff to establish that shareholders were not "informed", acted in "bad faith" (but without having a conflict of interest), or with the belief their decision would harm the corporation. (see Anabtawi and Stout 2008 with regards to the difficulty of proving a breach to the duty of care for directors and officers.)

The Duty of Loyalty

The duty of loyalty is the most important for directors. It is probably the most important for controlling shareholders as well. Courts have imposed fiduciary duties of loyalty on certain types of shareholders. As analyzed by Anabtawi and Stout (2008), when courts do impose a duty of loyalty on shareholders, the analysis tends to follow the application of loyalty duties in officer and director cases. "In particular, courts have held that majority shareholders, like corporate officers and directors, owe a fiduciary duty of loyalty to minority shareholders that precludes them from using their positions as controlling shareholders to extract material economic benefits from the firm at the minority's expense."[35] As articulated by the California Supreme Court in the famous case of Jones v. H.F. Ahmanson & Co., "majority shareholders may not use their power to control corporate activities to benefit themselves or in a manner detrimental to the minority. Any use to which they put the corporation or their power to control the corporation must benefit all shareholders proportionately (. . .)".[36]

Thus, in most instances the duty of loyalty should apply to controlling shareholders. This arises by virtue of controlling shareholders (1) serving as a director or in place of the directors and violating the duty of loyalty that the director owes the corporation, (2) unfairly profiting as a result of a self-serving transaction that they enter into with the corporation, or (3) usurping a corporate opportunity or competing with the corporation and thereby unfairly profiting at the expense of the corporation (Howle 2010). The following development will focus on the two last situations, as considering the first one would result as analyzing directors' fiduciary duties, which is not the focus of this Chapter.

Intrinsic Fairness and the Burden of Proof

Delaware courts typically apply the deferential business judgment rule when reviewing corporate decisions that do not involve a potential conflict of interest. In situations involving a potential conflict of interest, however, they will employ the

[35] See *Kahn v. Lynch Commc'ns Sys., Inc.,* 638 A.2d 1110, 115 (Del. 1994); *Sinclair Oil Corp. v. Levien,* 280 A.2d 717, 720 (Del. 1971); *Jones v. H.F. Ahmanson & Co.,* 460 P.2d 464, 471–472 (Cal. 1969).

[36] *Jones v. H.F. Ahmanson & Co.,* 1 Cal.3d 93, 81 Cal. Rptr. 592, 460 P.2d 464 (1969). Here, the defendants held about 85% of the common shares of a savings and loan association. They exchanged these shares for the shares of a new corporation that they formed and owned and then began to sell their shares of the new corporation to the public at a great profit. The effect was that the majority created a public market for their shares while the minority (the remaining 15% of the initial shareholders, including the plaintiff) had no market in which they could sell for anywhere near the same price. This was held to be a breach of the majority's fiduciary obligation to the minority, despite the fact that the case involved no exercise of control over the corporation itself (that is, over the operation of the business) and no use of a position as an officer or director.

See also Klein et al. (2010).

more stringent entire fairness standard. The choice of which standard of review governs a transaction is crucial because, in practice, it often determines the outcome of litigation (Klein 2011). Application of the business judgment rule will likely results in victory for the corporate fiduciaries, whereas entire fairness review will almost assure their defeat.[37] A further effect of applying entire fairness review is that courts cannot dismiss claims at the pleadings stage. This means that all claims will have some settlement value, regardless of merit.[38]

In order to invoke entire fairness review for a breach of a controlling shareholder's fiduciary obligation, a challenger must first show majority control or domination but also that the controlling shareholder engaged in self-dealing.[39] The Delaware courts have stated that "traditionally, the term 'self-dealing' describes the 'situation when a [corporate fiduciary] is on both sides of a transaction." [40] The showing of those two elements (majority control or domination as well as self-dealing) is likely to effectively discourage frivolous litigation against shareholders accused of breaching their fiduciary duty of loyalty. As Anabtawi and Stout (2008) suggested, "the number of cases in which a plaintiff can make both showings is likely to be small, and also likely to involve circumstances where judicial scrutiny is appropriate and desirable". In fact those restrictive measures are similar to the ones employed in cases involving officers and directors accused of breaching their duty of loyalty.

Under the entire fairness standard of review, in *Weinberger,*[41] the court held that directors or majority shareholders have the burden of demonstrating the "entire fairness" of the transaction, which has two aspects: fair dealing (or procedural

[37] Nonetheless, when minority shareholders may loose on their claim relating to controlling shareholders' breach of fiduciary duties, they may still have other claims. For instance, with regard to minority freeze-outs, minority shareholders have a remedy if they believe the price to be paid in a cash-out merger is too low: an appraisal proceeding with the same measure of value as that adopted by the Weinberger court (*Weinberger*, 457 A.2d at 703–704) But under the Delaware appraisal procedure, a shareholder must jump through a number of procedural hoops, including not voting for the transaction and not accepting payment, in order to retain the right to bring an appraisal action (See Delaware Code, Title 8 Corporations, Chapter 1 – General Corporation Law, §262(a)). More importantly, the Delaware corporate statute does not authorize a class appraisal procedure (See Delaware Code, Title 8 Corporations, Chapter 1 – General Corporation Law, §262 (a)).

See also *Mills Acquisition Co. v. Macmillan, Inc.,* 559 A.2d 1261, 1279 (Del. 1989) as well as Gordon (2008) and Klein (2011).

[38] See *In re Cox Communications, Inc. Shareholders Litigation*, 879 A.2d 604 (Del. Ch. 2005). See also Klein (2011).

[39] See, e.g., *Sinclair Oil Corp. v. Levien,* 280 A.2d 717, 720 (Del. 1971): "[Entire fairness review] will be applied only when the fiduciary duty is accompanied by self-dealing – the situation when a parent is on both sides of a transaction with its subsidiary."; American Jurisprudence (2009, 18A, § 654): "The invocation of the intrinsic-fairness standard is predicated upon the existence of two factors: (1) majority control and domination; and (2) majority self-dealing".

[40] See *Cinerama, Inc. v. Technicolor, Inc.,* 663 A.2d 1156, 1169 (Del. 1995): quoting *Sinclair*, 280 A.2d at 720. See also Klein (2011).

[41] *Weinberger v. UOP, Inc.,* 457 A.2d 701 (Del.1983).

fairness) and fair price.[42] The fair dealing prong "embraces questions of when the transaction was timed, how it was initiated, structured, negotiated, disclosed to the directors, and how the approvals of the directors and stockholders were obtained."[43] Fair price "relates to the economic and financial considerations of the proposed merger, including all relevant factors: assets, market value, earnings, future prospects, and any other elements that affect the intrinsic or inherent value of a company's stock."[44] The Delaware Supreme Court found that the deal and the surrounding circumstances have to be viewed in their entirety.[45]

The burden of proof can shift back to the challenging shareholder if either a special committee or an informed majority of minority shareholders (i.e. a majority of the remaining minority shareholders who did not have a conflict of interest) approved the transaction. For the burden of proof to shift back to the plaintiff, the controlling shareholders need to show they adopted an arm's-length bargaining procedure. For instance, the burden remains on the controlling shareholders to show that they completely disclosed all facts relevant to the transaction.[46] Also, in a case where the Delaware Supreme Court evaluated the fairness of a court-approved sale of part interest in a corporation controlled by an individual shareholder to second corporation controlled by the same shareholder, the court concluded that use of independent directors to evaluate the sale proposal did not shift the burden of persuasion on the issue of whether the transaction was entirely fair from the defendants to the plaintiff, as the board was not sufficiently diligent.[47] Nonetheless, Anabtawi and Stout (2008) pointed out that "certain Delaware case law suggests that if a transaction involving a controlling shareholder is approved by a special board committee comprised of disinterested directors with "real bargaining power" and that deals with the majority shareholder "on an arm length basis," this shifts the burden of showing unfairness back to the plaintiff."[48]

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[42] *Weinberger v. UOP, Inc.,* 457 A.2d 701 (Del.1983). at 710–711. See also e.g. *Bershad v. Curtiss-Wright Corp.,* 535 A.2d 840 (Del. 1987): "When a majority shareholder stands on both sides of a transaction, that shareholder must establish the entire fairness of the undertaking in terms of fair price and fair dealing, as well as disclosure of all material facts of the transaction to minority shareholders".

[43] *Weinberger v. UOP, Inc.,* 457 A.2d 701 (Del.1983). at 710–711.

[44] Weinberger v. UOP, Inc., 457 A.2d 701 (Del.1983). at 710–711.

[45] *In re Tri-Star Pictures, Inc., Litigation,* 634 A.2d 319 (Del. 1993), as corrected, (Dec. 8, 1993) and disapproved of by, *Tooley v. Donaldson, Lufkin & Jenrette, Inc.,* 845 A.2d 1031 (Del. 2004).

[46] *Weinberger v. UOP, Inc.,* 457 A.2d 701 (Del.1983).

[47] *Kahn v. Tremont Corp.,* 694 A.2d 422 (Del. 1997). See also Bishop (2010, §3: 41).

[48] *Weinberger v. UOP, Inc.,* 457 A.2d 701, 709 n7 (Del. 1983): "Although perfection is not possible, or expected, the result here could have been entirely different if UOP had appointed an independent negotiating committee of its outside directors to deal with Signal at arm's length. See, e.g., *Harriman v. E.I. duPont de Nemours & Co.,* 411 F.Supp. 133 (Del.1975). Since fairness in this context can be equated to conduct by a theoretical, wholly independent, board of directors acting upon the matter before them, it is unfortunate that this course apparently was neither considered nor pursued. *Johnston v. Greene,* Del. Supr., 121 A.2d 919, 925 (1956). Particularly in a parent- subsidiary context, a showing that the action taken was as though each of the contending parties had in fact exerted its bargaining power against the other at arm's length is strong evidence that the transaction meets the test of fairness. *Getty Oil Co. v. Skelly Oil Co.,* Del. Supr., 267 A.2d 883, 886 (1970); *Puma v. Marriott,* Del. Ch., 283 A.2d 693, 696 (1971).".

The rationale behind the approval of the interested transaction by the majority of the minority is similar to the one behind special committees: to allow the disinterested shareholders the power to reject the proposed transaction (Gottschalk et al. 2011). Because this power to reject the proposed transaction is key to a disinterested shareholder vote, the courts have held that the burden of proof will only shift to the plaintiff to prove lack of entire fairness if the transaction is expressly contingent upon approval by the majority of the minority (disinterested) shares.[49] However, even in the absence of a provision in the agreement conditioning the transaction on approval, such a stamp of approval from the minority shareholders might still be considered as an indicia of fairness.[50]

Again, as for the initial proof requirements bare by the plaintiff, this shifting back of the burden of proof to plaintiff is very similar to the rules applying to directors and officers. In fact, Section 144 of the Delaware corporation code[51] provides for "two procedures that courts have deemed are so significant that, if

[49] See *Rabkin v. Philip A. Hunt Chemical Corp.,* 13 Del. J. Corp. L. 1210, 1987 WL 28436 (Del. Ch. 1987); see also *Rosenblatt v. Getty Oil Co,* 8 Del. J. Corp. L. 366, 1983 WL 8936, at *13 (Del. Ch. 1983), decision aff'd, 493 A.2d 929 (Del. 1985). See also *In re Pure Resources, Inc., Shareholders Litigation,* 808 A.2d 421 (Del. Ch. 2002): "Vice Chancellor Strine of the Delaware Court of Chancery found that tender or exchange offers by controlling stockholders will be deemed noncoercive when the offer is subject to a nonwaivable minority tender condition, the controlling stockholder promises to promptly consummate a short-form merger at the same price if it obtains 90% of the shares, and the controlling stockholder has made no retributive threats. In applying those principles to the facts, the court enjoined the exchange offer at issue on grounds that the majority of the minority provision was defective insofar as the minority was defined to include the management of Pure whose motivation for tendering was different from the other public stockholders."

[50] See *Van de Walle v. Unimation, Inc.,* 1991 WL 29303, at *14 (Del. Ch. 1991). See also Gottschalk et al. (2011, Chapter 46: Corporate Governance, §37).

[51] Delaware Code, Title 8 Corporations, Chapter 1 – General Corporation Law, §144 provides in pertinent part:

(a) No contract or transaction between a corporation and one or more of its directors or officers, or between a corporation and any other corporation, partnership, association, or other organization in which one or more of its directors or officers, are directors or officers, or have a financial interest, shall be void or voidable solely for this reason, or solely because the director or officer is present at or participates in the meeting of the board or committee which authorizes the contract or transaction, or solely because any such director's or officer's votes are counted for such purpose, if:

1. The material facts as to the director's or officer's relationship or interest and as to the contract or transaction are disclosed or are known to the board of directors or the committee, and the board or committee in good faith authorizes the contract or transaction by the affirmative votes of a majority of the disinterested directors, even though the disinterested directors be less than a quorum; or
2. The material facts as to the director's or officer's relationship or interest and as to the contract or transaction are disclosed or are known to the shareholders entitled to vote thereon, and the contract or transaction is specifically approved in good faith by vote of the shareholders.
3. The contract or transaction is fair as to the corporation as of the time it is authorized, approved or ratified, by the board of directors, a committee or the shareholders.

officers and directors follow them properly, they shift the legal burden of demonstrating unfairness back to the plaintiff. In particular, a corporate officer or director can shift the burden of demonstrating unfairness by showing that the transaction in question, although admittedly self- interested, was nevertheless approved after full disclosure by either (1) a majority of the company's disinterested directors or (2) by a majority of the company's disinterested shareholders" (Anabtawi and Stout 2008). As for controlling shareholders' fiduciary duties proceedings, if either showing is made, the burden of demonstrating unfairness reverts to the plaintiff.[52]

Applying Fiduciary Duties to Controlling Shareholders – Three Situations

Gilson and Gordon (2003), observed that "controlling shareholder may extract private benefits of control in one of three ways: by taking a disproportionate amount of the corporation's ongoing earnings, by freezing out the minority, or by selling control". They pursue by pointing out that Delaware Chancery Court decisions should be consistent for those three situations because they are in substantial respects substitutes, but unfortunately they are not. Klein (2011) also alleged this point more recently in response to the case *In re John Q. Hammons Hotels Inc. Shareholder Litigation*.[53]

The following discusses briefly the rules for the three situations where controlling shareholders' self-dealing may occur.

For the corporation's ongoing earnings, *Sinclair*[54] applies, which sets out the general standards for the conduct of controlled corporations. The Delaware Supreme Court makes a distinction between the business and strategic decisions of the corporations and the controlling shareholder's direct dealings with the controlled corporation, such as the unfair transfer pricing, the transfer of assets from the controlled corporation to the controlling shareholder, and the use of the

[52] See Delaware Code, Title 8 Corporations, Chapter 1 – General Corporation Law, §144:

Also see Anabtawi and Stout (2008): "When there is disinterested director or disinterested shareholder approval, most case law suggests that the defendant may not be immunized from a loyalty claim. Instead, the burden of proving the substantive unfairness of the transaction may simply shift back to the plaintiff. *See Weinberger, 457 A.2d at 703; In re Wheelabrator Techs. Inc. Shareholders Litig.,* 663 A.2d 1194 (Del. Ch. 1995). Nevertheless, there is some authority suggesting that, in certain circumstances, disinterested director or disinterested shareholder approval can effectively insulate a defendant from loyalty claims. See *Lewis v. Vogelstein,* 699 A.2d 327, 334 (Del. Ch. 1997) (discussing the question)."

[53] *In re John Q. Hammons Hotels Inc. Shareholder Litigation*., Civil Action No. 758-CC, 2009 WL 3165613 (Del. Ch. Oct. 2, 2009). (Klein (2011) point focuses particularly on private benefits of control by freezing out the minority or by selling control.)

[54] *Sinclair Oil Corp. v. Levien,* 280 A.2d (Del. 1971): "self-dealing occurs when the parent, by virtue of its domination of the subsidiary, causes the subsidiary to act in such a way that the parent receives something from the subsidiary to the exclusion of, and detriment to, the minority stockholders of the subsidiary".

controlled corporation's assets as collateral for a controlling shareholder's debt (Gilson and Gordon 2003). "In general, courts treat business and strategic decisions that even-handedly affect the controlling and non-controlling shareholders essentially as business judgments" (Gilson and Gordon 2003).[55] In contrast, if the controlling shareholder appears to benefit at the expense of the controlled corporation, the intrinsic fairness standard, where the controlling shareholder bears the burden of proving that the terms of the transaction were intrinsically fair, applies (Gilson and Gordon 2003).

For freezeout mergers, the Delaware Supreme Court held, in *Lynch*, that the exclusive standard of judicial review is entire fairness.[56] As detailed above, the burden of proof may shift if the controlling shareholder can show that either a special committee or an informed majority of minority shareholders approved the transaction. But even if the burden of proof shifts, in the case of freeze out mergers, the entire fairness review continues to apply.[57] Klein (2011) noted that "academics and practitioners alike have urged the Delaware Supreme Court to overrule Lynch and apply the business judgment rule to freezeout transactions that are approved by both a special committee and a majority of minority shareholders (...).[58] This proposal would bring consistency to the law governing freezeout transactions and require an optimally efficient level of procedural safeguards for minority shareholders". Whereas this proposal may be too drastic, its main objective, i.e. to bring consistency in rules applying to the different situation where controlling shareholders may extract private benefits of control, is highly relevant.

For third-party mergers, challenging shareholders may still invoke entire fairness review by proving the same two elements than for freezout mergers, i.e. majority control or domination by controlling shareholders as well as self-dealing. For instance, in *McMullin v. Bran,*[59] the challenging shareholders alleged that the

[55] Gilson and Gordon (2003): "Thus, the Delaware Supreme Court handled the dividend decision in Sinclair, as well as the related claim that the controlled corporation's business was limited to the development of oil opportunities in Venezuela (presumably why the controlled subsidiary was in a position to pay such large dividends), as business judgments, and thereby outside the realm of intrusive judicial review."

[56] *In Kahn v. Lynch Communication Sys., Inc.,* 638 A.2d 1110, 1117 (Del. 1994).

[57] See e.g. *In re John Q. Hammons Hotels Inc. S'holder Litig*., Civil Action No. 758-CC, 2009 WL 3165613 (Del. Ch. Oct. 2, 2009) where the court notes that *Lynch* mandate that the entire fairness standard of review apply notwithstanding ay procedural protections that were used when the controlling shareholder stood on both sides of the transaction.

See also Klein (2011): "The Lynch decision clarified a previously ambiguous area of Delaware law and opted to apply what many commentators believe is an overly stringent standard for freezeout transactions." For instance, Subramanian (2007) argues that corporations are more likely to form a special committee because it is less onerous than obtaining approval from a majority of the minority and there is no added benefit from the latter course of action.

[58] See *In re Cox Communications, Inc. Shareholders Litigation,* 879 A.2d 604, 643–644 (Del. Ch. 2005); See also Subramanian (2005).

[59] *McMullin v. Beran,* 765 A.2d (Del. 2000)

controlling shareholder has created a conflict of interest for the board.[60] Contrarily to freezout mergers, if the controlling shareholder can show that both a special committee and an informed majority of minority shareholders approved the transaction, the business judgment rule should apply.[61]

The primary concern that arises in a third-party merger is that the controlling shareholder may attempt to structure the merger in a way that provides his or her with excess consideration at the expense of the minority shareholders (although the payment of a control premium is permissible, it should not come at the expense of the faire market value of the minority shares). But in a third-party acquisition (such as *Hammons* merger), the controlling shareholder is cashed out along with the minority and many of the concerns that arise in the freezout context (such as price manipulations) are avoided (Klein 2011). Because the risk of self-dealing is lower in third-party mergers than in freezeout mergers, one could expect a lower standard of review of the specific procedures set up to protect the interests of the minority shareholders. This is not the case, probably due to what is at stake. For freezout mergers, either a special committee *or* the approval of the majority of the minority is enough. But it only allows shifting the burden of proof. In the case of third-party mergers, both a special committee *and* the approval of the majority of

[60] See Gilson and Gordon (2003): "In McMullin, a controlling shareholder negotiated the sale of the entire corporation with all shareholders receiving the same price. While recognizing that the board of the controlled subsidiary lacked the power to block or even influence the transaction, the court nonetheless held that the controlled subsidiary board had violated its fiduciary duty by failing to fully inform itself about whether the transaction price exceeded the subsidiary's going concern value. Consequently, the subsidiary board could not discharge its disclosure obligation to minority shareholders who had to decide whether or not to seek appraisal."

[61] See *In re John Q. Hammons Hotels Inc. S'holder Litig*., Civil Action No. 758-CC, 2009 WL 3165613 (Del. Ch. Oct. 2, 2009): "business judgment would be the applicable standard of review if the transaction were (1) recommended by a disinterested and independent special committee, *and* (2) approved by stockholders in a non-waivable vote of the majority of all the minority stockholders." (at *12) The court added in footnote the following: "Of course, it is not sufficient for the special committee to merely be disinterested and independent. Rather, the committee must be given sufficient authority and opportunity to bargain on behalf of the minority stockholders, including the ability to hire independent legal and financial advisors. Moreover, neither special committee approval nor a stockholder vote would be effective if the controlling stockholder engaged in threats, coercion, or fraud. As explained below, plaintiffs contend that the price of the minority shares was depressed as a result of Hammons's improper self-dealing conduct and that as a result the special committee and the minority stockholders were coerced into accepting the Merger. If a plaintiff were able to make such a showing, even special committee approval and a majority of the minority vote would not invoke the business judgment standard of review. Similarly, a stockholder vote would not be effective for purposes of invoking the business judgment standard of review if it were based on disclosure that contained material misstatements or omissions."

See also Klein (2011): "Contrary to the decision in Hammons, prior precedent suggests that the business judgment rule should apply to third-party mergers if either a special committee or a majority of the minority approved the transaction, but not both."

the minority are required. But if the controlling shareholder can show both, the court will give the "business judgment rule" protection to the transaction, meaning a likely success of the controlling shareholder in the litigation. The case law does not acknowledge the simultaneity of the three doctrinal lines. This makes creating and maintaining the symmetry between the three alternatives methods by which private benefits of control may be extracted through ongoing operations, by a sale of control, or by a freeze-out much harder. Gordon (2008) as well as Gilson and Gordon (2003) argue that the Delaware doctrine tends to reflect a sensible symmetry between the three alternative methods, the levels of restriction applied are sometimes not appropriate, and thus mainly because the three methods of extraction are not evaluated simultaneously.[62]

Summation

Similarly to the rules applied to directors and officers, the rules relating to controlling shareholders' fiduciary duties, when recognized by courts, tend to balance controlling shareholders' powers. To the extent those fiduciary duties are easily enforceable (discussed herein), controlling shareholders have to answer for their acts, mainly whenever they have a conflict of interest. The efficacy of these rules is offered by La Porta, Lopez-de-Silanes and Shleifer as an explanation for the absence of pyramidal structures in the United States. They suggested that "perhaps the reason that pyramidal group structures are relatively rare in the United States and the United Kingdom [yet ubiquitous elsewhere in Europe] is that many transactions inside a group would be challenged on fairness grounds by minority shareholders of subsidiaries, who would get a receptive hearing in court" (La Porta et al. 2000).

With the increase of shareholders' power (Bebchuk 2005), courts may tend to recognize more extensive fiduciary duties to shareholders. For a more comprehensive approach, one may recommend that corporation statutes such as the Model Business Corporation Act or the Delaware General Corporation Law do include specific provisions with regards to shareholders' fiduciary duties, as they do for directors and officers.

To better understand the balance between shareholders' rights and duties developed in the US legal system, we will put it into perspective with the one developed into the French legal system.

[62] Note that Gilson and Gordon (2003) argue that *In re Digex, Inc. Shareholders Litigation* (789 A.2d 1176 (Del. Ch. 2000)) and *In re Siliconix Inc. Shareholders Litigation* (No. 18700, 2001 WL 716787 (Del. Ch. June 19, 2001)) were wrong decisions with regard to the symmetry of the three dimensions.

The French Fiduciary Duty – The Fiduciary Duty to Act to the Best of the Social Interest

Many countries borrow heavily from U.S. corporate law in an attempt to signal to those investors that they comply with U.S. domestic legal standards (Berkowitz et al. 2003). Against this background, it is not surprising that developments have occurred in France, where the legislative branch and also companies increasingly feel the pressure of institutional investors to adapt their rules and articles of associations to the U.S. blueprint (Freedman 2001; Storck 2004; Fleischer 2005).[63] As articulated by Fleischer (2003), when "distinguishing *actively* initiated and *passively* tolerated transplantations it is fair to say that corporate transplants for the most part fall into the second category: national legislators are only occasionally the *driving force* of company law transfers; more often they are themselves *driven* by the mighty winds of globalization: capital markets make law!."[64] In Europe, the concept of fiduciary duties proved highly influential. Nowadays, most civil law jurisdictions impose a general duty of loyalty upon directors (Fleischer 2003, 2005).

In France, the courts have not only taken recourse to the notion of duty of loyalty but also to traditional domestic concepts through which foreign legal ideas can trickle in (Fleischer 2005). Freedman (2001, 207:209) describes the infiltration process as follows. "The US fiduciary duties *(duty of loyalty, duty of care, business judgment rule)* expand in French law under traditional law concepts, specific to French law such as '*la bonne foi*', '*la confiance*', '*la loyaute*'". According Fleisher (2005), "general concepts like fiduciary duties are especially suitable candidates for legal transformation since they are flexible enough to adapt to local particularities. To put it differently, legal transplants will have greater success insofar as they can be presented as a result of evolutionary legal development: jurists prefer incremental rather than radical reform steps." As articulated by Cotterrell (2001, 81), "new developments need to be seen as consistent with tradition; they should, as far as possible, appear as organic developments".[65]

Hence, with regard to the reception of fiduciary duties in France, they are *dissociated* from their Anglo-American roots and engrained in their new legal environment. U.S. and English precedents on the subject are, at the most, persuasive authorities before French courts, leaving the domestic judges free to attach a different meaning to the 'naturalized' legal transplant. Watson (1974, 1993)'s medical metaphor, alluding to hazardous surgical operations, is illuminating: "A successful legal transplant – like that of a human organ – will grow in its new body,

[63] For instance, Freedman (2001): "Devant l'importance accrue des investisseurs institutionnels etrangers, entreprises et institutions financieres adaptent leurs structures pour mieux repondre a leurs criteres."

[64] In this sense Ebke (2000, 17).

[65] Similarly Berkowitz et al. (2003): "A voluntary transplant increases its own receptivity when it makes a significant adaptation of the foreign formal legal order to initial conditions, in particular to the preexisting formal and informal legal order."

and become part of that body just as the rule or institution would have continued to develop in its parent system."

Most civil law jurisdictions impose a general duty of loyalty upon directors (Fleischer 2003, 2005). In French corporate law, academics and practitioners have discerned a close connection between the duty of loyalty and judgments of the *Cour de Cassation,* which explicitly recognize a *devoir de loyaute* of directors.[66] As for directors and officers,[67] academics emphasized the general convergence between American and French corporate governance principles (Dion 1994; Peltier 1997; Baker 2001; Cozian et al. 2011). This convergence is less clear with regards to the duty of loyalty of shareholders. A duty of care and a duty of loyalty could be found through other more traditional French legal concepts, as developed below.

The Traditional Concepts of Social Interest and Equality of Shareholders

Although not directly linked to controlling shareholders, two concepts are part of the foundations of corporate French law and cannot be ignore in an analysis of controlling shareholders' duties. First there is the interest of the corporation ("*l'intérêt social*") and second the equality of shareholders.

- The interest of the corporation ("*l'intérêt social*")
  One major principle of French corporate law is that shareholders, directors and officers should govern the corporation in the best interest of the corporation

[66] See Cass. com., 27.2.1996, JCP ed. E 1996 II, 838 with the key sentence: "M. Bernhard V a manque au devoir de loyaute qui s'impose au dirigeant d'une societea l'egard de tout associe." In this first case, the president of a public, but unlisted company bought shares from shareholders for 3.000 F. each and sold them a few days later for 8.800 F. The Chambre commerciale held that, by not disclosing the shares' true value, he had violated his duty of loyalty, which a director owes to each individual shareholder.

See also Cass. com., 24.2.1998, Bull. Joly 1998, 813 with the key sentence: "Monsieur K. avait successivement les fonctions de gerant puis apres sa transformation en societe anonyme de directeur genral de la societe P., ce dont il decoulait qu'il etait tenu a une obligation de loyaute l'egard de cette entreprise." This second case dealt with a director who resigned, formed a new company and persuaded key employees of his former company to join him. Unlike the appellate court, the Cour de cassation granted damages to the company on the theory that the director had violated his duty of loyalty vis-a-vis the company.

See also Cass. com., 12.5.2004, 00-15618, Rev. soc. 2005, 140.

See also Daille-Duclos (1998, 1486): "Le devoir de loyaute du dirigeant est une creation jurisprudentielle de la Chambre commerciale de la Cour de cassation *(...)* Le devoir de loyaute du dirigeant apparait directement issu des 'principles of corporate governance' definies aux Etats-Unis par l'American Law Institute *(...)."*

For other specific analysis, see also Magnier (2001) and Godon (2005).

[67] Although the governance major principles remain the same, in a matter of clarity, this chapter focuses on the predominant one-tier structure. Since the 1966 reforms, French corporate law has alternatively offered a German-style two-tier structure with a *directoire* and a *conseil de surveillance*. As of 2002, 6491 among 150,000 *sociétés anonymes* had a dualistic structure, but about 25% of the CAC 40 stock index (Merle and Fauchon 2010).

("*l'intérêt social*") (Bissara 1999; Alcouffe 2000; Poraccchia 2000). The best interest of the corporation, under French law, is distinct from the interest of shareholders. Hence, every decision needs always to be justified under this criterion first.

- Equality of Shareholders:
  Another major principle is the one of the equality of shareholders. Under this principle, the rights attached to a same category of actions need to be the same.[68] By granting shareholders a right to be treated equally by the corporation, the French legal system might prevent the corporation from granting unjustified benefits to its controlling shareholders.[69]

The Abuse of Voting Right (*Abus de Droit de Vote*) – The Abuse of Majority Powers

Another standard in place restricts the ability of controlling shareholders to exercise control powers to the detriment of other shareholders. France provide for "abuse of majority powers" (*abus de majorité*) doctrine that restrict majority shareholders' freedom to vote as they wish at general meetings. In fact, not only they have to exercise their voting rights in such a way as to pursue the company's interest (see above), but also they cannot exercise their voting rights to the detriment of fellow shareholders (Legros 1991; Sortais 2003). Case law considers that there is an abuse of majority if a majority shareholder votes against the "corporate interest" of the company, in order to pursue her own personal interest and to detriment of the minority shareholders.

Although this is not within the scope of this Chapter, it is important to note here that there is a counterpart to the abuse of majority, namely the abuse of minority.

Potential Self-Dealing Transactions (*les Conventions Réglementées*)

In France, transactions concerning large corporations[70] in which a shareholder has more than 10% of the voting rights are qualified to be 'potential self-dealing transactions'. Those potential self-dealing transactions must be authorized ex-ante by the board of directors and ratified by the annual shareholder meeting, following a special report by the statutory auditors (*commissaires aux comptes*).[71] The

[68] Art. L. 228–211, Code de Commerce.

[69] This is made explicit by Art. 42 of the Second Directive; Art. 1832 French C. civil.

[70] Here *Societes Anonymes*.

[71] Art. L. 225–238 and L. 225–240, French Code de Commerce.

In order to protect minority shareholders, French law also prohibits some forms of self-dealing which are deemed to be too dangerous. This is the case of loans to managers or directors or guarantees for the benefit of managers or directors (Art. L. 225–243, French Code de Commerce.)

interested party must abstain from voting both within the board and at the shareholders meeting.[72]

These rules do not apply to "current transactions and entered into at normal conditions," which only have to be disclosed by the interested party to the chairman of the board, who must then provide a list of such transactions to the board and to the auditors.[73]

Self-dealing transactions are voidable if they were not subject to a vote by the board of directors,[74] or if the interested shareholder exercised his or her vote at the board of directors' meeting authorizing them, no matter whether the contract would have been authorized without his or her vote.[75]

Conclusion – At the Level of Theory, How Does the US and French Principles Compare?

As Anabtawi and Stout (2008) have cautioned "the balance of corporate decision making power between managers and shareholders is shifting rapidly in the direction of shareholders. If that shift is to prove beneficial—if the move toward greater "shareholder democracy" is to increase shareholder value rather than destroy it—it must not take place without limitation. Rights must be coupled with responsibilities". Bebchuk (2005) observed that, in the US, the board must initiate all major corporate decisions.[76] The only way for shareholders to introduce a new corporate decision is by rejecting incumbent directors with a team that is expected to make such a change. In the US, amendments to corporate charters, approvals of mergers and sale of company assets can only be done through board initiative, differently from what happens in France (Santella et al. 2008; Gelter 2009; Alcouffe 2000; Hansmann and Kraakman 2009).[77] Indeed, French academics and

[72] Art. L. 225–240, French Code de Commerce.

[73] Art. L. 225–239, French Code de Commerce.

[74] Art. L. 225–242 French Code de Commerce.

[75] CA Aix-en-Provence, May 15, 1991, Dr. Sociétés 1991, n°279. See also Conac et al. (2007).

[76] As articulated by Bebchuk (2005), "the corporate laws of the U.S. start with a basic principle: Even though they are the ones supplying the funds, shareholders do not necessarily have the power to order the directors to follow any particular course of action."

[77] As articulated by Gelter (2009), "French law (...) allows shareholders to revoke the appointment of members of the *conseil d'administration* (board of directors) at any time (Art. L. 225–18 al. 2 Code de Commerce), without the necessity to give a reason. The rule is considered to be mandatory. Similarly, the CEO of the company (*directeur général*), who is appointed by the *conseil* can be removed by it at any time (Art. L. 225–255 Code de Commerce). Assistant general managers (*directeurs délégués*), who are appointed upon proposal by the CEO (Art. L. 225–253 Code de Commerce.), can be removed upon his proposal as well (Art. L. 225–255 Code de Commerce). While some commentators emphasize the strong position of the PDG (président directeur général, i.e. a person being both president of the *conseil* and CEO), it is obvious that his power is constrained by the large shareholders and the potential threat of replacement."

practitioners point out that it is not the board, but the general shareholders meeting that is the "supreme organ" of the company (see e.g. Guyon 2003). For instance, decision on dividend distribution in the US belongs exclusively to the board, whereas in France it is exclusively decided by shareholder meetings.[78] Even for removal of directors the situation is less favorable for investors in the US than in France, where shareholders can request at any time a vote. Further, as observed by Hertig and McCahery (2006), in France, minority shareholders have to approve all material transactions in conflict of interest.[79]

Hence, it seems that, in the US, shareholders have fewer voting rights than in the EU, particularly with reference to their more limited possibility to express their binding vote vis-à-vis the company management (Santella et al. 2008). Considering that duties come to balance rights, it does not come as a surprise that controlling shareholders' fiduciary duties in the French legal system are more extensive than shareholders' fiduciary duties in the US legal system. In the US legal system, common law doctrine of shareholder fiduciary duties is the main standard controlling shareholders' fiduciary duties need to comply with. On the other hand, in France, a large set of different concepts and rules have been developed to limit shareholders' powers and to increase their duties both toward the corporation and their fellow shareholders. As the result, controlling shareholders' fiduciary duties under French law seem to be more extensive than under US law. Being more extensive does not necessary means easier to enforce. To gain a better understanding of controlling shareholders' duties, the quality of law enforcement needs to be analyzed.

Controlling Shareholders' Fiduciary Duties Enforcement

Rules to enforce controlling shareholders' fiduciary duties have a high impact on how effective those duties are. Minority shareholders' motivation to enforce those duties may dissipate once they consider the cost of the litigation, its length and its potential outcomes. In turn, the litigation risk does influence controlling shareholders' decisions.

The US procedural rules will be considered followed by the French's. Those procedural rules will then be compared.

[78] Art. L. 232–212, Code de Commerce.

[79] Art. L. 225–238 to L. 225–240, Code de Commerce.

The US Procedural Rules

Under the US law, actions by shareholders may be divided into three general categories: (1) shareholders' derivative actions, which are brought by one or more shareholders of a corporation to remedy or prevent a wrong against the corporation[80]; (2) direct actions, which are brought by one or a few shareholders to remedy or prevent a direct wrong to the plaintiffs[81]; and (3) representative or class actions, which arise if the parties who have a direct claim against a corporation are too numerous to be joined in a direct action.[82]

Derivative Actions and Individual Actions

A breach of a fiduciary duty owed to a minority shareholder by a controlling shareholder is a proper subject for a shareholder's direct action against that controlling shareholder. However, if the duty is owed to the corporation rather that to an individual shareholder, the cause of action is derivative rather than direct. In a derivative action the shareholders are enforcing the rights of another, i.e. the corporation. The basic tests are: who suffers the most immediate and direct damage? And to whom did the defendant's duty run?[83]

In a shareholder direct action, any recovery is for the benefit of the individual shareholder, or, if the action was a class action, for the benefit of the class. In a derivative action recovery generally goes to the corporation rather than to the shareholder bringing the action. Hence, the two fundamental differences between a derivative suit and a direct suit is that in a derivative suit a plaintiff shareholder brings a claim on behalf of the corporation and seeks recovery for the corporation, whereas, in a direct suit, the plaintiff shareholder asserts her own cause of action and seeks recovery for herself (Gevurtz 2010). Hence, if the minority shareholder sued on behalf of the corporation in a derivative action, the award would go to the corporation and may then be subject to the control of the very majority shareholder whose objectionable conduct caused the minority shareholder to initially file the legal action.

Further, although the derivative suit provides injured minority shareholders some form of redress, the shareholders usually must conform to quite strict legal

[80] American Jurisprudence (2011a 19, §§1934, 1944, 1946, 1947, 1959).

[81] American Jurisprudence (2011a 19, §§1934, 1937, 1939).

[82] American Jurisprudence (2011a 19, §§1934, 1936).

[83] *PacLink Communications Intern., Inc. v. Superior Court,* 90 Cal. App. 4th 958, 109 Cal. Rptr. 2d 436 (2d Dist. 2001); *In re First Interstate Bancorp Consol. Shareholder Litigation,* 729 A.2d 851 (Del. Ch. 1998); *Alario v. Miller,* 354 So. 2d 925 (Fla. Dist. Ct. App. 2d Dist. 1978); *Dunn v. Ceccarelli,* 227 Ga. App. 505, 489 S.E.2d 563 (1997); *In re First Interstate Bancorp Consol. Shareholder Litigation,* 729 A.2d 851 (Del. Ch. 1998); *Wessin v. Archives Corp.,* 592 N.W.2d 460 (Minn. 1999).

statutory requirements. Depending of the states, the legal requirements that must be followed before a minority shareholder may file a derivative action usually include (1) making a written demand on the corporation and, through that written demand, requesting that the corporation take corrective action, and (2) then waiting up to 90 days for the corporation to respond to the written demand.[84]

A shareholder may bring a direct action instead of a derivative action under two circumstances. A shareholder may be permitted to bring a direct action if he or she alleges an injury 'separate and distinct' to himself or herself and different from the injury that the corporation generally suffered.[85] This situation often occurs when a majority shareholder breaches a shareholder's agreement or commits fraud by misleading a shareholder to buy or sell stock (Gevurtz 2010). Direct actions are also allowed when the injuries arise out of a special duty running from the alleged wrongdoer to the plaintiff.[86] The fiduciary duty that a majority shareholder owes to a minority shareholder is considered a "special duty" that satisfies the second of the above two exceptions.[87]

Although the courts generally require derivative suits, it is comprehensible why shareholders would rather bring direct suits. As noted above, unlike a direct suit, a derivative suit requires that the shareholder comply with pleading requirements, such as written demands and waiting periods, which can ultimately defeat a derivative action. Direct suits also allow the injured shareholder to recover personally, rather than have the proceeds go back into the corporate treasury (Tanguay 2007).

Although there is a theoretical conflict of interest, direct and derivative suits may be brought simultaneously.[88] For example, a shareholder may bring a derivative action and an individual claim at the same time if he or she has suffered a different

[84] See for instance: MBCA §7.42; N.C. Gen. Stat. §55-7-42 (2009); N. H. Rev. Stat. ANN. §293-A: 7.42 (1999).

[85] See, e.g., *In re Nuveen Fund Litig.,* 855 F.Supp. 950, 954 (N.D. Ill. 1994): denying a direct suit by shareholders where new shares were offered to existing shareholders, diluting the value of all shares, because ("the injury to each shareholder [was] of the same character"); Appeal of Richards, 590 A.2d 586, 590 (N.H. 1991): (stating that shareholders could not bring a direct suit because of a diminution in stock value, due to an inadequate rate increase for customers, because such an injury is not distinguishable from that suffered by all shareholders*); Loewen v. Galligan,* 882 P.2d 104, 112 (Or. Ct. App. 1994): denying direct suit by shareholders after merger diminished value of their stock because they had suffered no "special" injury.

[86] *Gaskin*, 675 S.E.2d at 117. See *Eisenberg v. Flying Tiger Line, Inc.,* 451 F.2d 267, 268 (2d Cir. 1971): allowing a direct suit where minority shareholder claimed that his ability to control the corporation through voting rights was diluted.

[87] See *Eisenberg v. Flying Tiger Line, Inc.,* 451 F.2d 267, 268 (2d Cir. 1971): allowing a direct suit where minority shareholder claimed that his ability to control the corporation through voting rights was diluted.

[88] *In re TransOcean Tender Offer Securities Litigation*, 455 F. Supp. 999 (N.D. Ill. 1978).

injury than the other shareholders.[89] Additionally, if a shareholder's complaint states a cause of action that is both direct and derivative, the shareholder may choose to proceed with only the direct action.[90]

Procedural Rules – Class Actions

In appropriate circumstances, a shareholder may also sue as a representative of a class of shareholders to seek relief for direct injuries that are independent of any injury to the corporation.[91]

State civil procedure statutes used vastly different language than the Federal Rule. State courts tend nonetheless to rely on the language of the Federal Rule of Civil Procedure 23 and the federal cases interpreting it. This section will then mainly focus on Federal Rule 23 and the Federal cases.

A representative action arises if the parties are too numerous to be joined, in which case one shareholder or a few shareholders are permitted to sue on behalf of all the shareholders.[92] An action is representative if it is based on a primary or personal right belonging to the plaintiff shareholder and those of his or her class.[93]

Further, under Federal Rule 23, a class action is proper if one of the following three situations is present: either (1) separate actions would create a risk of inconsistent results or impair the interests of unnamed partied, (2) the defendants has acted or refused to act on grounds applicable to the class and injunctive or declaratory relief is appropriate for the class as a whole, or (3) common questions of law or fact predominate over individual issues and a class action is superior to alternate methods of adjudication. In case of a minority shareholder plaintiff suing to enforce controlling shareholders' duties, those three situations can be encountered.

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[89] *Levy v. Markal Sales Corp.,* 268 Ill. App. 3d 355, 205 Ill. Dec. 599, 643 N.E.2d 1206 (1st Dist. 1994).

[90] *Paskowitz v. Wohlstadter,* 151 Md. App. 1, 822 A.2d 1272 (2003).

[91] See *Parnes v. Bally Entertainment Corp.,* 722 A.2d 1243 (Del. 1999). See also *Kahn v. Lynch Communication Sys., Inc.,* 638 A.2d 1110, 1111 (Del. 1994): noting that the plaintiff brought a class action on behalf of all shareholders of the acquired company whose stock had been procured through the merger.

[92] *Duncan v. National Tea Co.,* 14 Ill. App. 2d 280, 144 N.E.2d 771, 69 A.L.R. 2d 546 (1st Dist. 1957); *Brill v. Blakeley,* 281 A.D. 532, 120 N.Y.S.2d 713 (1st Dep't 1953), order aff'd, 308 N.Y. 951, 127 N.E.2d 96 (1955); Federal Rules of Civil Procedure Rule 23.

As to class actions in federal courts, generally, see American Jurisprudence (2011b Federal Courts, §§1782–2221).

As to class actions, generally, see American Jurisprudence (2011c Parties, §§53–123).

[93] *Schreiber v. Butte Copper & Zinc Co.,* 98 F. Supp. 106 (S.D. N.Y. 1951): A class action would be certified in an action commenced by two shareholders arising out of an alleged breach of fiduciary duty by the individual defendants, who allegedly failed to fully disclose the terms of a tender offer and misappropriated a part of the price of the corporation. See also *Brandon v. Chefetz,* 106 A.D.2d 162, 485 N.Y.S.2d 55 (1st Dep't 1985).

As derivative actions, class actions have restricting legal requirements that reduce the extent to which minority shareholders can use this procedure. Nonetheless, class actions, whenever certified by a court, allow minority shareholders to be adequately and fairly represented by one of them. It reduces costs and helps to enforce controlling shareholders' fiduciary duties efficiently.

This is especially important in comparison to the French legal system where class actions do not exist.

French Procedural Rules

Whereas minority shareholders may bring a claim both under civil and criminal law, how those rules can be enforced limit their effectiveness.

Right to Sue on Behalf of the Corporation Under Civil Law

In France, individual shareholders have traditionally been able to sue directors on behalf of the corporation (*action sociale ut singuli*).[94] Liability suits can be brought not only against directors formally elected,[95] but also toward anyone de facto managing the company by exercising powers that are typical of a director, like presiding over board meetings, individually making the main company's decisions, and so on. Typically, this can be the case of a controlling shareholder (Conac et al. 2007).

Also, French law provides that shareholders representing at least 5% of the capital may petition the court for the appointment of a business expert (*expert de gestion*) in order to gather information about business decisions.[96] Since these business decisions can sometimes be motivated by controlling shareholders' self-interest, appointment of a business expert can help uncover such self dealing. According to Conac et al. (2007), "using this procedure is convenient for the minority shareholder since the judge can oblige the company to pay for the expert's compensation, which is not the case for the generally applicable procedure providing for the appointment of a pre-trial court expert (so-called *expertise in futurum*)".

[94] Art. L. 225–252 French Code de Commerce.

[95] In French law, de facto directors and managers of solvent companies are subject to liability not by application of the specific provisions of the commercial code regarding liability, since they do not include de facto managers, but rather under the general civil principle of liability (Art. 1382 French civil code). See. Cass. com., March 21, 2005, Rev. sociétés 1995, p. 501, n. B. Saintourens. In case the company is insolvent, de facto directors and managers are subject to liability by application of specific provisions of the French commercial code.

[96] Art. L. 225–231 French Code de Commerce.

More Specifically with Regards to the Abuse of Majority

Shareholders have the right to challenge in court the validity of shareholder resolutions, if they violate the company's bylaws or the law.[97] Voting behavior violating either rules or standards of conduct for shareholders (such as the "abuse of majority") is considered a violation of the law and may result in nullification.[98]

For a minority shareholder to sue, he or she has to prove that the controlling shareholder had a conflict of interest that had an impact on the "social interest".[99] It seems that there is no other restriction to standing to sue: a shareholder may be able to bring a request for nullification of a shareholder meeting resolution even if he or she was not a shareholder at the time of the vote on the resolution, and even if he or she voted in its favor.[100]

Right to Sue on Behalf of the Corporation Under Criminal Law

One of the main criminal law tools against self-dealing in France is the provision against abuse of corporate assets (*abus de biens sociaux*).[101] It punishes the ones who "use the company's property or credit, in bad faith, in a way which they know is contrary to the interests of the company, for personal purposes or to favor another company or undertaking in which they have a direct or indirect interest."[102] The minority shareholder, acting derivatively in the name of the company (*action sociale ut singuli*), can initiate a criminal prosecution by filing a criminal complaint (*plainte avec constitution de partie civile*) with the Dean of the Examining magistrates of the Criminal first degree court (*Tribunal correctionnel*). In order for the complaint to be admissible, it is enough that the circumstances that gave rise to the complaint allow the examining magistrate to consider "possible" the existence of the damage to the company and the link with the alleged abuse of corporate assets.[103] Therefore, the examining magistrate is not free to choose to investigate or not, as long as he or she considers satisfied this standard, which is not very demanding. Case law makes actually clear that the examining magistrate has a "duty" to investigate. This rule was created by case law as soon as 1906 and did not

[97] Shareholders also have standing to sue in order to obtain nullification of a company's board resolutions. This is the case with respect to self-dealing transactions for which the ex ante authorization of the board of directors was not obtained (CA Amiens, December 1, 1966, Recueil Dalloz 1967, p. 234, n. Dalsace.).

[98] Cass. 3e. Civ. 18-6-1997: RJDA 11/97 N.1360; CA Paris 8-7-1982: BRDA 21/82.

[99] Cass. 3eme Civ. 18-6-1997: RJDA 11/97.

[100] These points are still unsettled. See CA Paris 8-7-1982: BRDA 21/82 p12; Cass. Com. 4-5-1993: RJDA 8-9/93 N.702, CA Versailles 20-5-1999: RJDA 2/00 N. 165.

[101] Article L. 242–246 French Code de Commerce.

[102] Article L. 242–246 French Code de Commerce

[103] Cass. Crim., November 5, 1991, Société Industrielle et Financière Bertin, Rev. sociétés 1992, n. B. Bouloc, p. 91. See also, Joly and Joly-Baumgartner (2002, p. 288).

change since.[104] This remedy is very attractive for minority shareholder since the examining judge holds the ability to access documents, and at no or very little cost for the minority shareholder (Conac et al. 2007).

As a consequence, criminal prosecutions for *abus de biens sociaux* are relatively frequent in France.[105]

Enforcement of French Rules in Practice

Although French rules regarding the enforcement of minority shareholders' rights seem quite protective of minority shareholders, French courts tend to always confirm majority shareholders' voting, even in conflict-of-interest, unless it falls under one of the instances in which the law expressly prohibits it (Conac et al. 2007).

Further, there are very few cases before the French courts relating to 'potential self-dealing transactions' (*Conventions Réglementées*).[106] Conac et al. (2007) argue that there are two possible explanations for the scarcity of such cases, which are possibly cumulative. According to them, "the first, optimistic explanation is that majority shareholders are deterred from entering into such contracts by fear of a refusal of the board of directors or disclosure to the shareholders. The second, more skeptical explanation is that those provisions are, in practice, strictly construed, so that a number of related-party transactions are entered into without complying with them and hence not even properly disclosed to shareholders (Enriques 2004; Schmidt 2004)".

Other differences between the US and French laws may worse be noted here. One is that a lawyer in France cannot under any circumstance solicit clients, nor introduce a cause of action without being mandated by a client to do so. A second, relating to the potential benefits of a claim, is that punitive damages are not allowed under French law. The only damages that are awarded are damages to compensate the plaintiff, i.e. to put the plaintiff in the position he or she would have been had the controlling shareholder not breached his or her fiduciary duties.[107] A third major issue that comes as a limit to the enforcement of controlling shareholders' fiduciary duties is that class actions are not allowed in France. Hence, every shareholder who wants to bring a claim has to be represented for her and takes the strategic decisions by herself, meaning a certain regular involvement. Not only those litigations may

[104] Cass. Crim. December 8, 1906, Laurent Atthalin, S. 1907.1.377 n. Demogue, D. 1907.1.207.

[105] Some statistics as to the effectiveness of the *abus de biens sociaux* are available. According to the French Department of Justice, there have been between 416 and 480 convictions for *abus de biens sociaux* in France every year from 2000 to 2006. Most criminal convictions relating to company law are for *abus de biens sociaux* and *banqueroute* (criminal bankruptcy) (Annuaire Statistique de la Justice 2006, 189).

[106] Article L. 225–238 of the French Commercial code, which imposes the approval of the board of directors before entering in certain types of self-dealing transactions.

[107] *Le contentieux de la responsabilité civile ayant pour finalité la réparation intégrale du seul préjudice réellement subi*.

require a high involvement from and be time consuming for minority shareholders, but they may also be costly, as it discussed in the following section.

Who Has to Pay for the Attorney Fees and When?

Depending on who has to pay for the attorney fees and when, it may change the economics of the litigation and also the effectiveness of the controlling shareholder's fiduciary duty rules.

In the US

According to the MBCA, upon termination of a derivative action, the court may order the corporation to pay the plaintiff's reasonable expenses (including attorney's fees) incurred in the proceeding if it finds that the action has resulted in as substantial benefit to the corporation. If the court finds that action was commenced or maintained without reasonable cause or for an improper purpose, it may order the plaintiff to pay reasonable expenses of the defendant.[108] More specifically, in McLaughlin v. Beeghly,[109] involving a breach of the fiduciary duty owed by a controlling shareholder to a minority shareholder in a shareholder's derivative action, the court explained that attorney's fees are recoverable, at the discretion of the trial court. The court added that holding otherwise would have diluted minority shareholders' rights.

In determining whether to grant attorney's fees, the primary consideration is whether or not a benefit was conferred upon the corporation as a result of the work undertaken by the attorneys.[110] Success, therefore, is a condition precedent to the allowance of attorney's fees.[111] An unsuccessful plaintiff is not entitled to attorney's fees or other expenses.[112] However, a party seeking attorney's fees need not necessarily be the prevailing party, nor must the derivative claim have proceeded to a final judgment or order.[113] Attorney's fees or other expenses of a shareholder incurred in maintaining a suit which results in a benefit to him or her or to other shareholders, but not to the corporation itself, are not chargeable against

[108] MBCA, §7.46.

[109] *McLaughlin v. Beeghly,* 84 Ohio App. 3d 502, 617 N.E.2d 703 (10th Dist. Franklin County 1992), American Law Reports (2008).

[110] *Pergament v. Kaiser-Frazer Corp.,* 224 F.2d 80 (6th Cir. 1955); *Williams v. Schatz Mfg. Co.,* 449 F. Supp. 147 (S.D. N.Y. 1977); *Milstein v. Werner,* 58 F.R.D. 544 (S.D. N.Y. 1973); *Krause v. Mason*, 272 Or. 351, 537 P.2d 105 (1975).

[111] *Murphy v. North American Light & Power Co.,* 33 F. Supp. 567 (S.D. N.Y. 1940)/

[112] *Levin v. Martin C. Levin Inv. Co.,* 123 Cal. App. 2d 158, 266 P.2d 552 (1st Dist. 1954).

[113] *Aubin v. Susi,* 149 N.C. App. 320, 560 S.E.2d 875 (2002), review dismissed, 356 N.C. 610, 574 S.E.2d 473 (2002) and review denied, 356 N.C. 610, 574 S.E.2d 474 (2002).

the corporation.[114] It follows that if the benefit from the defense of a suit inures to the shareholders individually,[115] or to the shareholders' attorney[116] rather than to the corporation, the attorney's fees incurred in the defense are not properly chargeable to the corporation. Also, courts do not award attorney's fees where the judgment in a derivative action only confers a benefit on an individual shareholder's personal interests, and not on the other shareholders or the corporation.[117]

Hence, it is practically impossible to determine ex-ante with certitude that minority shareholder attorney's fees will be chargeable against the corporation. This may dissuade minority shareholders from enforcing controlling shareholders' fiduciary duties.

In France

In France, not only class actions do not exist but also full contingent fee cases are not allowed, i.e. attorney fees cannot be dependent on the sole successful resolution of a client's case and payable from the judgment proceeds (*pacte de quota litis pure*).[118] Nonetheless, attorney fees may include additionally to an initial compensation for legal services an extra payment dependent on the resolution achieved or the service done (*pacte de quota litis mixte*).[119] According to case law, the extra payment may be superior to the principal payment, without any proportionality between the two.[120] But the extra payment must not be exaggerated, i.e. be above the common measure.[121] Partial contingent fees remains uncommon in France, maybe due to this incertitude on what is allowed and what is not.

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[114] *Aiple v. Twin City Barge & Towing Co*., 279 Minn. 22, 154 N.W.2d 898 (1967); *Leppaluoto v. Eggleston*, 57 Wash. 2d 393, 357 P.2d 725 (1960).

[115] *Angoff v. Goldfine*, 270 F.2d 185 (1st Cir. 1959); *Saltzman v. Technicolor, Inc.,* 51 F.R.D. 178 (S.D. N.Y. 1970); *Miller v. Ruth's of North Carolina, Inc.,* 68 N.C. App. 40, 313 S.E.2d 849 (1984); *Delaney v. Georgia-Pacific Corp*., 279 Or. 653, 569 P.2d 604 (1977).

[116] *Wright v. Heizer Corp.,* 503 F. Supp. 802 (N.D. Ill. 1980).

[117] American Jurisprudence (2011a, §2150); see also *Cziraki v. Thunder Cats, Inc.,* 111 Cal. App. 4th 552, 3 Cal. Rptr. 3d 419 (2d Dist. 2003), review denied, (Nov. 19, 2003).

[118] L. n# 71–1130, December 31, 1971, art. 10: JO, January 5, 1972 modified by L. n# 91–647, July 10, 1991: JO July 13, 1991.

[119] See L. n# 71–1130, December 31, 1971, art. 10: JO, January 5, 1972 modified by L. n# 91–647, July 10, 1991: JO July 13, 1991.

According to the *Conseil National des Barreaux (CNB)* and the *Barreau de Paris*, this mechanism is sufficient to protect lawyers' independence while facilitating access to justice by clients with limited means to pay for legal services (European Commission's Competition Directorate General 2003).

See also CA Paris, Ord. 1er president, March 7, 2000, n# 99/45205; Cass. 1ere civ., December 7, 1999, n# 97-16.971, n# 1937 P, n# 97-20.427.

[120] Cass. Civ. 1ere, July 10, 1995, n# 93-20.290: Bull. Civ. I, n#311.

[121] CA Paris, January 6, 1999: Rec. jurisp., September 1, 2001, M. Barreau.

Further, when plaintiff is granted the reimbursement of attorney's fees, the reimbursement is not based on the real amount paid by the minority shareholder but instead on a fixed rate basis, which is usually very low.[122]

The rules regulating attorney's fees is one of the major limitations to controlling shareholders' duties in France. It also explains why the filing of criminal complaints for abuse of corporate assets (*abus de biens sociaux*) is so successful, since the examining judge holds the ability to access documents, and the minority shareholder bears only no or very little cost for this kind of proceedings. But although minority shareholders bear few costs in criminal proceedings, the potential benefits are so limited compared to the potential damages in the US, as it is detailed above.

Conclusion – At the Level of Practice, How Does the US and French Principles Compare?

There are some major differences between the enforcement of the US and French rules. The three main differences are certainly first the absence of class actions under French law, second the effectiveness of civil law suits under US law versus the effectiveness of criminal law suits under French law and third the limits on contingent fees under French law.

First, with regards to class actions, under US law, in appropriate circumstances, a shareholder may sue as a representative of a class of shareholders, whereas class actions do not exist in France. A higher involvement in the litigation is then required for minority shareholders in France, while diminishing what is at stake in a single litigation for the controlling shareholder. Thus, the absence of class actions in France not only renders litigation by minority shareholders less likely but also diminishes the potential economic risk of each litigation for the controlling shareholders.

Second, the US legal system is structured around civil law suits whereas the French system includes both civil and legal law suits. Criminal law suits could be considered as more effective in France because they are less costly for minority shareholders, but are also less beneficial than US civil law suits with regards to the amount of potential awarded damages. Although the cost/benefice analysis is in favor of controlling shareholders in France, having a criminal record is generally enough for motivating controlling shareholders to comply with the law. Further, US courts develop extensive analysis of the business situations whenever self-dealing is proven. On the opposite, French courts tend to agree with plaintiffs only when transactions are directly forbidden by the law. Even though fiduciary duties of controlling shareholders are more extensive in France, they are applied more restrictively.

[122] Usually between 700 and 5,000 euros.

Third, the economics of the litigation for minority shareholders differs substantially in the US and in France. Not only punitive damages are never awarded under French law,[123] but also minority shareholders are not granted the reimbursement of the totality of their attorney's fees, and full contingent fees do not exist. With regards to this last issue, there is a controversy in France as well as in Continental Europe that the contingent fee system is an inducement for lawyers to bring suits that otherwise would not have been brought.[124] This may be true, but it is also true that many cases that may be meritorious are not brought except on the basis of a contingent fee. Whether and to what extent non-meritorious cases would be given undue encouragement is an irresolvable issue (Hazard and Dondi 2004). The contingent fee system results in cases being prosecuted that would not have been brought if the claimant had to bear the risk of paying a lawyer's fee at the beginning of the proceedings. As Hazard and Dondi (2004) pointed out, "the contingent fee gives the "average person" who has a valuable but risky claim an opportunity to obtain representation by highly competent counsel".

Hence, although France law has a larger set of rules to limit shareholders' powers and to increase their duties both toward the corporation and their fellow shareholders, courts interpret those rules restrictively, and lawsuits tend be more costly and less potentially beneficial for minority shareholders. As a result, although minority shareholders should be in theory better protected in France than in the US, they are in practice better off in the US than in France.

Conclusion

Duties should come as a balance to powers. In accordance with this principle, shareholders have more powers in France but also more fiduciary duties: whereas shareholders have more control on the board of directors in France, they may also be sued both under civil and criminal laws for breach of concepts closed to fiduciary duties (*abus de majorite, abus de minorite, abus de biens sociaux, etc.*).

This conclusion may be quite surprising as it is usually considered that minority shareholders are less protected in France than in the US (La Porta et al. 1998, 2000[125]; La Porta et al. 1999; Ben Ali and Latrous 2009). For instance, according to La Porta et al. (1999), minority shareholders are more exposed to a risk of expropriation by controlling shareholders in France and ownership structures tend to be more concentrated in France than in the US. This idea that minority shareholders are less protected in France than in the US finds all its meaning when

[123] Only compensatory damages are awarded.

[124] See e.g. European Commission's Competition Directorate General (2003).

[125] As articulated by those scholars, the rights of minority shareholders and creditors are less protected in civil law system (such as France, Germany and Italy) than in common law system (such as the US and the UK).

the enforcement of the rules on fiduciary duties are analyzed. Whereas the rules regulating controlling shareholders' fiduciary duties are more extensive in France, minority shareholders have fewer incentives to bring a claim than in the US. First, the economics of litigation are not as beneficial for minority shareholders in France than they are in the US, mainly because of the general rules of French procedures (discussed herein). Second, courts tend to read the statutory rules restrictively: whereas French courts will stop outright fraud through the application of statutes, they will find it more difficult to stop self-dealing transactions with a plausible business purpose (Johnson et al. 2000). In fact, although no concept closed to the "business judgment rule" exists under French law, French courts tend to confirm majority shareholders' voting, even in conflict-of-interest, unless it falls under one of the instances in which the law expressly prohibits it (Conac et al. 2007). According to Johnson et al. (2000), "regulating self-dealing behavior involves a basic trade-off between legal predictability and fairness. Civil law countries emphasize the predictability of the law and rely on statutory rules to govern self-dealing behavior. (...) In contrast, (...) the common law notion of fiduciary duty is associated with a high level of judicial discretion to assess the terms of transactions and to make rules." Whereas it is not clear whether the primary goal of French law is legal predictability, it is true that French courts rely primarily on the letter of the law and do not engage in detailed analysis of the business transactions, even when there is a conflict-of-interest, so long as it does not fall under one of the situations expressly prohibited by law. Thus, a better protection of minority shareholders in France would not only require changes in the civil procedure rules (with regards to allowing class actions), in the ethical rules (for attorney fees), but it would also require courts to be willing to assess business decisions, in particular in presence of conflicts of interests. The problematic of minority shareholders under US law is quite different. Although the continuous evolution of controlling shareholders' fiduciary duty rules is often necessary, legal predictability of whether a business transaction meets the intrinsic fairness standard is also essential. A more global conception of the rules regulating controlling shareholders' fiduciary duties would achieve this goal.

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Chapter 8
Harmonized Regulatory Standards, International Distribution of Investment Funds and the Recent Financial Crisis

Douglas Cumming, Gael Imad'Eddine, and Armin Schwienbacher

Introduction

> In 2007, the top four industries reporting fraud were insurance, retail and consumer, government/state-owned enterprises, and financial services. Indeed, due to the nature of their business, insurance and financial services have reported consistently high levels of fraud over the last 10 years. The 2009 survey also shows that financial services is the sector that has experienced the largest increase in fraud.
>
> – PricewaterhouseCoopers, 2009 Global Economic Crime Survey

The investment fund industry has recently come under strong scrutiny subsequent to various fraud scandals, the most prominent being the Madoff scandal. Investment funds have been criticized for their potential systemic risk implications in the current financial crisis. Regulators have called for more stringent control measures and increased transparency for investment funds, advocating that many of them being insufficiently regulated. Interestingly, UCITS funds, a pan-European structure of mutual funds, have been much less subject to fraud than other forms of investment funds. The regulation of UCITS has been developed with the intention to provide increased investor protection and transparency to investors, while facilitating cross-border distribution of funds within the European Union.

However, regulatory fragmentation has long limited international sales of investment funds to retail investors. In Europe, regulatory fragmentation has given rise to much smaller funds. In 2001, for example, the average investment fund in the U.S. was €910 million, but in Italy, the Netherlands, the UK, Germany and France average fund sizes were €417 million, €389 million, €248 million, and €233 million,

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respectively, and all other European countries have substantially smaller average fund sizes (Heinemann (2002)). In 2009, the European Fund and Asset Management Association (EFAMA) reported that there are 32,000 funds registered in Europe, four times more than in the U.S., even though the U.S. mutual fund market is larger. The fragmented mutual fund market structure in Europe gives rise to nontrivial costs. European funds do not capture the benefits of scale economies in fund management that are enjoyed by their larger U.S. counterparts. It is well documented that expense ratios (the ratio of a fund's operating expenses over asset value under management) are a significantly declining function of fund size; U.S. fund sizes enable expense ratios to be roughly 50–75% smaller than their European counterparts (SEC 2000). Further, regulatory fragmentation inhibits competition among promoters at the European level and hence potential costs to investors. While regulators have brought about changes to alleviate such inefficiencies, to date there has been a dearth of academic attention and empirical scrutiny of attempts to mitigate regulatory fragmentation in the international sales of investment funds.

In this paper, we empirically investigate the impact of The Undertakings for Collective Investment in Transferable Securities (UCITS) on international distributions of European investment funds. We examine the scope of distribution of investment funds and the extent to which harmonized regulation improves the efficiency of the European investment fund industry. As a cluster of independent nations and an incompletely unified entity, Europe is an appropriate setting to test the effect of supra-national regulations on the development of infra-national activities. Further, benefits of regulatory changes in Europe potentially extend beyond Europe's borders, notably to Asian and Latin American countries.

Under UCITS, a fund domiciled in one of the EU countries only need to go through a simplified registration process at the national regulator of another EU country (so-called notification procedure) for obtaining the right to sell units of the funds (i.e., distribute) in this country. The money collected can then be invested in securities based on the specific investment strategy of the fund (for instance worldwide, although the money comes from a selected number of EU countries only).

The first set of EU rules, UCITS I, was adopted in 1985 to allow open-ended funds that invest in transferable securities to be subject to harmonized regulations throughout Europe. However, Member States created obstacles to UCITS I that limited the ability of a fund to distribute cross-border. UCITS II was an ambitious attempt at curtailing such problems, but too ambitious to secure agreement from Member States and therefore never implemented. In 2001, UCITS III was introduced, which brought about regulatory changes to facilitate cross-border distributions within the European Union. By 2005, approximately €5 trillion were invested in collective investments throughout Europe, of which approximately 70% were UCITS funds.

UCITS III comprised two directives: a "Management Directive" and a "Product Directive". The Management Directive enabled a simplified and more cost-efficient prospectus that permitted a greater scope of activities for management companies to operate throughout Europe. The Product Directive enabled a wider range of financial instruments and permitted UCITS money funds, derivative funds, index-tracking funds, and funds-of-funds. UCITS III, however, was not without barriers to integration, as highlighted by the changes introduced in the January 2009 UCITS

IV Directive approved for implementation in 2011 (Ferguson 2009). UCITS IV differs from UCITS III by enabling more cost effective notification procedures, key investor information, and introducing frameworks for fund mergers.

If and how regulation affects international fund notification – i.e., the 'law matters' view – is the focus of our hypotheses and tests. We expect structure of UCITS III caused unlevel international distributions of different types of funds: UCITS III gave rise to a larger scope of distribution for funds that can justify the notification costs.

We empirically test these propositions with a new comprehensive dataset of European investment funds over the period 2002–2009, which specifically covers the UCITS III period. Our results show that UCITS funds are more widely distributed than non-UCITS funds, indicating that the gain from facilitated cross-border distribution offsets regulatory costs imposed by a reduced choice of permissible securities and trading strategies under UCITS regulation. Moreover, top ranked fund promoters have much wider distributions, in support of the view that the regulatory costs of international distributions are not equal for all funds; larger funds can better economize on such costs than their smaller counterparts. This result is robust to controlling for the possible endogeneity of the fund promoter's decision to structure the fund as a UCITS. Second, the data indicate strong evidence that funds domiciled in smaller countries are more likely to have a greater number of international distributions. Most of these distributions are attributable to Luxembourg and Ireland, the two most important centers of domiciliation for mutual funds in Europe.

We also show that the recent financial crisis limited the increased cross-border distribution of UCITS funds. Although UCITS funds launched since summer 2007 continue to be more widely distributed internationally than non-UCITS funds, the difference has become smaller. This seems mostly attributable to equity funds, following the general trend in the markets.

Overall, we document that despite these regulatory impediments under UCITS III, it nevertheless has become extremely well regarded as a vehicle to distribute funds outside of Europe, due to its superior investor protection. Consequently, in the past few years, several Latin American and Asian countries now allow European UCITS funds to be distributed in their countries. The distributions occur mainly in Chile, Hong Kong, Singapore, and Taiwan. In this paper, we empirically show that much of this trend is attributable to top tier promoters. Interestingly, notifications of UCITS funds in Asian countries are more often done by U.S. promoters that domicile their funds in the European Union relative to European promoters. We observe a similar pattern of notifications of UCITS funds in Latin America.

Our paper is related to a growing body of international evidence that shows regulation is important for fund distribution. Heinemann (2002) discusses the benefits of UCITS III for international fund distribution over that of UCITS I, but does not examine barriers to international notification and/or test for the effect of such barriers. Jayaraman et al. (2002) and Ding (2006) document the benefits of mutual fund mergers, but do it in a U.S. context where international distribution cannot be addressed. Frank et al. (2004) examines disclosure regulation and active

fund performance in relation to copycat funds (see also Alexander et al. 2007; Kacperczyk et al. 2008). Romero-Avila (2007) and Cumming et al. (2010) examine the effect of regulatory harmonization on the growth of the banking industry and stock market development in Europe, respectively, but do not examine the mutual fund industry. Froot et al. (2001) and Bergstresser and Poterba (2002) examine portfolio flows of international investors and fund flows. Cumming and Dai (2009) examine the impact of regulation on the flow-performance relation between institutional investors and hedge fund managers, but do not consider mutual funds or retail investors. Khorana and Servaes (1999) examine initiation of mutual funds in the US, indicating that larger promoters (fund families) enjoy economies of scale and scope. Extending this analysis, Khorana et al. (2005, 2009) examine the size of and fees in the mutual fund industry around the world (see also Chordia 1996), but do not examine the effect of UCITS on international distributions. Our analysis complements these studies by showing that regulation plays a pronounced role in understanding the economics of the mutual fund industry around the world. Our paper is the first to examine international distributions of mutual funds, and we do so by examining the timely context of UCITS as it currently spreads around the world.

This chapter is organized as follows. First, we provide information on the European investment fund market and its regulatory environment. Second, we summarize our testable hypotheses. Third, we describe the data. Forth, summary statistics on the European investment fund industry are provided. Fifth, we perform multivariate empirical analyses of the scope of international distributions. Sixth, we provide complementary evidence on UCITS funds notifications outside of Europe. Finally, we conclude.

The Regulatory Environment

In this section, we explain the regulatory environment of the European investment fund market. Specifically, we detail the evolution of the UCITS regulation that targets the retail market (although institutional investors also invest significantly in UCITS funds). The purpose behind the UCITS directive was to allow a wider, cross-border distribution of funds in Europe to increase the potential market, but to do so in a setting that provides stronger investor protection and information disclosure requirements. Thus, management companies (promoters) can sell their products on a large scope to retail investors, but they must comply with a certain set of rules that limit the type of instruments they can hold as well as the investment strategies they can follow.

Recognizing the importance of a harmonized market in Europe for investment funds, the European Commission has pushed for regulation that facilitates cross-border distribution of fund products and does not generate high costs. In 1985, the directive 85-611/EEC (UCITS I), which codifies the notion of an European passport for the retail market for mutual funds, is adopted to ease the distribution

of open-ended funds (throughout the European Union (formerly the European Economic Community (EEC))). The UCITS legislation is not a single text but a set of EU directives covering specific issues. As many other motivations for EU regulations, UCITS was also thought as a mean to foster competition among promoters at the European level. This competition would lead to a more efficient industry.

A fund, which complies with the conditions stated by UCITS I, can be notified for sale in another country of the EEC quickly after notifying the local financial authority. There is no need to set up a domiciled fund to target a new country in order to reduce the fixed costs associated with the management of a separate fund. As a result, fixed costs are reduced and economies of scale can be achieved. This cost reduction was intended to benefit retail investors in the context of a competitive market.

To benefit from the European passport, the fund has to comply with certain conditions. First, Article 2 gives the list of activities that are outside the scope of the UCITS regulation, e.g., excluding closed-ended funds.

Article 19 defines the asset types that are allowed in the composition of a UCITS fund. It focuses mainly on securities traded in financial markets, but with a strong restriction on derivative instruments. As stated in Article 21, the Member States may authorize UCITS to employ techniques and instruments relating to transferable securities under the conditions and within the limits which they lay down provided that such techniques and instruments are used for the purpose of efficient portfolio management. The directive also states a series of investment behaviors, like the 5% limit for a single issuer. This restriction could exclude index tracker funds. Article 36 limits borrowing ability to 10%. These prudential measures constitute the core of the directive in terms of ensuring higher investor protection. As Anderberg and Bolton (2006) indicate, in this prudent spirit, undefined words have been interpreted in a restrictive way. For instance, transferable securities are translated as only listed equities and bonds, while derivatives are limited to situations required for "efficient portfolio management". The exclusion of money market instruments and cash has cumbersome consequences in terms of day-to-day management.

All these limitations and the fact that the Member States had diverse policies with regard to national requirements limited the widespread use of UCITS I. The need for improvements led to discussions for a UCITS II directive in the early 1990s. The draft of UCITS II, regarded as highly ambitious, could not be adopted due to a lack of consensus. The next step occurred in 1998 with the proposal of two directives: the management directive (2001/107/EC) and the product directive (2001/108/EC). Together, they were known as UCITS III and were adopted in 2001.

The management directive improved the European passport by extending it to the management companies that were not covered by the 85/611/EEC directives. Under point 5 of the management directive a management company can carry on the services for which they have received authorization throughout the European Union by establishing branches with the freedom to provide those services. It also expanded the range of authorized activities for the management company in order to allow economies of scale. It allows a certain degree of delegation to another party. This is indeed important to notify cross-border; i.e., outside the

country of domicile. Some activities might require a local team but the delegation allows for avoidance of this cost. Another aspect of the management directive is the minimum capital requirement to guarantee the safety of investors. Also, the management directive introduced the simplified prospectus instead of the complete prospectus. The simplified prospectus aims at making the publication of information in the different Member States easier while still giving investors the most relevant information for enabling sound investment decisions.

As for the product directive, it has clarified the definition of transferable securities, which includes equities, bonds and derivatives, as long as they are required for efficient portfolio management. As explained by O'Neil (2006), with UCITS III, fund managers can choose to implement a sophisticated fund strategy, which allows using certain tools common to the hedge fund industry. It still prohibits short sales but through derivatives sophisticated funds can duplicate the effect of short selling. New types of funds are allowed to apply for the UCITS label, such as money market funds, funds-of-funds or derivative funds. However, derivative funds must meet certain conditions, like investing in liquid derivatives and minimizing counterparty risk. If a fund registers as a tracker fund, then the limit of the exposure to a single issuer is raised to 20%. Overall, the product directive proposes a larger range of permissible investments. Because this range allows the use of various strategies and products, the range has a direct impact on the scope of products and funds affected by the UCITS regulation. With UCITS III, a larger fraction of the asset management industry can apply for the European passport and therefore be distributed more easily. The UCITS regulation has become attractive for hedge fund managers even if it is still more constrained than some strategies used in the main hedge fund industry.

Since UCITS III, the notification procedures within the European Union have been largely facilitated for UCITS funds. The impact on the number of notifications is expected to increase for two reasons: first, because more types of funds are eligible, and second, because the notification procedure is eased (Marco 2005). The UCITS regulation represents a harmonization of the rules, and uses high standards in terms of investors' protection.

However, even if a directive is higher in the hierarchy of norms compared to local laws, the Member States have to transcribe the European text into their local regulation. This process allows for interpretation and adaptation of some parts. For example, the simplified prospectus is not clearly defined by the directive. As a result, countries have adopted various definitions of the "simplified" prospectus and in many cases turned them into more complex ones. As stated by a Luxemburg Law firm, "In practice, the simplified prospectus failed to meet those expectations, as it is often very lengthy, and implemented differently across the EU." For the notification procedure that meant producing many different prospectuses, one for each country, rather than one simplified prospectus valid in all countries.

A CRA International (2006) survey on cost savings reveals significant differences across countries in terms of notification procedures and average delays. According to practitioners quoted in the CRA survey (2006), in France it usually

takes 1 month to register a fund, but it takes close to 3 months in Italy, the delay can be 6 months in Germany, but it usually only takes 3 weeks in Luxemburg. The need to translate the prospectus is a cost that prevents notifications outside the country of domiciliation but might explain the regional clustering of notifications. As for non-UCITS funds, they are regulated by local law. Luxemburg and Ireland prove to be highly efficient in that matter. For example, a Qualified Investor Fund (a non-UCITS structure) in Ireland can be established within 6 weeks and benefit from a very attractive tax-regime for the funds as well as for investors. Moreover it can conduct short selling and use leverage without restriction.

Nevertheless, UCITS III does not solve all the issues and the adoption of UCITS IV (scheduled for 2011) is an attempt to overcome some of them. A major point that is not contained in the UCITS III regulation is the possibility of cross-border mergers of funds. To really allow a restructuring at the European level of funds, and to reach a critical size in order to make economies of scale, the regulation of cross-border mergers need to be eased. But since the merger is made possible by the fact that one fund acquires the assets of another fund, the UCITS funds need to be allowed to buy "units" from a fund domiciled outside its home country. The upcoming UCIT IV addresses the issue of restructuring by making the cross-border merger easier and also by introducing the master-feeder structure to the scope of eligible UCITS funds (Anderberg and Brescia 2009).

Despite these limitations, UCITS III has allowed the UCITS label to become a standard that goes beyond the boundaries of the European Union. In Asia it is regarded as a quality standard as an EFAMA survey shows and as the Hong Kong Investment Fund Association indicates on its website.

Testable Hypotheses

In this section, we summarize three testable hypotheses that UCITS III has given rise to unequal international distributions of investment funds; that is, the scope of distribution depends on fund structure. First, UCITS funds have greater potential for reaching a broader scope of distribution as a result of the facilitated notification procedures that the UCITS III directive has enabled since 2001. UCITS III simplified the prospectus requirements for funds, which lowers costs and increases the scope of activities for management companies to operate throughout the European Union. UCITS III also enables a wider range of financial instruments than UCITS I by permitting UCITS money funds, derivative funds, index-tracking funds, and funds-of-funds. Still, this range is more restrictive than many other national fund structures that may allow strategies that make investor protection enforcement more problematic and risk of fraud more likely. We expect a greater scope of distribution for UCITS funds as compared to non-UCITS funds, which do not face the same simplified notification procedures. Further, we expect the benefits of UCITS regulation to be pronounced for countries with weaker legal standards, such as in Asia as well as in emerging markets.

Hypothesis 1 (UCITS): UCITS funds are more likely to have a larger scope of distribution.

Second, although UCITS III provides an opportunity to increase the scope of distribution it also bears some costs, because UCITS funds must comply with a set of regulations that limit the range of products and investment strategies available (Zetzsche 2008). With respect to the sophistication of investors, non-UCITS funds can at times benefit from more flexible regulation (or lack of regulation). This structure implies that there exist cost barriers to internationalization for funds, even UCITS funds, and these costs will be relatively more discouraging to funds managed by smaller promoters. This is likely to be the case for UCITS as well as non-UCITS funds. Top promoters can have better access to distribution channels internationally, enabling them to achieve a larger distribution scope at lower costs.

Hypothesis 2 (Top Promoters): Funds of top tier promoters will have more notifications and more cross-border fund distributions.

However, given the lower costs of cross-border notifications for UCITS funds, the effect is likely to be stronger for UCITS funds than non-UCITS funds. Therefore, we test Hypothesis 2 separately for both UCITS and non-UCITS funds.

Third, an important determinant of whether a fund will be distributed cross-border and thus notified in more countries is the size of the country of domiciliation itself. In line with the macroeconomic findings provided by Khorana et al. (2005), we expect funds domiciled in smaller countries to more often seek cross-border distribution as a way to achieve their critical fund size. If the costs of international notification are zero or trivially small, then there will be no systematic difference in notifications with respect to country size. But where there are nontrivial costs of notification, funds in smaller countries are more likely to bear higher costs of notification.

Hypothesis 3 (Size of Country of Domicile): Funds domiciled in smaller countries are more likely to seek international notification and thereby more notifications.

These three hypotheses are empirically examined for the first time with a comprehensive dataset of European funds that is introduced in the next section. We further investigate the impact of the recent financial crisis on UCITS and non-UCITS find distribution.

Data

Our analysis builds on data provided by Lipper, a Thomson Reuters company specialized in collecting worldwide information on mutual funds. The full sample includes all the investment funds launched from 2002 onwards domiciled in Austria, Belgium, Czech Republic, Denmark, France, Germany, Finland, Ireland, Italy, Latvia, Luxembourg, the Netherlands, Norway, Poland, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom. These are the EU countries covered

in the database and definitely are the most important countries of domiciliation in Europe. The full sample includes UCITS as well as non-UCITS funds. To avoid a sample selection bias, we also include funds that have been merged or liquidated already. However, we intentionally exclude funds launched prior to 2002, because of the major changes in regulation that occurred in 2001. Our sample was extracted in September 2009.

The database includes, among other things, information on year of launch, year of closure (if inactive at the meantime), country of domiciliation, the list of countries where the fund has been notified, Net Asset Value (NAV) for funds that remain active (as of August 31, 2009, except for a very few), fund type, geographical focus of investment, and several other key aspects. It is important to note that this database gives us a picture of the situation as of August 31, 2009. All the variables are defined in Table 8.1.

Throughout the report we distinguish between funds launched by the largest promoters and those launched by smaller promoters. To build the list of the largest promoters, we build a league table with our complete sample of funds, ranked by total number of funds launched. This approach of building league tables is supported by studies done in other areas such as the effect of reputation on IPOs and bond underwriting (see, e.g., Fang 2005). Based on this league table, we define the top-50 promoters as being the "largest" and "most reputable" ones. In the analysis, these are defined by the dummy variable Top-50 Promoter.

Summary Statistics

In this section, we provide an overview of the investment fund industry in Europe, with special focus on notifications. As a starting point, it is useful to provide more statistics on notifications of investment funds. These statistics give an overview of the full sample we use and how the scope of distribution has evolved over time. Table 8.2 presents a set of summary statistics for the full sample as well as for the differences between UCITS versus non-UCITS funds and national (i.e., funds with a single notification only, namely in the country of domicile) versus cross-border (i.e., funds with at least two notifications) funds. For dummy variables, the values reported are fractions and not percentages. The total number of investment funds included in our sample is 22,634, of which 58.9% are UCITS funds (Table 8.2, section "Further Fund Characteristics"). Since 2002, 76.7% of all the funds are still actively managed, while 16.4% have been liquidated and 6.9% have merged (Table 8.2, section "Fund Current Status").

In terms of domiciliation (section "Fund Domiciliation" in Table 8.2), Germany and Italy have very few funds domiciled in their country although they have relatively large markets (e.g. compared to Switzerland, which has roughly the same number of funds although the country is significantly smaller). This level contrasts strongly with France and Spain, which have a significantly larger fraction of funds domiciled in their countries. Although funds domiciled in France are

Table 8.1 Definition of variables

Nbr. notifications	Number of countries in which the fund is notified as of September 2009
Cross-border (dummy)	Dummy variable equal to one if the fund is notified outside its country of domiciliation, and zero otherwise
Population	Level of population implied by the achieved notifications by the fund as percentage of the Euro-zone population
Current status: active (dummy)	Dummy variable equal to one if the fund is currently still active, and zero otherwise
Current status: merged (dummy)	Dummy variable equal to one if the fund has merged, and zero otherwise
Current status: liquidated (dummy)	Dummy variable equal to one if the fund has been liquidated, and zero otherwise
Fund age (in years since launch)	Age of the fund (in years) as of September 2009, calculated since year of launch (vintage year)
Top-50 promoter (dummy)	Dummy variable equal to one if the fund is from one of the 50 largest fund promoters (based on number of funds launched in the European Union), and zero otherwise
Promoter size	Number of investment funds that the promoter has launched (based on the complete Lipper database) until September 2009; the variable is an alternative measure of promoter reputation
UCITS fund (dummy)	Dummy variable equal to one if the fund is a UCITS fund, and zero otherwise
Equity fund (dummy)	Dummy variable equal to one if the fund is an equity fund, and zero otherwise
Bond fund (dummy)	Dummy variable equal to one if the fund is a bond fund, and zero otherwise
Mixed fund (dummy)	Dummy variable equal to one if the fund is a mixed fund, and zero otherwise
Money market fund (dummy)	Dummy variable equal to one if the fund is a money market fund, and zero otherwise
Other fund (dummy)	Dummy variable equal to one if the fund is any other type of fund, and zero otherwise
Domiciliation dummies	Dummy variables for the different countries of domiciliation; i.e., Austria, Belgium, Czech Republic, Denmark, France, Germany, Finland, Ireland, Italy, Latvia, Luxembourg, the Netherlands, Norway, Poland, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom
Population of domicile	Level of population in 2007 of the country where the fund is domiciled as percentage of the Euro-zone population (Source: World Bank database)
Promoter is a commercial bank	Dummy variable equal to one if the parent promoter is a commercial bank, and zero otherwise (e.g., an investment company or an insurance company)
Swiss promoter	Dummy variable equal to one if the parent promoter is located in Switzerland
Non-European promoter	Dummy variable equal to one if the parent promoter is located outside Europe
GDP growth rate at launch year	GDP growth rate in the country of domiciliation of the fund at year of launch (Data Source: World Bank)
Euribor rate at launch year	1-year Euribor rate at year of fund launch

Table 8.2 Summary statistics

	Full sample		UCITS funds only	Non-UCITS funds only		National funds only (Nbr. Notif. = 1)	Cross-border funds only (Nbr. Notif. > 1)	
Variables	Mean	Std. Dev.	Mean	Mean	P-value: UCITS vs. non-UCITS	Mean	Mean	P-value: national vs. Cross-border
Fund current status:								
Current status: active (dummy)	0.767	0.423	0.781	0.747	0.000	0.773	0.753	0.001
Current status: merged (dummy)	0.069	0.254	0.083	0.049	0.000	0.070	0.066	0.184
Current status: liquidated (dummy)	0.164	0.370	0.136	0.204	0.000	0.156	0.181	0.000
Fund domiciliation:								
% funds domiciled in Luxembourg	0.293	0.455	0.395	0.147	0.000	0.077	0.686	0.000
% funds domiciled in France	0.182	0.386	0.133	0.253	0.000	0.260	0.048	0.000
% funds domiciled in Germany	0.053	0.224	0.058	0.046	0.000	0.068	0.027	0.000
% funds domiciled in Austria	0.066	0.249	0.053	0.085	0.000	0.086	0.032	0.000
% funds domiciled in Slovenia	0.002	0.045	0.000	0.005	0.000	0.003	0.000	0.000
% funds domiciled in the Czech Republic	0.003	0.054	0.001	0.006	0.000	0.004	0.001	0.000
% funds domiciled in Ireland	0.067	0.250	0.089	0.036	0.000	0.016	0.153	0.000
% funds domiciled in Spain	0.082	0.275	0.135	0.006	0.000	0.130	0.000	0.000

(continued)

Table 8.2 (continued)

	Full sample		UCITS funds only	Non-UCITS funds only		National funds only (Nbr. Notif. = 1)	Cross-border funds only (Nbr. Notif. > 1)	
Variables	Mean	Std. Dev.	Mean	Mean	P-value: UCITS vs. non-UCITS	Mean	Mean	P-value: national vs. Cross-border
% funds domiciled in Italy	0.027	0.162	0.025	0.029	0.088	0.032	0.000	0.000
% funds domiciled in the UK	0.074	0.262	0.064	0.089	0.000	0.106	0.020	0.000
% funds domiciled in Switzerland	0.035	0.183	0.000	0.084	0.000	0.052	0.005	0.000
% funds domiciled in Latvia	0.001	0.032	0.000	0.002	0.004	0.001	0.001	0.120
% funds domiciled in Finland	0.014	0.117	0.013	0.015	0.192	0.017	0.009	0.000
% funds domiciled in Norway	0.006	0.078	0.007	0.005	0.316	0.009	0.001	0.000
% funds domiciled in Denmark	0.011	0.102	0.012	0.009	0.025	0.016	0.002	0.000
% funds domiciled in the Netherlands	0.007	0.085	0.000	0.017	0.000	0.011	0.000	0.000
% funds domiciled in Belgium	0.055	0.229	0.006	0.127	0.000	0.081	0.012	0.000
% funds domiciled in Sweden	0.009	0.097	0.006	0.014	0.000	0.012	0.004	0.000
% funds domiciled in Slovakia	0.001	0.024	0.001	0.000	0.432	0.001	0.000	0.009
% funds domiciled in Poland	0.011	0.106	0.003	0.023	0.000	0.018	0.000	0.000

Fund type:								
Equity fund (dummy)	0.330	0.470	0.379	0.260	0.000	0.280	0.428	0.000
Bond fund (dummy)	0.156	0.363	0.180	0.123	0.000	0.137	0.195	0.000
Mixed fund (dummy)	0.214	0.410	0.206	0.226	0.000	0.241	0.172	0.000
Money market fund (dummy)	0.051	0.219	0.054	0.046	0.008	0.055	0.044	0.000
Other fund (dummy)	0.237	0.425	0.178	0.322	0.000	0.271	0.156	0.000
Further fund characteristics:								
Nbr. notifications	2.637	3.746	3.654	1.178	0.000	1.000	5.641	0.000
Cross-border (dummy)	0.355	0.478	0.521	0.116	0.000	0.000	1.000	–
Population	0.239	0.283	0.329	0.113	0.000	0.122	0.463	0.000
Fund age (in years since launch)	3.767	2.079	3.662	3.922	0.000	3.760	3.763	0.901
UCITS fund (dummy)	0.589	0.492	1.000	0.000	–	0.444	0.865	0.000
Promoter characteristics:								
Top-50 promoter (dummy)	0.563	0.551	0.5583	0.5706	0.091	0.5367	0.6207	0.000
Promoter is a commercial bank	0.636	0.481	0.5749	0.7222	0.000	0.7100	0.5187	0.000
Swiss promoter	0.098	0.298	0.0838	0.1189	0.000	0.0744	0.1359	0.000
Non-European promoter	0.069	0.254	0.0960	0.0312	0.000	0.0348	0.1241	0.000
Nbr. observations	22,634		13,336	9,298		14,364	8,033	

All the variables are defined in Table 8.1. For the last three variables (Promoter is a Commercial Bank, Swiss Promoter, and Non-European Promoter), we only have the information for the 200 largest promoters and thus the number of observations is 14,784 for full sample (out of the 22,634 obs.). The first two columns give summary statistics of fractions (mean and standard deviation) for the full sample, the third column means for UCITS funds only (i.e., the subsample UCITS Fund = 1), the forth column means for non-UCITS funds only (i.e., the subsample UCITS Fund = 0), and the fifth column provides p-values of the difference in means between the subsample of UCITS funds and non-UCITS funds. The sixth to eighth columns provide similar statistics and tests for differences in means between national funds (Nbr. Notifications = 1) and cross-border funds (Nbr. Notifications > 1)

largely non-UCITS funds, 1.33 non-UCITS funds for every UCITS fund, the opposite is observed in Spain, 0.03 non-UCITS funds for every UCITS fund. This pattern also impacts decisions on the countries of notifications, because only in France is the number of notifications larger for non-UCITS funds than UCITS funds (25.3% of all the non-UCITS funds, 13.3% of all the UCITS funds). Overall, these statistics reflect the type of funds predominantly domiciled in the respective countries, because notifications are made more easily with UCITS funds.

An important reason for Spain to have so many UCITS funds is that it has regulation that largely builds on the UCITS regulation. The Spanish market only witnessed strong development in recent years after UCITS III was introduced. As such, Spanish regulators largely implemented European UCITS III regulations at the national Spanish level. Ninety-eight percent of Spanish-domiciled funds are UCITS-compliant, and nowhere else notified; 100% of Spanish-domiciled funds are national funds.

As for France, funds domiciling there can select among a broader range of vehicles. Because many funds are in fact intended for the domestic market, it is not surprising that fewer are UCITS-compliant, given the choice of possible vehicles.

In terms of comparison UCITS funds versus non-UCITS funds (third to fifth columns in Table 8.2), we observe that equity and bond funds are more often UCITS funds, but mixed assets and money market funds are more often structured as non-UCITS funds. This is likely to be substantially driven by regulation that defines the set of permissible assets. Interestingly, funds from the top-50 promoters are proportionately as much UCITS funds (55.83%) as non-UCITS funds (57.06%). Note however that these are unbalanced data; i.e., not weighted on asset value but in absolute number of funds launched. This distribution changes the perspective as UCITS funds are substantially larger, as measured by NAV, than non-UCITS funds.

Most UCITS funds are domiciled in Luxembourg (39.5%), again measured in number of funds. Other studies traditionally report values weighted on asset value, in which case the dominant position of Luxembourg appears even stronger, because funds domiciled in Luxembourg have an above average NAV. A CRA report (CRA International 2006) prepared for the European Commission about the motives for domiciliation choices offers interesting insights about possible reasons for choosing one country over another. The report points out some drivers that seem to favor Luxembourg: its easier authorization process, tax treatment, overall regulation, and documentation obligation. Moreover, Luxemburg appears to have a more flexible regulator trying to meet the needs of the industry (the Commission de Surveillance du Secteur Financier, CSSF), long experience in the field of fund regulation, and a more neutral ground for selling financial products abroad.

The last two columns in Table 8.2 relate to the geographical scope of fund distribution. As expected, UCITS funds are more often cross-border funds (i.e., funds notified in at least two countries), given the regulatory benefits attached to UCITS funds in terms of notification procedure (Hypothesis 1). More interestingly, overall there are far more national funds than cross-border funds domiciled in Europe (14,364 as opposed to 8,033). National funds appear generally to be liquidated or merged more often than UCITS funds, although the differences are

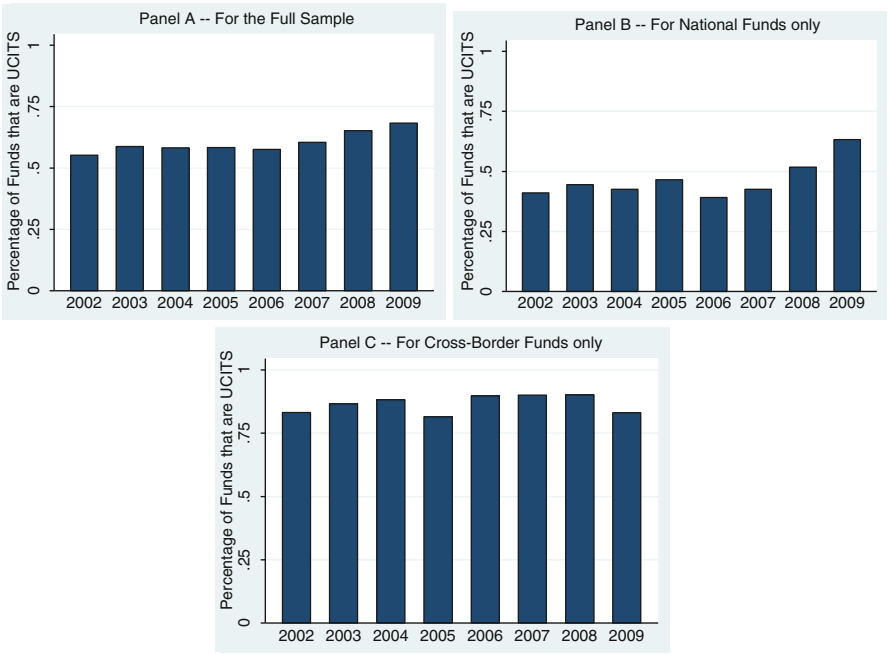

Fig. 8.1 Panel **A**–**C**: These figures show the proportion of investment funds that are UCITS funds by vintage year (year of launch). The x-axis "year" refers to launch/vintage year. Panel **A** is for the full sample, Panel **B** is for "national" funds only (i.e., only one notification, namely in the country of domiciliation) and Panel **C** is for cross-border funds (i.e., funds notified in more than the country of domicile)

not that substantial at first sight in Table 8.2. Cross-border funds are proportionately more often equity and bond funds, while national funds are more often mixed asset and money market funds.

Thus, most cross-border funds are UCITS funds. This again is in line with the benefits of UCITS funds, which allow for easier notification across the European Union through simplified documentation. Moreover, bond and equity funds are more often cross-border funds, usually as a result of being UCITS funds. Funds initiated by top-50 promoters are more often present among cross-border funds than national funds in relative terms (62.07 versus 53.67%, respectively). Most of these findings are confirmed by our correlation matrix presented in Table 8.3.

Figure 8.1 shows the proportion of investment funds over time that are UCITS funds. Although, the proportion of UCITS funds appears to be relatively stable over time (Panel A), a slight trend seems noticeable towards more UCITS funds for national funds (Panel B). For instance, almost 75% of all new "national" funds created in 2008 and 2009 were UCITS funds, although this fraction was below 60% before 2005. In contrast, this fraction seems quite stable for true cross-border funds, with the exception of 2009.

Figure 8.2 shows the number of funds newly launched, by year, from 2002 onwards (recall that 2009 is only partial and therefore difficult to compare with

Table 8.3 Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Nbr. notifications	1.000													
(2) Cross-border (dummy)	0.595*	1.000												
(3) Population	0.920*	0.579*	1.000											
(4) Current status: active (dummy)	0.014	−0.024*	0.025*	1.000										
(5) Current status: merged (dummy)	0.001	−0.011	0.011	−0.494*	1.000									
(6) Current status: liquidated (dummy)	−0.017	0.035*	−0.036*	−0.803*	−0.121*	1.000								
(7) Fund age (in years since launch)	0.029*	−0.001	0.002	−0.309*	0.161*	0.244*	1.000							
(8) Top-50 promoter (dummy)	0.095*	0.077*	0.120*	−0.021*	0.014	0.015	−0.007	1.000						
(9) UCITS fund (dummy)	0.325*	0.416*	0.376*	0.039*	0.065*	−0.090*	−0.061*	−0.095*	1.000					
(10) Equity fund (dummy)	0.188*	0.155*	0.196*	0.020*	0.003	−0.025*	−0.018*	−0.078*	0.125*	1.000				
(11) Bond fund (dummy)	0.087*	0.079*	0.065*	−0.015	0.009	0.011	0.045*	0.005	0.077*	−0.302*	1.000			
(12) Mixed fund (dummy)	−0.119*	−0.077*	−0.097*	0.064*	0.001	−0.073*	−0.060*	−0.094*	−0.024*	−0.366*	−0.225*	1.000		
(13) Money market fund (dummy)	−0.025*	−0.024*	−0.009	−0.036*	0.023*	0.026*	0.038*	0.038*	0.018*	−0.162*	−0.099*	−0.120*	1.000	
(14) Other fund (dummy)	−0.145*	−0.142*	−0.164*	−0.024*	−0.023*	0.042*	0.020*	0.148*	−0.167*	−0.391*	−0.240*	−0.291*	−0.129*	1.000

All the variables are defined in Table 8.1
Significance level: * for 1%

previous years). The top panels are for UCITS funds and the three others for non-UCITS funds. In each case, we provide the number of new funds overall, for the top-50 promoters only, and for all other promoters.

Overall, the number of newly domiciled UCITS funds increases over time until 2006, then decreases slightly in 2007 and sharply in 2008. This is clearly the result of changed market prospects. The distinction between the top-50 promoters and other promoters is interesting. Both seem to have behaved similarly, as both reached their peak in 2007. However, the increase from 2006 to 2007 seems weaker for the top tier promoters. This raises the question of whether the top-50 promoters are better at reacting to changes in market conditions and whether the sharp increase in other promoters is largely driven by existing promoters or newcomers that entered the market late. Interestingly, this pattern can also be found for non-UCITS funds, as shown in the three lower panels of Fig. 8.2. While the overall pattern over time appears to be different from UCITS funds (i.e., when comparing the two left-hand side panels), where the creation of new funds gradually decreases until 2003 and then again increases until 2007, the last increase in 2007 seems attributable to smaller promoters as well as top tier promoters.

One major difficulty in this analysis is that there is no history available on the notifications provided by Lipper. This limitation implies that we cannot assess the number of notifications of each fund after, say, 2 years of the launch. We only know the notifications they currently have without knowing exactly how they achieved this scope of distribution over time. This limits the possibility of examining the dynamics in the event of changing market conditions and regulatory changes.

Figure 8.3 compares the average number of notifications of UCITS funds with non-UCITS funds by the year of launching (vintage year). It shows a decreasing number of notifications over time for UCITS funds, indicating that "older" UCITS funds tend to have requested more notifications than more recent UCITS funds. What might explain this trend? Various reasons can be at play. The first possibility is that this is simply due to a time effect; i.e., the fact that funds first notify in a few countries and then notify elsewhere only later to achieve their desired scope of distribution. This time effect generates a declining pattern as shown here, and might capture the differences observed for the most recent years (the only way to control for this is by having historical data). This pattern might explain why fund managers start a new fund under UCITS regulation. Registering a fund under the UCITS regulation indeed provides a "growth option" for expansion to other countries, which might be valuable even for funds that are initially intended for only a single market. In contrast, for non-UCITS funds this option is less valuable due to the more restrictive regulation for cross-border distribution to retail investors.

However, the time effect is unlikely to be the only reason for a decreasing number of UCITS notifications over time. Indeed, even if it takes about 2 years to achieve all desired notifications, the observed negative trend spans a longer time period than 2 years. Moreover, it is very possible that a select number of funds are growing geographically over time substantially more than the average fund, creating a disparity between high-growth and low-growth funds. This effect would be hardly noticeable here without a more detailed analysis.

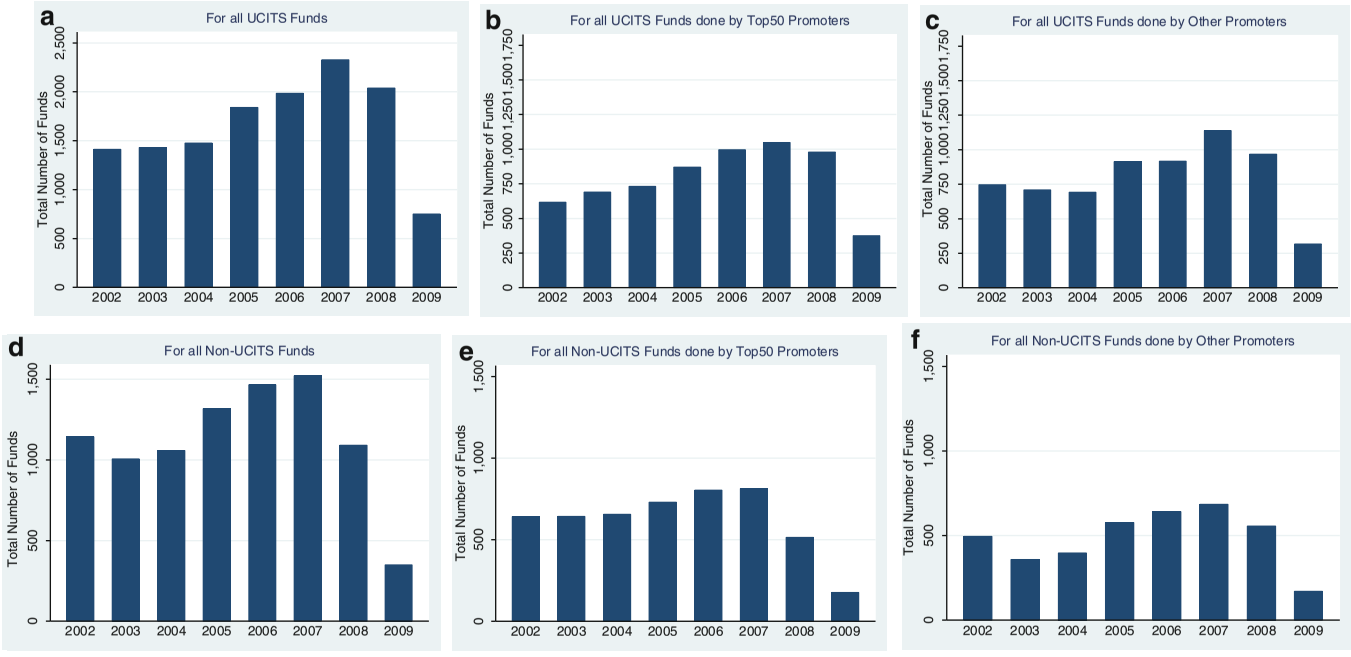

Fig. 8.2 Panels **A–F**: These figures show the number of funds newly launched by year from 2002 onwards (recall that 2009 is only partial and therefore difficult to compare with previous years). *Top* panels are for UCITS funds and the three others for non-UCITS funds. In each case, we provide the number of new funds overall (i.e., all promoters), for the Top-50 promoters only, and for all other promoters

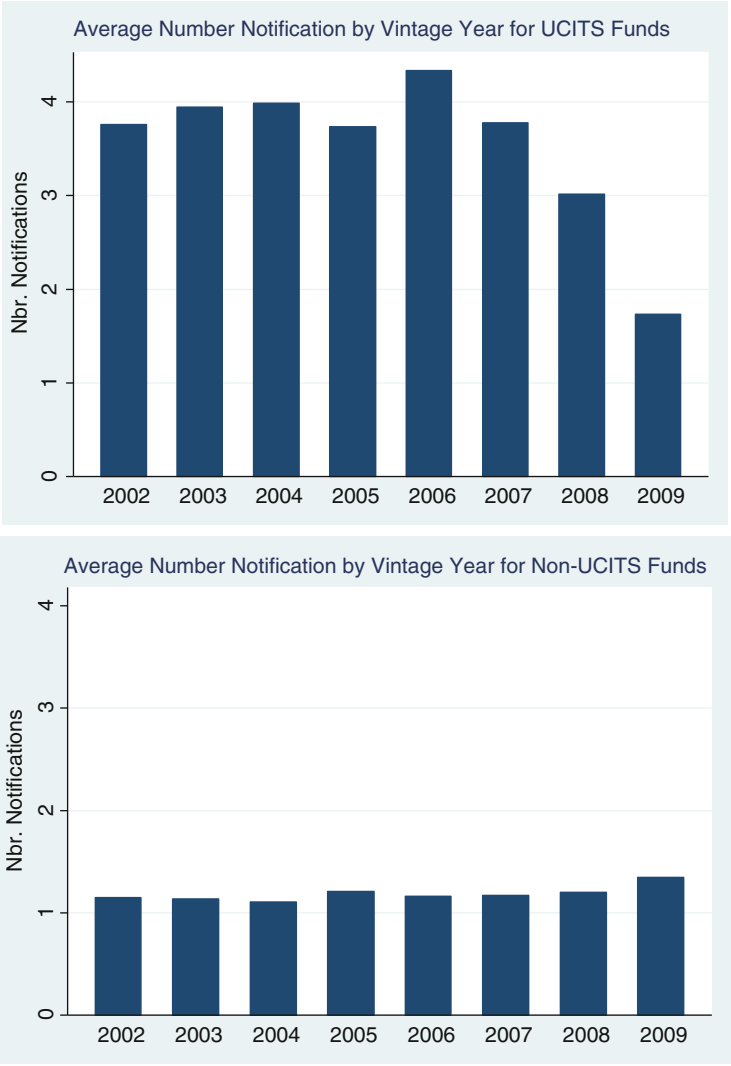

Fig. 8.3 Average annual number of notifications of UCITS (*top*) and non-UCITS funds (*bottom*) by vintage/launch year from 2002 to 2009 (for 2009 until September only)

This finding still raises the question of why there is this decreasing pattern. Is this indicating a trend towards country-tailored funds in recent years? Or increased geographical specialization of distribution channels as a result of new business models in the investment fund industry? Alternatively, to which extent is this finding driven by the increasing use of UCITS structure for national funds as in Spain? Although we cannot offer a clear answer to these questions, a country-by-country analysis reveals some trends. While UCITS funds domiciled in Spain and Italy generally have a single notification throughout the sample period, French and German domiciled UCITS funds keep a stable average between 1.5 and 2 (a slightly

decreasing trend), and, more surprisingly, Ireland has no clear pattern. Indeed, UCITS funds domiciled in Ireland have on average 4–5 notifications through the period 2003–2007, implying a larger variation over time than most other countries (further details not reported herein are available on request). The multivariate analyses in the next sections account for the dynamic pattern of notifications.

Multivariate Analysis on the Scope of Fund Distribution

In this section, we present our results from the multivariate analysis. In order to assess robustness, we measure the scope of fund distribution in different ways: the number of notifications (the variable Nbr. Notifications), whether a fund is distributed outside the country of domiciliation (the dummy variable Cross-Border), and finally, we weight the notifications of funds by the population of the countries, scaled by the total population of the Euro Zone (the variable Population). Because results for all the three measures are very similar qualitatively, in Section "Determinants of the Scope of Fund Distribution" we discuss results in terms of our first measure, and only report differences with respect to the two other measures at the end. However, we report results for all the three measures (Tables 8.4, 8.5, 8.6, and 8.7). Results of the tests of Hypothesis 2 will also be discussed in Section "Determinants of the Scope of Fund Distribution". In Section "The Effect of the Size of the Country of Domicile" we then test our Hypothesis 3. Section "The Impact of the Recent Financial Crisis on the International Distribution of UCITS Funds" investigates the impact of the recent financial crisis on the international fund distribution, in particular for UCITS funds. Section "Endogeneity Robustness Checks" reports robustness checks for possible endogeneity.

Determinants of the Scope of Fund Distribution

Results on the number of notifications (Nbr. Notifications) are shown in Table 8.4, the propensity of funds to be distributed cross-border (Cross-Border (dummy)) is in Table 8.5, and the population covered by notifications (Population) is in Table 8.6. Given differences in the dependent variable, we use Poisson regressions in Table 8.4, Probit regressions in Table 8.5 and OLS regressions in Table 8.6. In Table 8.5, we report marginal effects; coefficients therefore can be interpreted as changes in probability (change in the probability that a fund is distributed cross-border in response to a percentage change in the explanatory variable – for instance, a value of 0.26 for UCITS Dummy means that a UCITS fund has a 26% greater probability of being distributed cross-border).

Several key results are observed in Table 8.4. First, we find more notifications for funds of large promoters (Top-50 Promoter dummy), in support of Hypothesis 2. This result is strong and consistent across all specifications shown and all the three

Table 8.4 Determinants of the number of notifications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Variables	Full sample			Active only		Active, UCITS		Active, non-UCITS		Merged, UCITS	Liquidated, UCITS
Equity fund (dummy)	0.45***	0.45***	0.45***	0.54***	0.54***	0.61***	0.60***	0.17***	0.17***	0.22*	0.16*
Bond fund (dummy)	0.35***	0.35***	0.35***	0.42***	0.41***	0.49***	0.49***	0.13***	0.13***	0.31	0.11
Mixed fund (dummy)	−0.05	−0.05	−0.05	−0.003	−0.01	−0.05	−0.05	0.08***	0.08***	−0.16	−0.24*
Money market fund (dummy)	0.15***	0.15***	0.15***	0.22***	0.21***	0.28***	0.28***	0.08***	0.09***	−0.12	−0.05
UCITS fund (dummy)	0.71***	0.66***	–	0.74***	0.59***	–	–	–	–	–	–
Fund age (in years since launch)	0.31***	0.31***	0.31***	0.30***	0.28***	0.36***	0.37***	−0.30	−0.01	0.89***	0.10
Fund age squared	−0.03***	−0.03***	−0.03***	−0.03***	−0.03***	−0.04***	−0.04***	0.002	0.002	−0.09***	−0.01
"Fund age"* "UCITS fund"		0.01			0.04**		–		–		
Top-50 promoter (dummy)	0.25***	0.28***	–	0.26***	0.28***	0.28***	0.32***	0.08*	0.18***	0.20***	0.21**
Top-50 promoter* UCITS fund			−0.40*								
Top-50 promoter* non-UCITS fund			−1.16***								
Non-top-50 promoter* UCITS fund			−0.66***								
Non-top-50 promoter* non-UCITS fund			−1.31***								
"Fund age"* "Top-50 promoter"		−0.01			−0.01		−0.01		−0.03**		
Current status: merged (dummy)	−0.19**	−0.10**	−0.10**	–	–	–	–	–	–	–	–

(continued)

Table 8.4 (continued)

Variables	(1) Full sample	(2)	(3)	(4) Active only	(5)	(6) Active, UCITS	(7)	(8) Active, non-UCITS	(9)	(10) Merged, UCITS	(11) Liquidated, UCITS
Current status: liquidated (dummy)	−0.19***	−0.19***	−0.19***	–	–	–	–	–	–	–	–
GDP growth rate at launch year	0.14	0.13	0.14	0.26*	0.23*	0.09	0.08	0.37***	0.36***	−0.82***	0.08
Euribor rate at launch year	6.40*	6.51**	6.28*	5.09	5.19	5.87	5.99	−2.40	−2.32	32.34***	4.17
Domiciliation dummies included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	21,119	21,119	21,119	16,252	16,252	9,661	9,661	6,591	6,591	1,090	1,762
Log pseudo-likelihood	−40143.7	−40139.1	−40132.9	−30955.2	−30938.2	−22773.1	−22770.3	−7490.4	−7487.8	−2186.6	−4215.7

The dependent variable in all the specifications is "Nbr. Notifications", which gives the total number of notifications of a fund at time of September 2009. The sample is all investment funds launched since 2002. The method of estimation is the Poisson regression. All the variables are defined in Table 8.1. A constant term is included in all the regressions, whose coefficient is not reported. Standard errors are clustered by vintage year

Significance levels: *** for 1, ** for 5, and * for 10 %

Table 8.5 Determinants of cross-border funds

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Variables	Full sample		Active only	Active, UCITS	Active, non-UCITS	Merged, UCITS	Liquidated, UCITS
Equity fund (dummy)	0.06 ***	0.06 ***	0.06 ***	0.07 ***	0.01	−0.02 ***	0.13 *
Bond fund (dummy)	0.01	0.01	0.02 *	−0.02	0.01 *	−0.03	0.001
Mixed fund (dummy)	−0.04 ***	−0.04 ***	−0.03 ***	−0.09 ***	−0.001	−0.02	−0.12
Money market fund (dummy)	−0.01	−0.02	−0.01	−0.07 **	0.01 **	−0.02	−0.06
UCITS fund (dummy)	0.26 ***	–	0.23 ***	–	–	–	–
Fund age (in years since launch)	0.12 ***	0.12 ***	0.10 ***	0.23 ***	0.003	0.12 **	0.29
Fund age squared	−0.01 ***	−0.01 ***	−0.01 ***	−0.02 ***	−0.0004	−0.01 **	−0.04
Top-50 promoter (dummy)	0.05 ***	–	0.04 ***	0.04 ***	0.02 ***	0.04 **	0.04
Top-50 promoter * UCITS fund		0.44 ***					
Top-50 promoter * non-UCITS fund		0.08 ***					
Non-top-50 promoter * UCITS fund		0.39 ***					
Non-top-50 promoter * non-UCITS fund		–					
Current status: merged (dummy)	−0.01	−0.01	–	–	–	–	–
Current status: liquidated (dummy)	−0.02 ***	−0.02 ***	–	–	–	–	–
GDP growth rate at launch year	0.02	0.01	0.04	−0.12	0.08 ***	−0.22 **	0.18
Euribor rate at launch year	3.43 ***	3.53 ***	2.14 ***	6.38 ***	−0.56 ***	6.56 **	16.22 **
Domiciliation dummies included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	21,119	21,119	16,252	9,661	6,591	1,090	1,762
Pseudo R-squared (%)	58.0	58.0	56.3	55.9	33.6	80.6	53.8
Log pseudo-likelihood	−5809.8	−5805.6	−4613.9	−2950.0	−1467.2	−144.5	−529.6

The dependent variable in all the specifications is "Cross-Border (dummy)", which is a dummy variable equal to one if the given fund is notified outside its country of domiciliation and thus distributed cross-border, and zero otherwise. The sample is all investment funds launched since 2002. The method of estimation is the Probit regression. For ease of interpretation, we report changes in probabilities instead of direct coefficient estimates. All the variables are defined in Table 8.1. A constant term is included in all the regressions, whose coefficient is not reported. Standard errors are clustered by vintage year
Significance levels: *** for 1, ** for 5, and * for 10 %

Table 8.6 Determinants of the scope of distribution

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Variables	Full sample		Active only	Active, UCITS	Active, non-UCITS	Merged, UCITS	Liquidated, UCITS
Equity fund (dummy)	0.10***	0.10***	0.11***	0.14***	0.03***	0.07**	0.13***
Bond fund (dummy)	0.07***	0.07***	0.08***	0.11***	0.02***	0.07*	0.13***
Mixed fund (dummy)	0.001	0.002	0.004	−0.02	0.02***	−0.04	0.01
Money market fund (dummy)	0.03*	0.03*	0.03*	0.05***	0.02**	−0.01	0.08
UCITS fund (dummy)	0.15***	–	0.16***	–	–	–	–
Fund age (in years since launch)	0.09***	0.09***	0.09***	0.11***	−0.001	0.29***	0.10
Fund age squared	−0.01***	−0.01***	−0.01***	−0.01***	−0.0001	−0.03***	−0.01
Top-50 promoter (dummy)	0.06***	–	0.07***	0.10***	0.001	0.08**	0.03
Top-50 promoter* UCITS fund		−0.17**					
Top-50 promoter* non-UCITS fund		−0.35***					
Non-top-50 promoter* UCITS fund		−0.25***					
Non-top-50 promoter* non-UCITS fund		−0.36***					
Current status: merged (dummy)	−0.01*	−0.02*	–	–	–	–	–
Current status: liquidated (dummy)	−0.04***	−0.04***	–	–	–	–	–
GDP growth rate at launch year	0.02	0.03	0.09*	0.07	0.07**	−0.16*	−0.18*
Euribor rate at launch year	2.99**	2.86**	2.37**	2.83**	−0.46	12.21***	5.55
Domiciliation dummy included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	20,890	20,890	16,119	9,543	6,576	1,075	1,682
R squared	34.6 %	62.1 %	35.8 %	32.6 %	49.4 %	44.3 %	20.6 %

The dependent variable in all the specifications is "Population", which gives the level of population implied by the achieved notifications by the fund as percentage of the European Union population. The sample is all investment funds launched since 2002. The method of estimation is the OLS regression. All the variables are defined in Table 8.1. A constant term is included in all the regressions, whose coefficient is not reported. Standard errors are clustered by vintage year

Significance levels: *** for 1, ** for 5, and * for 10 %

Table 8.7 The effect of the size of the country of domiciliation

	Dep. Var. = Nbr. notifications (poisson regression)			Dep. Var. = cross-border (dummy) (probit regression)			Dep. Var. = population (OLS)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variables	Active, UCITS	Active, UCITS	Active, UCITS	Active, UCITS	Active, UCITS	Active, UCITS	Active, UCITS	Active, UCITS	Active, UCITS
Equity fund (dummy)	0.66***	0.63***	0.57***	0.23***	0.22***	0.20***	0.17***	0.14***	0.13***
Bond fund (dummy)	0.48***	0.52***	0.48***	0.10***	0.13***	0.13***	0.12***	0.11***	0.11***
Mixed fund (dummy)	−0.01	−0.02	−0.08	0.05	0.03	0.01	0.01	−0.02	−0.03
Money market fund (dummy)	0.21***	0.29***	0.28***	−0.03	0.03	0.03	0.04**	0.06***	0.06***
Fund age (in years since launch)	0.24**	0.37***	0.39***	0.17**	0.29***	0.30***	0.08*	0.11***	0.12***
Fund age squared	−0.03**	−0.04***	−0.04***	−0.02**	−0.03***	−0.03***	−0.01*	−0.01***	−0.01***
Top-50 promoter (dummy)	0.36***	0.30***		0.16***	0.12***		0.13***	0.10***	
Population of the country of domiciliation	−7.54***	−0.14	0.09	−4.15***	−0.59**	−0.50*	−0.98***	0.95***	1.03***
GDP growth rate at launch Year	0.96***	−0.02	−0.06	0.11	−0.53***	−0.57***	0.32**	0.08	0.04
Euribor rate at launch year	3.60	6.46	6.75	8.26*	10.64***	11.16***	2.67	2.76	3.14**
Fund is domiciled in Luxembourg (dummy)	–	1.46***	1.53***	–	0.70***	0.71***	–	0.44***	0.47***
Fund is domiciled in Ireland (dummy)	–	1.37***	1.37***	–	0.50***	0.49***	–	0.45***	0.45***
Number of observations	9,661	9,661	9,661	9,661	9,661	9,661	9,543	9,543	9,543
Log pseudo-likelihood	−24956.7	−22903.2	−23277.6	−4310.1	−3351.6	−3392.5	.	.	.
R squared	.	.	.	.	.	.	17.8 %	31.1 %	29.0 %
Pseudo-R squared	.	.	.	35.5 %	49.9 %	49.3 %	.	.	.

The dependent variable is "Nbr. Notifications" for Regressions (1)–(3), "Cross-Border (dummy)" for Regressions (4)–(6) (with changes in probabilities reported below instead of direct coefficient estimates) and "Population" for Regressions (7)–(9). The sample is all UCITS funds launched since 2002 and still active ("Current Status: Active (dummy)" = 1). All the variables are defined in Table 8.1. A constant term is included in all the regressions, whose coefficient is not reported. Standard errors are clustered by vintage year

Significance levels: *** for 1, ** for 5, and * for 10 %

measures used. This result supports the concept that larger promoters have better access to distributions channels abroad, notably due to their cross-border presence in connection with other financial products and services offered. Indeed, most of these promoters offer several other services and financial products, since they are usually commercial banks such as Crédit Agricole (#1 in the 2009 ranking), Fortis Group (#3 in the 2009 ranking) BNP Paribas (#6 in the 2009 ranking), and UBS (#11 in the 2009 ranking).

We also find strong support for Hypothesis 1 according to which UCITS funds have more notifications. This effect can be largely attributed to the lower requirements for registering abroad within the European Union. In Regression (3) of Table 8.4, we interact both dummy variables, UCITS and Top-50 Promoter (similar results are obtained for the three other measures, as shown in Regressions (2) in Tables 8.5 and 8.6). It indicates that the impact is stronger for Top-50 promoters with UCITS funds. This indicates a potentially magnifying effect of both characteristics.

Next, the dynamic pattern of notifications is concave in that fewer new countries are notified over time. This finding can be seen through the positive coefficient of Fund Age and the negative coefficient of the squared term of Fund Age. This result supports the view that promoters quickly notify to achieve their desired level of distribution. This result also illustrates the quick procedure of notifications.

Interestingly, although they primarily serve as control variables, we find a pattern for funds that have merged or been liquidated at the same time. There seems to be a pecking order in that liquidated funds achieve a smaller scope of distribution, but merged ones only slightly more. We note that UCITS III did not have effective procedures to enable mergers. The negative coefficient for mergers is also consistent with the ineffective merger provisions.

In terms of fund types, results are consistent with function in that equity and bond funds tend to be more standardized products that are more easily distributed widely, but other fund types are often designed for institutional investors (regardless of whether under the UCITS regulation) or tailored funds for country-specific demands.

Given our specific focus on the UCITS Directive, we further investigate the subsample of active UCITS funds only in Regressions (4)–(7) in Table 8.4. Results are similar to those found in the full sample. Moreover, results for the non-UCITS funds are provided in Regressions (8) and (9) in Table 8.4. There, we find mixed evidence for Fund Age, which suggests that the non-UCITS market has its own market structure. Indeed, the number of notifications does not increase as the fund matures (the variables Fund Age and Fund Age squared). Results for the two other measures (Tables 8.5 and 8.6) are broadly consistent with these findings. Combined with results obtained in previous regressions (where the coefficients for Top-50 Promoters are larger), this finding suggests non-UCITS funds may be more often launched by local promoters that have better access to cross-border distribution channels. It confirms the observation made earlier that UCITS funds are more prone to be widely distributed than non-UCITS funds. For the sample of merged and liquidated funds, we find that merged funds have a slightly larger scope of distribution than liquidated funds, and supports the ordering discussed above in

terms of possible performance. Though, even in these funds, the largest promoters realized a larger scope of distribution than other fund promoters.

Several robustness checks were done. First, our results are robust to the inclusion of year dummies, although they are not directly included in the tables due to colinearity problems with the base rate variables 1-Year Euribor. Second, we included the following regional dummies on top of the country dummies: Scandinavian (Finland, Norway, Sweden and Denmark), German-speaking (Germany and Austria), French-speaking (France, Belgium and Luxembourg), Eastern Europe (Slovenia, Slovakia, Poland, Czech Republic and Latvia) and Other. These may capture differences in economic development as well as geographic clusters of local branches that promoters may own (and thus their ultimate access to local distribution channels). We continue to find support for our results after inclusion of these regional dummies. Finally, we constructed a dummy variable for the top 25 promoters as alternative cut-off level for promoter reputation. Our results are robust to this alternative cut-off level.

The Effect of the Size of the Country of Domicile

Hypothesis 3 links the scope of distribution to the size of the country of domiciliation. It is expected that funds domiciled in "smaller" countries face a greater need for distributing their products outside their home country in order to achieve a critical size to make the fund viable. Given the costs of UCITS international distributions, we expected (Hypothesis 3 and accompanying text) a negative impact of country size on the scope of cross-border distribution. Given our findings in Section "Determinants of the Scope of Fund Distribution", we test this hypothesis on the subsample of active UCITS funds.

Tests of Hypothesis 3 are provided in Table 8.7. We obtain very similar results for the three measures Nbr. Notifications, Cross-Border (dummy), and Population. We find that funds domiciled in larger countries have fewer notifications (Regression (1)) and thus are also less often distributed cross-border (Regression (4)). It further results in a smaller overall distribution market (Regression (7)). However this finding is largely attributable to the two countries that attract the most funds for domiciliation, namely Luxembourg and Ireland. Indeed, the result becomes non-significant when adding dummy variables for these two countries in Regression (2). The effect of Population of Domicile then becomes however positive.

The Impact of the Recent Financial Crisis on the International Distribution of UCITS Funds

An interesting question, in particular with respect to fraud and financial scandals, is the impact of the recent financial crisis on cross-border distribution differences between UCITS funds non-UCITS funds. Although it is most likely premature to draw final conclusions on the question due to the short period of analysis (our sample stops in September 2009), it is worthwhile to take a first look at it. To do this, we construct the variable CRISIS, a dummy variable equal to one for funds that have been launched since summer 2007 (the beginning of the financial crisis), and zero for funds launched prior to the starting point of financial crisis. We then include in our specifications the variable CRISIS as well as an interactive term UCTIS (dummy) * CRISIS. The latter captures the specific effect of UCITS during the crisis period. Results are shown in Table 8.8 for the three different measures of international distribution. Regressions (1)–(3) are for the full sample, Regressions (4)–(6) for equity funds only, and Regressions (7)–(9) for bond funds. Interestingly, UCITS funds have lost some of their advantages in terms of international distribution during the crisis period, at least in terms of number of countries where the UCITS funds were notified. This did however not translate into a reduction of population size, indicating that the effect was more likely to have adversely affected smaller countries. Indeed, unreported results indicate that much of the negative impact on UCITS funds is attributable to Luxembourg as country of domiciliation, where the impact was the largest among the main countries of domiciliation.

Perhaps unsurprisingly, the negative impact is largely found for equity funds, where risk for investors was highest during the crisis and investors were looking for safer investment opportunities. This might also explain why UCITS bond funds were not adversely affected in terms of international distribution.

Endogeneity Robustness Checks

One possible concern is the decision of fund promoters to structure a fund as UCITS may itself be driven by the fund objectives in terms of distribution scope (see, e.g., Nanda et al. 2000, for related work). This would make the UCITS dummy variable endogenous. To examine whether this may affect our results, we use two sets of instrumental variables: (1) a dummy that is equal to one if the fund is domiciled in the originating country of the promoter, making it more likely that the fund could be primarily intended for domestic distribution where other fund structures are available; and (2) a broad range of strategy types dummy variables such as absolute return fund, ethical fund, contrarian fund, index tracking fund, and leveraged fund (in total 26 types). These are likely to affect the choice of whether to structure a fund as a UCITS, since UCITS regulation pins down what type of strategies are permitted under UCITS regulation, and which ones not (for instance, the use of

Table 8.8 The effect of the financial crisis

	All fund types			Equity funds			Bond funds		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variables	Nbr. notifications	Cross-border (dummy)	Population	Nbr. notifications	Cross-border (dummy)	Population	Nbr. notifications	Cross-border (dummy)	Population
Equity fund (dummy)	0.45***	0.06***	0.10***	–	–	–	–	–	–
Bond fund (dummy)	0.35***	0.01	0.07***	–	–	–	–	–	–
Mixed fund (dummy)	−0.05	−0.04***	0.001	–	–	–	–	–	–
Money market fund (dummy)	0.14***	−0.01	0.03*	–	–	–	–	–	–
UCITS fund (dummy)	0.74***	0.25***	0.15***	0.86***	0.40***	0.17***	0.97***	0.35***	0.23***
CRISIS (dummy)	0.03	−0.03	−0.02	0.17***	−0.08***	−0.01	−0.01	−0.04	−0.03
UCITS fund (dummy)* CRISIS (dummy)	−0.15***	0.02	−0.02	−0.28***	0.06	−0.05**	−0.10	0.10*	−0.03
Fund age (in years since launch)	0.23**	0.11***	0.06*	0.23**	0.14**	0.09*	0.22*	0.14	0.04
Fund age squared	−0.02**	−0.01***	−0.01*	−0.02**	−0.01***	−0.01*	−0.02*	−0.01*	−0.004
Top-50 promoter (dummy)	0.25***	0.05***	0.06***	0.30***	0.07**	0.10***	0.17***	0.07**	0.07***
Current status: merged (dummy)	−0.11**	−0.01	−0.02*	−0.25***	−0.08	−0.05*	−0.04	−0.05	−0.01
Current status: liquidated (dummy)	−0.19***	−0.02***	−0.04***	−0.31***	−0.03	−0.09***	−0.27***	−0.08*	−0.06*
GDP growth rate at launch year	0.16	0.03	0.05	−0.05	0.06	−0.01	0.48	0.21	−0.07
Euribor rate at launch year	4.89	3.20***	2.43*	2.94	5.85**	3.89*	7.97	0.71	3.03
Domiciliation dummy included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

(continued)

Table 8.8 (continued)

	All fund types			Equity funds			Bond funds		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variables	Nbr. notifications	Cross-border (dummy)	Population	Nbr. notifications	Cross-border (dummy)	Population	Nbr. notifications	Cross-border (dummy)	Population
Number of observations	21,119	21,119	20,890	6,999	6,999	6,892	3,185	3,185	3,146
Log pseudo-likelihood	−40118.7	−5808.3	.	−16199.5	−2167.0	.	−7283.1	−988.3	.
R squared	.	.	34.7 %	.	.	28.6 %	.	.	28.1 %
Pseudo-R squared	.	58.0 %	.	.	55.2 %	.	.	55.0 %	.

The dependent variable is "Nbr. Notifications" for Regressions (1), (4) and (7), "Cross-Border (dummy)" for Regressions (2), (5) and (8) (with changes in probabilities reported below instead of direct coefficient estimates) and "Population" for Regressions (3), (6) and (9). The sample is all funds launched since 2002 in Regressions (1)–(3), all equity funds in Regressions (4)–(6) and all bond funds in Regressions (7)–(9). All the variables are defined in Table 8.1. The only exception is the variable CRISIS, which is a dummy variable equal to one if the given fund was launched since the second half of 2007 (the recent financial crisis period that also hit the investment fund industry), and zero otherwise. A constant term is included in all the regressions, whose coefficient is not reported. Standard errors are clustered by vintage year

Significance levels: *** for 1, ** for 5, and * for 10 %

derivatives is specifically regulated). When performing these extended regressions, the results reported in this section remain largely unaffected; however the sample size is reduced. The findings are largely consistent, and the results are available on request.

An alternative way to control for endogeneity of choosing the UCITS structure is to perform the analysis on the subsample of funds that are cross-border, i.e., only funds that are notified in at least two countries. While this does not allow using the variable Cross-Border (dummy) as dependent variable, examining robustness on the two other variables remains possible. Again, our results continue to hold in this subsample, and they are available on request.

Notifications Made Outside Europe

In this section, we complement our analysis of the scope of distribution in Europe provided above by examining where UCITS funds are notified outside the European Union. We focus on two different world regions: the Americas (North, Central, and South America combined) and Asia-Pacific.

Table 8.9 shows the percentage of UCITS funds for different countries. We restrict our sample to funds launched after 2001 and that are still active today.

In the Asia-Pacific region, UCITS funds are most often notified in Hong Kong (5.33% of all funds in our sample) and Singapore (8.89%). These countries are also the most prominent financial centers in Asia. It should be noted that these percentages are quite remarkable, because they are based on our full sample. In a separate analysis, we report that most of the funds notified there are from U.S. promoters, especially the largest promoters that have a truly international reach. Other countries where funds are often notified are Macau (2.32% of all considered funds), Taiwan (3.11%) and South Korea (1.11%). In all other countries, UCITS funds are virtually absent.

Interestingly, Hong Kong and Singapore have been particularly keen in facilitating the distribution of UCITS funds in their domestic market. The Monetary Authority of Singapore has allowed it since 2003, when the UCITS I regulation was still in place. When UCITS III was introduced, it continued to do so. Managers of UCITS funds currently have to comply with simple disclosure rules. Similarly, the Securities and Futures Commission of Hong Kong facilitates the notification of UCITS funds to be distributed in Hong Kong.

However, some authorities outside the EU can impose additional restrictions on investments. As pointed out by Anderberg, "local regulators have the authority to impose additional restrictions on the way a UCITS is managed. In certain jurisdictions, there are a number of substantive limitations on a fund's ability to manage various kinds of assets. For example, Taiwan used to require (until a recent easing of these regulations) that a fund registered in Taiwan could invest no more than 0.4% of its assets in Mainland Chinese securities, and no more than 10% of its assets in China-related securities traded in Hong Kong or Macau. It was necessary

Table 8.9 Percentage of all funds notified in given region (for funds launched after 2001)

Continent	Country	Percentage of all funds (%)	Percentage of all UCITS funds (%)
Asia-Pacific	Australia	0.14	0.20
	China	0.00	0.00
	Cook Islands	0.00	0.00
	Hong Kong	**3.44**	**5.33**
	India	0.00	0.00
	Indonesia	0.00	0.00
	Japan	0.61	0.45
	Macau	**1.45**	**2.32**
	Malaysia	0.00	0.00
	New Zealand	0.02	0.02
	Pakistan	0.00	0.00
	Philippines	0.00	0.00
	Singapore	**6.09**	**8.89**
	South Korea	0.71	1.11
	Taiwan	**2.00**	**3.11**
	Thailand	0.00	0.00
	Vanuatu	0.00	0.00
	Vietnam	0.00	0.00
Eastern Europe	Bosnia	0.00	0.00
	Bulgaria	0.20	0.31
	Croatia	0.00	0.00
	Czech Republic	**2.89**	**4.09**
	Estonia	0.66	1.03
	Hungary	0.58	0.93
	Latvia	0.67	0.94
	Lithuania	0.54	0.80
	Macedonia	0.00	0.00
	Poland	**2.10**	**2.30**
	Slovakia	**1.10**	**1.44**
	Slovenia	0.20	0.29
Americas	Argentina	0.00	0.00
	Bahamas	0.01	0.01
	Barbados	0.00	0.00
	Bermuda	0.00	0.00
	Brazil	0.00	0.00
	British Virgin Islands	0.00	0.00
	Canada	0.14	0.22
	Cayman Islands	0.03	0.04
	Chile	**3.11**	**4.93**
	Mexico	0.01	0.01
	Netherlands Antilles	0.00	0.00
	Panama	0.00	0.00
	Peru	**1.05**	**1.64**
	Puerto Rico	0.00	0.00
	Trinidad & Tobago	0.16	0.26
	United States	0.03	0.01

to consider that by registering in Taiwan, a fund's portfolio managers might be restricted in the future from investing in Chinese securities."

We find a sharp contrast with the Americas, where UCITS funds are largely absent. This is true even in very large countries such as the United States, Brazil, and Mexico. Much of it is attributable to differences in regulations that make the notification of UCITS funds particularly difficult, similar to what has been presented above for some Asian countries, only to a more severe extent. The only countries where UCITS funds are often notified are Chile and to a lesser extent Peru.

An interesting question is where these funds are primarily domiciled and whether these are largely funds of more established promoters. Given the few notifications in the Americas, we pursue the discussion only for the countries in Asia-Pacific. And there, we limit the analysis to the countries where at least 1% of our funds are notified (these are the ones in bold in Table 8.9). Summary statistics are provided in Table 8.10, Panels A and B.

Most funds notified in Asia-Pacific are domiciled in Luxembourg and partially in Ireland, but rarely elsewhere. Most of these UCITS funds are from top-50 promoters, in some countries up to 70% of the notified identified funds. Most of them are equity and bond funds. Compared to the countries of the European Union, equity funds are over-represented as well as bond funds. This is largely due to the fact that there are proportionately fewer "other fund" types in Asia-Pacific that are UCITS funds.

These general findings raise the question of which promoters are more likely to expand their scope of UCITS distribution beyond Europe, and in particular in Asia-Pacific and Latin America. In Table 8.11, we provide a multivariate analysis of this question by examining separately the decision to notify outside Europe (Regressions (1) and (2)), in Asia-Pacific (Regressions (3) and (4)) and the Americas (Regressions (5) and (6)). Similar to our analysis in Section "Multivariate Analysis on the Scope of Fund Distribution", we find that top-50 promoters are more likely to expand in these regions, and that the effect is concave in fund age. Furthermore, most of these funds turn out to be domiciled in Ireland and Luxembourg, which confirms our preliminary findings from Table 8.10.

Also, we find that notifications of UCITS funds in Asia-Pacific countries are mostly done by U.S. promoters that domicile their funds in the European Union, as compared to European promoters. A similar pattern can be found in the Americas (essentially Latin America), although it is somewhat weaker.

Concluding Remarks and Future Research

In this paper, we examine the scope of international fund distributions with UCITS over the 2002–2009 period with a comprehensive data set of European investment funds. Consistent with limitations to the UCITS III regulations that enhances investor protection and mitigates risks of fraud, we find strong evidence that UCITS III promoted international distributions for larger funds. Further, the

Table 8.10 Summary statistics of all UCITS funds notified in different countries of the Asia-Pacific region and the Americas and registered for domiciliation in one of the EU countries as UCITS (for Funds launched after 2001). Only countries with marked in bold in Table 8.7 are presented

Panel A

	Country of domiciliation						Fund asset type (% all funds, not based on NAV)				
Country	Luxembourg (%)	Ireland (%)	Germany (%)	France (%)	UK (%)	Others > 0 %	Equity (%)	Bond (%)	Mixed (%)	Money market (%)	Other (%)
Hong Kong	76.71	22.97	0.00	0.32	0.00	–	66.51	21.53	4.78	2.07	5.10
Macau	78.32	21.68	0.00	0.00	0.00	–	68.14	20.80	6.19	0.88	3.98
Singapore	73.63	23.15	0.07	1.17	1.68	Austria (0.07 %), Sweden (0.22 %)	56.12	23.74	6.89	4.03	9.16
Taiwan	67.63	30.29	0.00	0.83	0.41	Belgium (0.83 %)	64.32	28.22	6.64	0.83	0.00
Chile	82.72	12.74	0.22	1.94	1.51	Austria (0.86 %)	61.56	26.13	4.10	4.10	4.10
Peru	80.91	14.55	0.00	2.73	1.82	–	61.82	29.09	4.55	4.55	0.00

Panel B

								Nbr. funds launched within vintage Period	
Country	Nbr. notifications of fund	Top-50 promoter (%)	Top-25 promoter (%)	NAV (million EUR)	Still active (%)	Merged (%)	Liquidated (%)	Jan. 2002–Dec. 2005	Jan. 2006–Sept. 2009
Hong Kong	13.86	54.39	22.65	80.56	79.90	5.74	14.35	322	305
Macau	16.96	59.29	21.68	98.69	81.42	6.19	12.39	157	69
Singapore	12.37	59.63	37.14	98.84	78.84	6.38	14.80	681	684
Taiwan	15.82	57.68	24.48	155.17	93.78	3.73	2.49	175	66
Chile	14.48	68.90	50.54	123.83	88.77	6.48	4.75	293	170
Peru	16.52	49.09	28.18	187.04	93.64	2.73	3.64	80	30

Table 8.11 Determinants of notifications outside Europe

	Outside Europe		Asia-Pacific		Americas	
	(1)	(2)	(3)	(4)	(5)	(6)
Variables	Whether notified	Nbr. notifications	Whether notified	Nbr. notifications	Whether notified	Nbr. notifications
Equity fund (dummy)	0.02***	0.63***	0.02***	0.86***	0.01***	1.95***
Bond fund (dummy)	0.02***	0.35**	0.01***	0.60***	0.02***	1.68***
Mixed fund (dummy)	−0.01***	−0.57***	−0.01***	−0.32	0.00004	0.13
Money market fund (dummy)	0.10	0.01	0.01	0.15	0.01***	1.49***
Fund age (in years since launch)	0.03***	0.75***	0.02***	0.67***	0.01***	1.17***
Fund age squared	−0.003***	−0.06***	−0.002***	−0.06***	−0.001***	−0.11***
Top-50 promoter (dummy)	0.01*	0.12	0.004	0.14	−0.001	−0.32*
Current status: merged (dummy)	−0.01***	−0.40***	−0.01***	−0.30**	−0.002***	−0.80***
Current status: liquidated (dummy)	−0.01***	−0.64***	−0.01***	−0.80***	−0.004***	−1.80***
Promoter is a commercial bank	0.01***	0.16*	0.004**	−0.07	0.002*	0.33
Swiss promoter	0.02***	−0.02	0.02***	0.17	0.00002	0.08
Non-European promoter	0.14***	1.10***	0.11***	1.25***	0.004*	0.48
GDP growth rate at launch year	−0.05**	−0.74	−0.03***	−1.07**	0.002	0.67
Euribor rate at launch year	0.83***	5.96	0.51***	7.25	0.02	6.51
Domiciliation dummies included?	Yes	Yes	Yes	Yes	Yes	Yes
Country dummy with largest coefficient	Ireland	Luxembourg	Ireland	Luxembourg	Ireland	Luxembourg
Country dummy with second largest coefficient	UK	Ireland	Belgium	Ireland	UK	Ireland
Country dummy with third largest coefficient	Austria	UK	UK	Belgium	Austria	UK
Number of observations	8,147	8,147	8,147	8,147	8,147	8,147
Log pseudo-likelihood	−2638.8	−5188.7	−2343.5	−3863.6	−1311.2	−1522.1
R squared	–	–	–	–	–	–
Pseudo-R squared	32.4 %	–	32.2 %	–	25.0 %	–

The dependent variable is a dummy variable for Regressions (1), (3) and (5), and the number of notifications in the given areas for Regressions (2), (4) and (6). For the first set of regressions (using Probit regression estimation), changes in probabilities are reported below instead of direct coefficient estimates, while in the second set we use Poisson regression method. The sample is all UCITS funds launched since 2002. All the variables are defined in Table 8.1. A constant term is included in all the regressions, whose coefficient is not reported. Standard errors are clustered by vintage year
Significance levels: *** for 1, ** for 5, and * for 10%

nontrivial costs of international notification under UCITS III imply that smaller countries have disproportionately more interest in international notification.

The data indicate a number of additional interesting aspects of international notifications under UCITS. For instance, the data indicate that the international scope of notifications is concave in that fewer new countries are notified over time. Further, we document evidence that there has been an increase in the number of fund promoters that distribute UCITS funds outside the European Union, notably in Asia. This trend can be attributable to the superior investor protection of UCITS regulation. Overall, we find that the UCITS regulation has had a significant impact in the distribution scope of funds through cost savings and larger population targeting.

These findings raise new questions. One is whether there are patterns to notifications, like clustering of countries. For instance, do fund promoters systematically notify their funds in all Scandinavian countries, or are notifications made in Finland, Sweden and Norway unrelated to each other? The same may apply to German-speaking countries and the Benelux region. Similarly, some fund promoters have set up so-called round trip funds that are domiciled abroad (typically in Luxembourg or Ireland) and notified also in the home country. In particular, German promoters have used this structure, by domiciling their fund in Luxembourg and also notifying it in Germany. This pattern implies cross-border funds with two notifications (one in Luxembourg – the country of domiciliation – and Germany). What drives certain promoters to choose this structure as opposed to simply setting up a national fund (i.e., domiciled in the home country and notified nowhere else) remains an open but interesting question for future research.

The upcoming UCITS IV Directive intends to enlarge the scope of distribution of investment funds distributed in Europe. Three distinct measures are included in the new directive to achieve this goal: the introduction of a management passport, the harmonization of the merger regulation for cross-border mergers, and the introduction of a master-feeder structure. How will these new measures effect notification decisions and the ultimate scope of distribution?

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Chapter 9
Active Management of Socially Responsible Portfolios

Annalisa Fabretti and Stefano Herzel

Introduction

Socially Responsible Investment (SRI) is an investment style which is attracting increasing interest. In selecting their portfolios, SR investors pay attention to issues that are not only related to financial performance. In doing so, they discard assets if the corresponding companies do not respect some specified criteria of corporate social responsibility. For this reason with regard to SRI, the most investigated question is whether SR portfolios perform as conventional ones even if they consist of a smaller investment universe. The literature based on empirical studies is extensive and sometimes controversial, and we shall provide a review in the next section. On the other hand, few studies deal with the problem from a theoretical standpoint, see Heinkel et al. (2001) and Fabretti and Herzel (2012). Here we propose a theoretical model which considers the problem of an investor wishing to allocate her wealth according to some SR criteria. In this regard, the investor will bear a so-called cost of sustainability due to the reduction in the investment set opportunity. However, the investor is aware that a SR managed portfolio can perform as much as a conventional portfolio (net-effect, see Kurtz 1997). For this reason, the investor decides to entrust her wealth to a portfolio manager of a certain ability. Thus, by exploiting the portfolio manager's better knowledge of the market, the investor aims to mitigate the cost of sustainability. On the other hand, portfolio managers can be employed by a conventional fund; hence, the investor knows

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that she must offer an attractive contract to offset the requirements of investment set restriction due to SR screening. The investor must also face the fact that the manager's skill is unknown. Hence, in offering a contract, she must take care about being able to attract only the best managers. Therefore, the investor's task is threefold: (a) hiring a manager who can offset the cost of sustainability; (b) setting a bonus to compensate the manager for the investment restriction; (c) attracting only the best and motivated managers.

In the following we formalise and solve the problem described. The problem and the setting is similar to the one developed in Fabretti and Herzel (2012), but we wish to highlight two main differences: firstly, the information here is available only on SR assets and observable only if accepting the contract offered by the investor; secondly, we also address the issue of defining the cost of sustainability and provide suggestions for the investor with regard to selecting and attracting managers in order to offset such a cost. Differences in the setting imply substantial differences in findings. In fact, the investor can decide to offer no extra bonus without loosing the opportunity to attract good managers. Moreover, we explicitly establish the level of information precision which can offset the investment restriction. Finally, we provide some numerical results for all the quantities we derive theoretically, by means of the KLD scores and S&P500 data of December 2006.

The chapter is organised as follows: section "Literature" is a review of the literature on Socially Responsible Investments, Delegated Portfolio Management and manager's expertise estimation problems. Before addressing the SR investor's problem, we introduce the market model and provide some well known results on passive management in section "The Market Model". Section "Active Portfolio Management" illustrates the setting for active management and Section "Performances of an Active Portfolio Management" studies the problem of measuring the performances of the portfolio managers. The main theoretical results are provided in section "Active Socially Responsible Investment" where we solve the problem of setting the bonus and deal with the cost of sustainability. The manager selection problem is dealt with in section "Manager's Selection". In section "Results and Discussion" we discuss our model implications, providing numerical examples based on S&P500 and KLD scores. Section "Conclusion" concludes the chapter. The proofs of some results are relegated to the Appendix.

Literature

Socially responsible investment (SRI), also known as ethical investment, is an investment style, sometimes also considered as a discipline in its own right, that adds concerns about social or environmental issues to the classic ones of risk and return as determinants of portfolio construction. This way of investing can imply exclusion, activism, and dialogue or engagement. Exclusion avoids investment in certain companies whose operations are considered unacceptable, while activism involves using the rights of share ownership to assert social objectives. SRI may be carried out by individuals, through mutual funds for example, or by institutions

such as charitable foundations and pension funds. Nowadays, SRI is gaining increasing attention; however, examples of exclusionary investing for ethical reasons can be found far back in time. Common examples are funds that exclude firms involved in the production and/or distribution of tobacco products, alcoholic beverages and weapons. Gambling, animal testing, labor relations, human rights and environmental issues are also used as negative or positive screens. Recently, in 2005, the United Nations Secretary-General invited a group of the world's largest institutional investors to join a process in developing the Principles for Responsible Investment that are currently subscribed by over 850 investment institutions with assets under management totaling approximately US$ 25 trillion.

On the other hand, there are still barriers to institutional investors adopting SRI strategies; the main concerns regard the impact on investment performance. Notwithstanding many academic studies, the picture is still unclear. Mill (2006) investigated the financial performance of a UK unit trust that was initially "conventional" and later adopted SRI principles, finding that the mean risk-adjusted performance remained unchanged in the switch to SRI, with no evidence of over-or under-performance relative to the benchmark market index with regard to any of the four conventional funds used for comparison. Bauer et al. (2007) compared the performance of SRI funds to those of conventional funds and found that socially responsible stocks do not appear to underperform the market. Kempf and Osthof (2007) tried to separate portfolio performance from fund manager ability and compared purposely designed SRI and non-SRI portfolios, finding positive and significant risk-adjusted returns, while in Herzel et al. (2012) the socially responsible screening implied a small loss in terms of Sharpe Ratio even though it had a strong impact on the market capitalization of the optimal portfolio. In contrast, Hong and Kacperczyk (2009) reported higher expected returns for so-called sin stocks. In the review proposed by Kurtz (1997), the idea that information and active management can offset diversification costs came to light. To reinforce this thesis, Hamilton et al. (1993) found no statistically significant differences in the risk adjusted returns of a group of SRI mutual funds as compared with conventional ones. Despite some contrasting results, it clearly emerged that portfolio managers play a key role in the implementation, development and success of SRI practices. On the other hand, most portfolio managers appear reluctant to include SRI in their investment strategies, as reported by RImetrics (2008).

If active management can offset possible losses due to the investment restriction, evaluating a manager's skill becomes crucial. In the literature, security selection ability and market timing skills are considered to be determinant in portfolio management evaluation. Most studies on this topic are based on Jensen's alpha (Jensen 1968). Jensen (1968) did not find significant out-performance. Others found a positive mean selectivity value (Daniel Coggin et al. 1993). Edwards and Caglayn (2001) found that 25% of hedge funds earn positive excess returns and claimed that fund managers' skill may be the explanation. However, in the literature the results refer to fund management in general rather than to any individual fund manager employed in that fund management. In Tonks (2005), which we suggest also for a vast discussion of the literature, a deeper analysis at the individual level is performed and results show a significant persistence in the performance of fund

managers at the 1-year time horizon, while weak evidence for longer time intervals. From the theoretical standpoint, Delegated Portfolio Management (DPM) focuses on designing appropriate contracts when the portfolio manager's information and efforts are not directly observable by the investor. An appropriate contract should motivate the manager into making a costly effort to gather information and to use this information in choosing a portfolio. Most of the literature focuses on optimal contract functions and their effects, such as in Bhattachary and Pfleiderer (1985), Stoughton (1993), Heinkel and Stoughton (1994), Wei and Litiwari (2009), and Admati and Pfleiderer (1997). We suggest Stracca (2006) for a review. In considering DPM when SRI criteria are involved, Fabretti and Herzel (2012) found that in the hypothesis of knowing a manager's general ability (which in their setting can be derived from the declared reservation utility), the investor is able to attract the most intrinsically "green" motivated managers. However, in Fabretti and Herzel (2012) the investor always pays an extra bonus to attract good and motivated managers.

The Market Model

We consider a market model composed of one risk-free asset, with total return R and by n risky assets, with excess returns[1] $\mathbf{X}$, that we assume to be distributed as a multi-variate normal random variable with mean $\bar{\mathbf{X}}$ and variance $\boldsymbol{\Sigma}$, an invertible matrix. Further on in this chapter, we will differentiate the assets between "SR" and "non-SR". For the time being, however, we do not need to introduce such a difference.

We denote by ω the n-dimensional vector whose components represent the percentage of wealth invested in the i-th risky asset. Hence, the excess return of portfolio ω is the normal random variable

$$r = \omega' \mathbf{X},$$

where the apostrophe indicates transposition.

According to the classic "mean-variance" criterion, an optimal portfolio is an investment strategy that provides the minimal variance for a given level of expected excess return $\bar{r}>0$. Hence, it is the function of $\bar{r}$ that provides the unique optimal solution to the problem

$$\min_{\omega} \omega' \boldsymbol{\Sigma} \omega \tag{9.1}$$

$$\omega' \bar{\mathbf{X}} = \bar{r} \tag{9.2}$$

[1] In the following, any return is taken to mean excess return with respect to the risk free return R.

By standard argument we can show that the optimal portfolio is

$$\omega_{\bar{r}} = \lambda_{\bar{r}} \Sigma^{-1} \bar{\mathbf{X}} \tag{9.3}$$

where

$$\lambda_{\bar{r}} = \frac{\bar{r}}{\mathcal{H}^2} \tag{9.4}$$

is the shadow price associated with the constraint (9.2), with

$$\mathcal{H} = \sqrt{\bar{\mathbf{X}}' \Sigma^{-1} \bar{\mathbf{X}}}. \tag{9.5}$$

The variance of the excess return produced by the optimal portfolio $\omega_{\bar{r}}$ is

$$\omega_{\bar{r}}' \Sigma \omega_{\bar{r}} = \lambda_{\bar{r}}^2 \mathcal{H}^2 \tag{9.6}$$

$$= \frac{\bar{r}^2}{\mathcal{H}^2}. \tag{9.7}$$

That is, all optimal portfolios satisfy the relation

$$\mathcal{H} = \frac{\bar{r}}{\sigma}, \tag{9.8}$$

which can be represented, in the plane (σ, μ), where $\mu = \bar{r} + R$, by a half-line from the point $(0, R)$, that is called the "efficient frontier". Therefore, $\mathcal{H}$ is the slope of the efficient frontier and thus represents the highest "Sharpe ratio" achievable in the market.

We note that all the optimal (or efficient) investments are constituted by a mixture of risky assets and the riskless asset. The efficient portfolio that is invested only in risky assets is called the "market" portfolio. By definition, the market portfolio satisfies

$$e' \omega_{\bar{r}} = 1,$$

where e is the n-vector with all components equal to one; thus we can determine the market portfolio expected excess return:

$$\bar{r}_M = \frac{\mathcal{H}^2}{e' \Sigma^{-1} \bar{\mathbf{X}}}. \tag{9.9}$$

Substituting the expression above for $\bar{r}_M$ into the equation of the efficient frontier (9.8), we get the standard deviation of the "market" returns

$$\sigma_M = \frac{\mathcal{H}}{e'\Sigma^{-1}\bar{\mathbf{X}}}. \tag{9.10}$$

The market portfolio ω_M is obtained by setting $\bar{r}$ equal to $\bar{r}_M$ in (9.3),

$$\omega_M = \frac{\Sigma^{-1}\bar{\mathbf{X}}}{e'\Sigma^{-1}\bar{\mathbf{X}}}. \tag{9.11}$$

Let us now consider an agent with an exponential utility $u(x) = -exp(-\alpha x)$, where α represents the parameter of risk aversion, and an initial wealth W_0. Such an agent will choose, among the efficient portfolios, the one which maximizes the expected utility of the final wealth. Therefore, indicating as r the excess return of the investment, the expected utility is

$$\mathbb{E}[-exp(-\alpha W_0 r)] = -exp\left(-\alpha W_0 \bar{r} + \frac{\alpha^2 W_0^2 \sigma^2}{2}\right) \tag{9.12}$$

where we used the fact that the returns are normally distributed. Hence, the agent will select the optimal investment by solving

$$\max_{\bar{r},\sigma} \left(\alpha W_0 \bar{r} - \frac{\alpha^2 W_0^2 \sigma^2}{2}\right) \tag{9.13}$$

$$\mathcal{H}\sigma - \bar{r} = 0. \tag{9.14}$$

That is, an investor with wealth W_0 and risk aversion α will select an investment providing an excess return with expected value

$$\bar{r}_{\alpha,W_0} = \frac{\mathcal{H}^2}{\alpha W_0} \tag{9.15}$$

and standard deviation

$$\sigma_{\alpha,W_0} = \frac{\mathcal{H}}{\alpha W_0}, \tag{9.16}$$

achieving an expected utility equal to

$$U_\alpha^* = -exp\left(-\alpha W_0 R - \frac{\mathcal{H}^2}{2}\right), \tag{9.17}$$

and a certain equivalent

$$x(\alpha, W_0) = W_0 R + \frac{\mathcal{H}^2}{2\alpha}. \tag{9.18}$$

From (9.8) and (9.16) we get

$$\frac{\mathcal{H}}{\alpha W_0} = \frac{\bar{r}}{\mathcal{H}},$$

that is, by (9.4),

$$\lambda = \frac{1}{\alpha W_0}.$$

Therefore, the optimal allocation to be chosen by the risk-averse investor is

$$\omega_\alpha = \frac{1}{\alpha W_0} \Sigma^{-1} \bar{\mathbf{X}}. \tag{9.19}$$

Active Portfolio Management

We wish to study a situation where some of the market participants, such as some skilled portfolio managers, have a better knowledge of the market than other common investors. Hence, we suppose that these managers have access to a signal that represents private information which can help them obtain a better forecast of the future returns of the risky assets. We refer to as "active" the portfolio selection strategy implemented by these managers who can exploit such a signal, in order to distinguish it from the "passive" strategy implemented by "common investors" who do not have access to the signal and share the knowledge of the market defined in the previous Section.

We define the signal as

$$\mathbf{S} = \mathbf{X} + \in$$

where $\in$ is a normal random variable with mean zero and variance $\Sigma_\in$, independent of $\mathbf{X}$, which represents the noise of the signal. Hence, the skill, or ability of a manager, is determined by $\Sigma_\in$, that is, better managers have a "smaller" $\Sigma_\in$, where the meaning of "smaller" has to be further specified, since $\Sigma_\in$ is a matrix.

From our assumptions, it follows that signal $\mathbf{S}$ is also a normal random variable, with mean $\bar{\mathbf{X}}$ and variance

$$\Sigma_S = \Sigma + \Sigma_\in.$$

A portfolio manager determines a forecast on the future asset returns according to his observation of $\mathbf{S}$. His best forecast $\bar{\mathbf{X}}_S$ is given by the function of $\mathbf{S}$ that minimises the distance (measured with respect to the variance) from $\mathbf{X}$. Therefore, it is the conditional expectation of $\mathbf{X}$ given $\mathbf{S}$, or the orthogonal projection of $\mathbf{X}$ on the space generated by $\mathbf{S}$, that is

$$\bar{\mathbf{X}}_S = \Sigma\Sigma_S^{-1}(\mathbf{S} - \bar{\mathbf{X}}) + \bar{\mathbf{X}}.$$

The error of the forecast is given by

$$\mathbf{u} = \mathbf{X} - \bar{\mathbf{X}}_S$$

that is a normal random variable, independent of $\mathbf{S}$, with mean zero and variance

$$Q = \Sigma - \Sigma\Sigma_S^{-1}\Sigma.$$

Note that the better the portfolio manager, that is, the smaller the noise of the signal, the closer Σ_S is to Σ, and hence the smaller the variance Q of the forecast error. It is important to note that, since the error $\mathbf{u}$ is independent of $\mathbf{S}$, its variance is equal to Q, both conditionally and unconditionally of the signal. Therefore Q can be estimated from an observed sequence of forecast errors.

We set up a model where skilled portfolio managers observe signals and provide forecasts $\bar{\mathbf{X}}_S$ of the future returns dependent on the signal, while "common investors" do not observe any signal and thus provide a constant forecast $\bar{\mathbf{X}}$. Note that all forecasts are unbiased, but the variance of the error of the active one is Q, while that of the passive one is Σ. Since

$$\Sigma - Q = \Sigma\Sigma_S^{-1}\Sigma$$

is positive definite, we can say that Σ is "greater" than Q according to the natural order of positive definite matrices.

To formulate the portfolio selection problem for an active investor, we use the fact that the conditional distribution of the risky returns $\mathbf{X}$ is normal with mean $\bar{\mathbf{X}}_S$ and variance Q. Hence, the efficient portfolios for an active investor are given by

$$\min_{\omega} \omega' Q \omega \tag{9.20}$$

$$\omega' \bar{\mathbf{X}}_S = \bar{r} \tag{9.21}$$

from which we get that the optimal active strategy corresponding to a signal S and an expected excess return $\bar{r}$ is

$$\omega_{\bar{r},S} = \lambda_S Q^{-1} \bar{r}$$

where

$$\lambda_{\bar{r},S} = \frac{\bar{r}}{\mathcal{H}_S^2} \tag{9.22}$$

with

$$\mathcal{H}_S = \sqrt{\bar{\mathbf{X}}'_S Q^{-1} \bar{\mathbf{X}}_S}. \tag{9.23}$$

The conditional efficient frontier is established by the portfolios with conditional expected excess return $\bar{r}$ and conditional standard deviation σ satisfying the relation

$$\mathcal{H}_S = \frac{\bar{r}}{\sigma}.$$

Therefore, $\mathcal{H}_S$ is the best possible Sharpe ratio achievable by an active investment, after having observed the signal S. In this case, by the same argument outlined above to get Eqs. (9.16) and (9.24), we can show that an agent with a risk aversion parameter α and an initial wealth W_0 selects an investment with expected excess return and standard deviation, conditioned on the signal S, equal to

$$\bar{r}_{\alpha,S} = \frac{\mathcal{H}_S^2}{\alpha W_0} \tag{9.24}$$

$$\sigma_{\alpha,S} = \frac{\mathcal{H}_S}{\alpha W_0} \tag{9.25}$$

and optimal allocation

$$\omega_{\alpha,S} = \frac{1}{\alpha W_0} Q^{-1} \bar{\mathbf{X}}_S \,. \tag{9.26}$$

Performances of an Active Portfolio Management

We stress that the conditional mean and variance of the investments are only relevant to the manager that observes the signal. An outsider, who does not know the signal, can just observe a time series of the returns or the portfolio choices made, period after period, by the manager. If such an outsider wants to measure the performance of the manager, he needs to estimate the unconditional mean and variance of the returns.

Let us denote by r_S the random variable representing the excess return generated by an active strategy. Let $\bar{r}_S$ be the conditional expectation and σ_S the conditional standard deviation. We assume that the active management makes conditionally efficient choices, that is

$$\bar{r}_S = \mathcal{H}_S \sigma_S.$$

Using the law of iterated expectation we can compute the unconditional expected excess return of the active investment

$$\mathbb{E}[r_S] = \mathbb{E}[\bar{r}_S] = \mathbb{E}[\mathcal{H}_S \sigma_S]. \tag{9.27}$$

Indicating as $\mathrm{V}(\cdot)$ the operator computing the unconditional variance, and by again applying the law of iterated expectations, we find that the variance of excess return of the active investment is given by

$$\begin{aligned} \mathrm{V}(r_s) &= \mathrm{V}(\bar{r}_S) + \mathbb{E}[\sigma_S^2] \\ &= \mathrm{V}(\mathcal{H}_S \sigma_S) + \mathbb{E}[\sigma_S^2]. \end{aligned} \tag{9.28}$$

In the case of an agent with exponential utility, parameter of risk aversion α, and initial wealth W_0, the value of σ_S^2 is given by Formula (9.25); hence, we get

$$\mathbb{E}[r_S] = \frac{\mathbb{E}\left[\mathcal{H}_S^2\right]}{\alpha W_0} \tag{9.29}$$

$$\mathrm{V}(r_s) = \frac{\mathrm{V}\left(\mathcal{H}_S^2\right) + \mathbb{E}\left[\mathcal{H}_S^2\right]}{(\alpha W_0)^2}. \tag{9.30}$$

A popular measure for performance evaluation is the Sharpe Ratio, that is, the averaged risk-adjusted expected return. The Sharpe ratio, of an active management for the case above is given by

$$\frac{\mathbb{E}[r_S]}{\sqrt{\mathrm{V}(r_s)}} = \frac{\mathbb{E}\left[\mathcal{H}_S^2\right]}{\sqrt{\mathrm{V}\left(\mathcal{H}_S^2\right) + \mathbb{E}\left[\mathcal{H}_S^2\right]}} \tag{9.31}$$

which does not depend on the risk aversion or on the initial wealth.

The quantity $\mathcal{H}_S^2$, which represents the conditional optimal Sharpe ratio (squared), appears quite often in the formulas above. We wish to study its relation with the quantities representing the manager's skill. A little algebra (see Appendix 1) shows that

$$\mathcal{H}_S^2 = \bar{\mathbf{X}}' Q^{-1} \bar{\mathbf{X}} + 2(\mathbf{S} - \bar{\mathbf{X}})' \Sigma_\in^{-1} \bar{\mathbf{X}} + (\mathbf{S} - \bar{\mathbf{X}})' \Sigma_\in^{-1} \Sigma \Sigma_S^{-1} (\mathbf{S} - \bar{\mathbf{X}}). \tag{9.32}$$

Note that the conditional, active, Sharpe Ratio (squared) $\mathcal{H}_S^2$ may take on values that are smaller than the unconditional, passive, one $\mathcal{H}^2$. For instance, when the forecast $\bar{\mathbf{X}}_S$ is equal to zero, which means that the forecast asset return is equal to

the riskless return R, the conditional Sharpe ratio is also zero and is therefore smaller than the passive one.

Now we can compute the expected value of the active Sharpe Ratio (squared)

$$\mathbb{E}[\mathcal{H}_S^2] = \bar{\mathbf{X}}' Q^{-1} \bar{\mathbf{X}} + \mathrm{tr}\left(\Sigma_{\in}^{-1} \Sigma\right) \tag{9.33}$$

where tr(·) represents the trace operator (the proof is in Appendix 2). Moreover, using

$$Q^{-1} = \Sigma_{\in}^{-1} + \Sigma^{-1} \tag{9.34}$$

we also get

$$\mathbb{E}\left[\mathcal{H}_S^2\right] = \mathcal{H}^2 + \bar{\mathbf{X}}' \Sigma_{\in}^{-1} \bar{\mathbf{X}} + \mathrm{tr}\left(\Sigma_{\in}^{-1} \Sigma\right). \tag{9.35}$$

Active Socially Responsible Investment

At this point, we would like to make a distinction between "SR" and "non-SR" (or "unacceptable") assets. We assume that the first y components of $\mathbf{X}$ represent the returns of the SR-assets. From now on we shall use letters Y and Z to indicate all the quantities associated to SR and non-SR assets, respectively. For instance, we represent the expected excess return and its covariance matrix as

$$\bar{\mathbf{X}} = \begin{pmatrix} \mathbf{Y} \\ \mathbf{Z} \end{pmatrix}, \quad \Sigma = \begin{pmatrix} \Sigma_Y & \Sigma_{YZ} \\ \Sigma_{YZ} & \Sigma_Z \end{pmatrix}; \tag{9.36}$$

where $\mathbf{Y}$ is a vector of dimension y, $\mathbf{Z}$ is a vector of dimension $n - y$, and Σ_{YZ} is a $y \times (n - y)$ matrix.

To formalize the working hypothesis that with SRI there is more information due to the transparency of the firms involved, we assume that a portfolio manager is able to observe a signal related to the future returns of SR-assets only. Hence, we will apply the results of the above Sections to the subset $\mathbf{Y}$, denoting the corresponding quantities with a subscript Y, for instance we will denote by

$$\mathcal{H}_{Y,S}^2 = \mathbf{Y}'_S \, Q_Y^{-1} \, \mathbf{Y}_S$$

the square of the highest conditional Sharpe ratio on the set of SR assets.

An investor can choose between a passive or an active management strategy. If she chooses the passive one, she will bear a "cost of sustainability" due to the reduction of the investment set. However, an active management strategy can constitute a way to mitigate such a cost. In fact, while restricting the investment set leads to losses in terms of returns and diversification opportunities, active

management can compensate the reduction effect by increasing the Sharpe Ratio of the investment.

A portfolio manager called to invest according to some SR criteria, because of the constraints, may be afraid of foregoing an optimal portfolio allocation in favour of a suboptimal one. The investor is aware that the manager would rather accept a contract from another investor, without SR constraints, unless he is paid an extra bonus. Hence, the investor's task is twofold: offering the manager an attractive contract, and choosing a manager who can mitigate the cost of sustainability borne by the investor while reducing the investment set.

Firstly, we shall demonstrate how to solve the first problem of setting an extra bonus; we shall deal with the second problem of cost minimisation and manager selection afterwards.

In general, portfolio managers are paid a fee based on the wealth produced by their investment. In what follows, we will assume that such a fee is a linear function of the wealth. The manager receives a fix amount A, which we can set equal to zero without loss of generality, and a fee b. If we consider managers with exponential utility function and risk aversion α, the objective of the manager is to select a trading strategy to maximise (9.17) with W_0 and $\mathcal{H}^2$ substituted by bW_0 and $\mathcal{H}^2_{Y,S}$, respectively. We wish to stress the difference between the contract offered by an SR-investor and the one proposed by a conventional investor. Let's assume that the fee for a conventional contract is

$$f(b_0, \omega_X) = b_0 W_0 r_X,$$

where ω_X represents a portfolio composed of all the assets in the market producing a return r_X. Hence, the SR contract is

$$g(b, \omega_{Y,S}) = bW_0 r_{Y,S},$$

where $\omega_{Y,S}$ represents a portfolio composed of only SR assets conditional to the signal S, while $b = b_0 + \Delta$, where Δ is the extra bonus assigned to a SR manager.

Determining the Extra Bonus

The investor offers the manager an extra bonus Δ to compensate him for the reduction in the investment set, with a view to attracting only the best and more motivated managers. We explore the situation in which the manager is able to receive information only if he accepts the SR-contract. He observes the signal only after accepting the contract. The decision on whether or not to accept the SR-contract must be taken before observing the signal on the basis of the expected utility over all possible signals. The manager accepts the SR-contract if the participation constraint

$$\mathbb{E}[u(g(b, \omega_{Y,S}))] \;\geq\; \mathbb{E}[u(f(b_0, \omega_X))] \tag{9.37}$$

is satisfied. We refer to the right hand side of (9.37) as the manager's "reservation utility".

Note that $g(b, \omega_{Y,S})$ depends on the observed signal S and on the matrix $\Sigma_{\in,Y}$. Moreover the optimal allocations are a function of the contract parameter b_0 or $b_0 + \Delta$. In the following, for the sake of a simpler notation, we explicitly indicate at most two of these dependencies.

We assume that the investor is risk neutral, that is, she maximizes the expected return of the investment. To set the optimal extra bonus, the investor solves the problem:

$$\max_{\Delta} \mathbb{E}\Big[(1 - b_0 - \Delta)\, W_0 r_S(\omega^*_{Y,S}(\Delta))\Big] \tag{9.38}$$

$$\omega^*_{Y,S}(\Delta) = \arg\max_{\omega_{Y,S}} \mathbb{E}\big[u(g(b, \omega_{Y,S}))\big] \tag{9.39}$$

$$\mathbb{E}[u(g(b, \omega_{Y,S}))] \;\geq\; \mathbb{E}[u(f(b_0, \omega_X))], \tag{9.40}$$

the solution of which is in the following result.

Proposition 1. *The solution of the optimisation problem (9.38), (9.39) and (9.40) is*

$$\bar{\Delta} = c(\Psi + \Phi) \tag{9.41}$$

where

$$c = \frac{1}{2\alpha W_0 R} \qquad \Psi = \mathcal{H}^2 - \mathcal{H}^2_Y, \qquad \Phi = log\left(\frac{det(Q_Y)}{det(\Sigma_Y)}\right) \tag{9.42}$$

where $\mathcal{H}^2_Y = \bar{\mathbf{Y}}' \sum_Y^{-1} \bar{\mathbf{Y}}$ *and* $Q_Y = \Sigma_Y - \Sigma_Y \Sigma^{-1}_{S,Y} \Sigma_Y$.

Proof Using (9.26), the solution of (9.39) is given by

$$\omega^*_{Y,S} = \frac{1}{\alpha(b_0 + \Delta) W_0} Q_Y^{-1}\, \bar{\mathbf{Y}}_S\,.$$

The expected utilities in (9.40) are

$$\mathbb{E}[u(g(b,\ \omega_{Y,S}))] = -e^{-\alpha(b_0+\Delta)W_0 R} \cdot e^{-\frac{\mathbb{E}[\mathcal{H}^2_{Y,S}]}{2}} \tag{9.43}$$

and

$$\mathbb{E}[u(f(b_0, \omega_X))] = -e^{-\frac{\mathcal{H}^2}{2}} \cdot e^{-\alpha b_0 W_0 R}, \tag{9.44}$$

where $\mathcal{H}^2_{Y,S} = \bar{\mathbf{Y}}'_S Q_Y^{-1} \bar{\mathbf{Y}}_S$. To compute the expectations of (9.43), we consider that $\bar{\mathbf{Y}}_S$ is a normal random variable with mean $\bar{\mathbf{Y}}$ and variance $V_Y = \Sigma_Y \Sigma_{S,Y}^{-1} \Sigma_Y$.

Let

$$\varphi(A, B, v) := \mathbb{E}\left[e^{-\frac{v^T A v}{2}}\right],$$

where A is a $n \times n$ positive definite matrix and v is a n-dimensional normal random variable with mean v and variance B. A standard computation gives

$$\varphi(A, B, v) = \frac{e^{-\frac{c}{2}}}{\sqrt{det(AB + I_n)}}, \tag{9.45}$$

where

$$c = v^T (A^{-1} + B)^{-1} v$$

and I_n is the identity matrix of dimension n. Therefore,

$$\mathbb{E}\left[\mathbb{E}(u(g(b, \omega_{Y,S}))\right] = -e^{-\alpha(b_0+\Delta)W_0 R} \cdot \varphi(Q_Y^{-1}, V_Y, \bar{Y}).$$

Hence, the participation constraint (9.40) is satisfied if, and only if, the bonus Δ satisfies

$$e^{-\alpha\Delta W_0 R} \frac{e^{-\frac{\mathcal{H}^2_Y}{2}}}{\sqrt{det(Q_Y^{-1}\Sigma_Y)}} \leq e^{-\frac{\mathcal{H}^2}{2}}. \tag{9.46}$$

Now observe that the principal's expected wealth is

$$E[W_P] = (1 - (b_0 + \Delta)) \left[W_0 R + \frac{E[\mathcal{H}^2_{Y,S}]}{\alpha(b_0 + \Delta)}\right], \tag{9.47}$$

that is a decreasing function of Δ. Hence, the optimal extra bonus is given by the smallest Δ satisfying (9.46), that is by the value $\bar{\Delta}$ which satisfies it with an equality. By substituting the definitions of Ψ and Φ into (9.46) we get (9.41). □

Note that this result is similar to the one derived in Fabretti and Herzel (2012). However, here the signal is observed only on the SR-assets. The differences in implications will be explained further on in Section "Results and Discussion".

Information Precision and the Cost of Sustainability

Now we wish to consider the second problem, that is, how the investor can reduce the cost of sustainability. We define the "cost of sustainability" as the difference between the expected values of the passive strategy and the active strategy selected by a manager with risk aversion α:

$$C\left(\Sigma_{\in,Y}\right) := E[W_0 r_X] - E\left[W_0 r_{Y,S}\left(\Sigma_{\in,Y}\right)\right]. \tag{9.48}$$

Note that if $C\left(\Sigma_{\in,Y}\right)$ represents a cost for the investor when it is positive, otherwise it is a gain. From (9.17) and (9.29) we get

$$C\left(\Sigma_{\in,Y}\right) = \frac{1}{\alpha}\left(\mathcal{H}^2 - E\left[\mathcal{H}^2_{Y,S}\right]\right). \tag{9.49}$$

The following proposition gives the condition on $\Sigma_{\in,Y}$ such that $C\left(\Sigma_{\in,Y}\right) \leq 0$.

We use the notation: given two positive definite matrices A and B, we say that $A \succeq B$ if the matrix $A - B$ is positive semi-definite, that is $A - B \succeq 0$.

Proposition 2. *Let*

$$\Sigma_Y \Sigma^{-1}_{\in,Y} - \frac{1}{\gamma} I_y \succeq 0 \tag{9.50}$$

where

$$\gamma = \frac{y + \mathcal{H}^2_Y}{\mathcal{H}^2 - \mathcal{H}^2_Y} \tag{9.51}$$

then

$$C\left(\Sigma_{\in,Y}\right) \leq 0.$$

Proof From (9.49) we have that if

$$E[\mathcal{H}^2_{Y,S}] \geq \mathcal{H}^2$$

then

$$C\left(\Sigma_{\in,Y}\right) \leq 0.$$

Since we have

$$E[\mathcal{H}^2_{Y,S}] = tr\left(\Sigma_Y \Sigma^{-1}_{\epsilon,Y}\right) + \bar{Y}' Q_Y^{-1} \bar{Y}$$
$$= \mathcal{H}^2_Y + tr\left(\Sigma_Y \Sigma^{-1}_{\epsilon,Y}\right) + \bar{Y}' \Sigma^{-1}_{\epsilon,Y} \bar{Y}.$$

Therefore, if $\Sigma_{\epsilon,Y}$ satisfies

$$tr\left(\Sigma_Y \Sigma^{-1}_{\epsilon,Y}\right) + \bar{Y}' \Sigma^{-1}_{\epsilon,Y} \bar{Y} \geq \mathcal{H}^2 - \mathcal{H}^2_Y, \tag{9.52}$$

then $E\left[\mathcal{H}^2_{Y,S}\right] \geq \mathcal{H}^2$.

Now remember that if $A - B \succeq 0$ then $tr(A) \geq tr(B)$ and $\upsilon' A \upsilon \geq \upsilon' B \upsilon$. Hence, setting $A = \Sigma_Y \Sigma^{-1}_{\epsilon,Y}$ and $B = \frac{1}{\gamma} I_y$ and using (9.50), we get

$$tr\left(\Sigma_Y \Sigma^{-1}_{\epsilon,Y}\right) + \bar{Y}' \Sigma^{-1}_{\epsilon,Y} \bar{Y} \geq tr\left(\frac{1}{\gamma} I_y\right) + \bar{Y}' \frac{1}{\gamma} \Sigma_Y^{-1} \bar{Y}.$$

Substituting the value of γ in (9.51), we see that the right hand side is equal to $\frac{y}{\gamma} + \frac{1}{\gamma}\mathcal{H}^2_Y = \mathcal{H}^2 - \mathcal{H}^2_Y$, which proves the proposition. □

Manager's Selection

In this section we propose a definition of manager's skill and we discuss the problem of manager selection. In fact, the most important problem for any investor is that of selecting a skilful manager. The skill or precision of a manager here is represented by the matrix $\Sigma_{\epsilon,Y}$. In order to rank managers, we need to define their skill in some way.

We indicate as the manager's "SR-expertise" of a manager the quantity:

$$K := \frac{det(\Sigma_Y)}{det(Q_Y)}.$$

Note that K is always greater than one. In fact, $det(Q_Y^{-1}\Sigma_Y) = \frac{det(\Sigma_{\epsilon,Y} + \Sigma_Y)}{det(\Sigma_{\epsilon,Y})}$ and it can be proved that for semi-definitive positive hermitian matrix the inequality $det(A + B) \geq det(A)$ holds.

The factor Φ of Proposition 1 can be written as

$$\Phi = log\left(\frac{1}{K}\right). \tag{9.53}$$

In our setting, the relevant quantity to be determined by the investor is the SR-expertise K. In any practical situation, assessing the ability of a portfolio manager is a very hard task. As mentioned in the Introduction, the manager's ability can be

defined in terms of α-Jensen or other measures. However, any evaluation methodology remains unreliable and disputable. For this reason, we wish to formulate some strategies which can help the investor to set a bonus which attracts only the best managers without accurately knowing the manager's ability.

In our model it is possible for the investor to implement a simple bidding strategy to attract a manager with a sufficient SR-efficiency $\hat{K}$ supposing that the remaining quantities affecting the extra bonus in Eq. (9.41) are known.[2] Suppose that the investor has identified a group of portfolio managers with the same risk aversion α and that she wants to hire one of them whose SR-expertise is at least equal to $\hat{K}$. Thus, by offering an extra bonus with a $\hat{\Phi}$ computed by setting $K = \hat{K}$ in (9.53), she will attract all managers with a SR-expertise greater than $\hat{K}$, because the efficiency term is decreasing with respect to K, see Fig. 9.1. The investor should choose $\hat{K}$ according to some objective function. She could, for example, choose $\hat{K}$ such that the active management compensates the losses in earnings and diversification opportunities, i.e. eliminating the cost of sustainability. Another strategy could consist of offering no extra bonus, i.e. setting $\Delta = 0$. To give an explicit example and compare these two strategies let us consider the case of a $\Sigma_{\in,Y}$ proportional to Σ_Y:

$$\Sigma_{\in,Y} = \beta\Sigma_Y \; with \; \beta > 0.$$

In such a case we are able to explicitly write the SR-manager's expertise:

$$K = \left(\frac{\beta + 1}{\beta}\right)^{y}.$$

To avoid repetition, let us define K_0 as the value of the manager's expertise which eliminates the cost and K^* as the one which eliminates the extra bonus. We thus have

$$K_0 = \left(\frac{y + \mathcal{H}^2}{y + \mathcal{H}_Y^2}\right)^{y} \; and \; K^* = e^{\mathcal{H}^2 - \mathcal{H}_Y^2}.$$

We can see that $K^* > K_0$. This situation is shown in Fig. 9.1. The investor can offer Φ_0 or Φ^* which corresponds to $\Delta = 0$. In the former case, she will attract all managers enough skill to convert the cost into a gain, while, in the latter case, the gain is assured and the investor can avoid bearing the extra cost represented by the bonus itself.

[2] While some of these quantities, such as the variances and covariances of asset returns, can be estimated through standard statistical methods, others, like risk aversion α, should be determined by analysing the managers' attitudes toward risk.

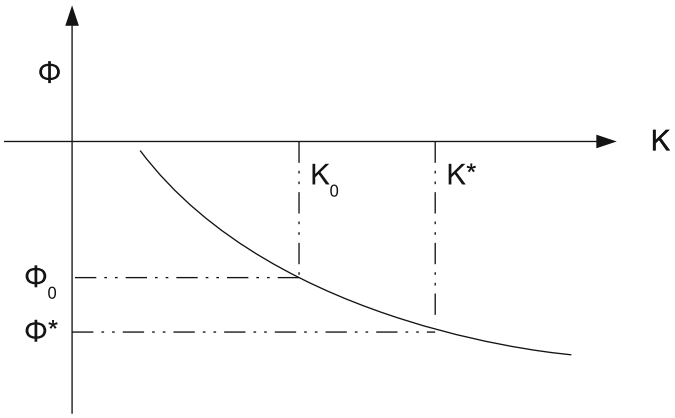

Fig. 9.1 The investor can choose between two strategies. One strategy consists of offering Φ_0 which corresponds to a manager's expertise which eliminates the cost of sustainability. In doing so, she will attract managers able to convert the cost into a gain. The second strategy consists of offering no extra bonus ($\Phi^* = -\Psi$, hence $\Delta = 0$). In such a case, she will attract managers with a SR-expertise higher than K^*

The main message here is that the investor can exploit the manager's expertise to reduce the cost of sustainability. If an investor wishes to choose those managers who are more focused on SR-investments, she should not offer more than $\hat{\Phi}$. Should the investor offer more than $\hat{\Phi}$, managers with less knowledge of the SR sector will also accept her offer. This is reminiscent of the arguments of Kreps (1997) on intrinsic motivations and extrinsic incentives: managers with a stronger intrinsic motivation to invest in SR assets demand a smaller extrinsic incentive in terms of extra bonus, and a higher extrinsic incentive can sometimes have a negative result, reducing intrinsic motivations.

Results and Discussion

The effects of some screenings are illustrated in Table 9.1. The data refer to 488 companies of S&P 500 of December 2006. For details on returns and covariances estimation we refer to Herzel et al. (2011). We used scores provided by KLD, a rating agency, to screen assets. The screenings are considered along the three main dimensions of SRI, namely: Enviroment (E), Social (S) and Governance (G). For each of these dimensions, KLD yields a set of indicators which are classified into strengths and concerns. A concern in a dimension indicates that the company had an unsatisfactory behaviour with regard to that dimension. The investment sets reported in Table 9.1 are derived by considering two screening criteria: one which discards all companies having some concerns with respect to one of the dimensions (indicated by E or S or G AllConcerns), and one which discards the

Table 9.1 The data refer to December 2006 and are 488 assets belonging to the *S&P*500

Investment set	No. of assets	$\mathcal{H}$	$\bar{r}_m$	σ_m
S AllConcerns	71	0.3909	0.0198	0.0774
G AllConcerns	152	0.4322	0.0160	0.0511
E AllConcerns	341	0.5309	0.0123	0.0260
E 10%	440	0.5750	0.0114	0.0207
S 10%	440	0.5778	0.0114	0.0203
G 10%	440	0.5809	0.0114	0.0201
S &P 500	488	0.5975	0.0112	0.0187

The screening was carried out by using strengths and concerns through the KLD database. AllConcerns means a screening which considers all the concerns, while 10% means that we discarded the worst 10% of the companies

Table 9.2 Some quantities of interest are reported for six investment sets derived by considering different screenings along the three dimensions: Enviroment, Social, Governance

Screening	y	ψ	γ	K_0	K^*
S AllConcerns	71	0.2042	$3.4843 \cdot 10^2$	1.2257	1.2266
G AllConcerns	152	0.1703	$8.9381 \cdot 10^2$	1.1853	1.1856
E AllConcerns	341	0.0751	$45.4150 \cdot 10^2$	1.0780	1.0780
E 10%	440	0.0264	$166.9800 \cdot 10^2$	1.0267	1.0267
S 10%	440	0.0232	$189.5600 \cdot 10^2$	1.0235	1.0235
G 10%	440	0.0196	$225.1000 \cdot 10^2$	1.0197	1.0198

The data refer to December 2006 and are 488 assets belonging to *S&P*500.The screening was carried out by using the strengths and concerns through the KLD database. AllConcerns means a screening which considers all the concerns, while 10% means that we discarded the worst 10% of the companies

worst 10% companies. Any investment set is reported with the corresponding Sharpe Ratio and market portfolio, excess return $\bar{r}_m$ and standard deviation σ_m. The screening along the Social dimension turns out to be the strongest, i.e. only 71 companies survived; in this case, the relative Sharpe Ratio is the lowest and the market portfolio standard deviation σ_m is the highest.

We are also interested in seeing the effect of the screening on the extra bonus and the manager's selection problem. Proposition 1 shows that the optimal extra bonus is equal to a constant that depends on the manager's risk aversion α, on the return of the risk free asset R, and on the asset under management W_0, multiplied by the sum of two terms. The first term, Ψ, is not affected by the manager's skill and is related to the loss in investment opportunity as perceived by the investor. An example of Ψ values according to the considered screening is given in Table 9.2. Not surprisingly, the higher the screening the higher the bonus. However when considering that the quantity Ψ is divided by α and W_0, for which we do not wish to make any assumption for now, this part of the bonus could be negligible. Moreover, we observe that the second term Φ, which depends on the manager's ability, is negative since $det(Q_Y^{-1}\Sigma_Y) > 1$. The quantity Φ is zero when the noise of the signal

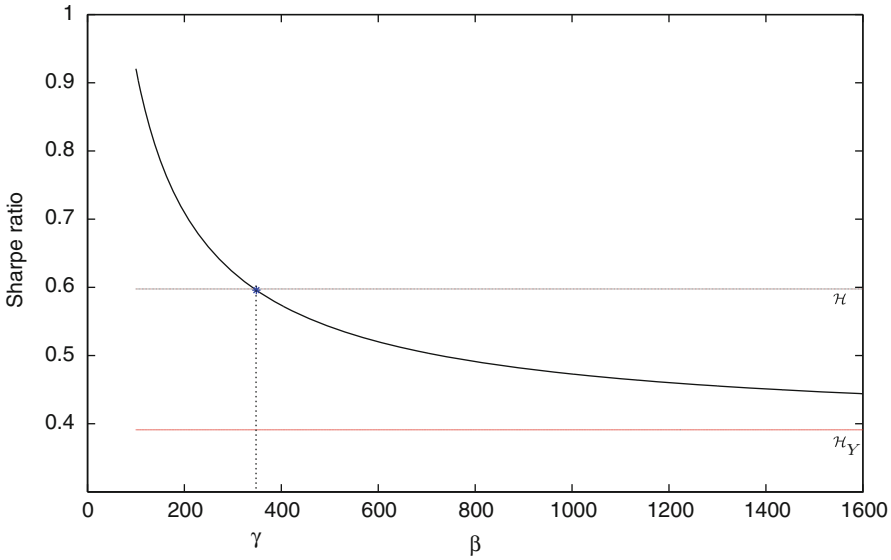

Fig. 9.2 The Sharpe Ratio against β, which represents the quantity of the noise in the signal, under the hypothesis of a $\Sigma_{\epsilon,Y}$proportional to Σ_Y. The Sharpe ratio goes to $\mathcal{H}_Y$ as β goes to infinity. When $\beta = \gamma$, where γ is given in (9.51), the Sharpe Ratio approximates $\mathcal{H}$

(the elements of the matrix $\Sigma_{\epsilon,Y}$) goes to infinity; in this case, the extra bonus reaches its maximum value $c\Psi$. This result is quite different from that obtained in Fabretti and Herzel (2012), where the corresponding efficiency term is always positive and unbounded. In fact, in that case, the equivalent of Φ is meant to be a compensation for unexploited information on unacceptable assets, while here the information exists only for SR-assets. In this case, the manager does not need to be compensated; on the contrary, he claims less compensation proportionally to his expertise: i.e., the higher the expertise, the lower the bonus. Indeed, as shown in the previous section, the investor can decide to offer no extra bonus.

Proposition 2 gives us a tool to establish whether a manager with signal noise equal to $\Sigma_{\epsilon,Y}$ is able to reduce the cost of sustainability, transforming it into a gain. In fact, if $\Sigma_{\epsilon,Y}$ belongs to the set identified by condition (9.50), the manager's expertise is enough to offset losses due to the restriction in the investment set. The important quantity to observe is γ in Eq. (9.51). To better explain the meaning of this quantity, let us consider the particular case of $\Sigma_{\epsilon,Y} = \beta\Sigma$, with $\beta>0$, and consider the performances of an active managed portfolio as a function of β. In such a situation, we are able to explicitly derive the Sharpe Ratio of Eq. (9.31):

$$\frac{E(r_{S,Y})}{\sqrt{V(r_{S,Y})}} = \frac{y + (\beta+1)\mathcal{H}_Y^2}{\sqrt{(\beta+2)y + (\beta^2+5\beta+4)\mathcal{H}_Y^2}} \tag{9.54}$$

which is plotted in Fig. 9.2 with $y = 71$ and $\mathcal{H}_Y = 0.3909$ (All Concerns Social screening). As expected for β going to infinity (the noise increases), the Sharpe ratio

goes to the one given by the SR-passive management. For $\beta = \gamma$, the Sharpe ratio is equal to the one of a conventional passive portfolio, i.e. the cost vanishes.

In Table 9.2, the γ values are reported for all the SR-investment set considered. It is interesting to observe that such a quantity turns out to be quite large even for the strongest screening. This seems to imply that, in order to offset the cost of sustainability, it is not needed to find a manager with outstanding qualities. Moreover, the fact that the values of K_0 are close to those of K^* makes us believe that a SR investor may decide to offer the same fee b_0 as the conventional contract, without foregoing the possibility of attracting managers, that are good enough to produce returns that may be even better than those of a conventional fund. Of course, a more rigorous data analysis is necessary to test the truth of these statements, but this is outside the scope of this paper and is left for future investigation.

Conclusion

In conclusion, we propose a model to describe the problem of a SR-investor who entrusts her wealth to a manager who is able to observe some information on SR-assets. We explore this situation in order to provide some theoretical grounding to the hypothesis that an active management strategy can offset any losses due to the reduction in the investment set, see Kurtz (1997). We suppose that a manager requires an extra bonus to accept the SR constraints, and we explicitly derive this bonus. Moreover, we consider the problem of an investor who has to select a manager capable of reducing the cost of sustainability. We explicitly find the level of information precision required and we provide a strategy for the investor to attract good managers. When testing our results on real data, we found that very little precision is required even for the strongest screening, and we also found that the investor can offer the same fee as a conventional investor without foregoing the opportunity of hiring good managers.

Appendix 1

Proof of Eq. (9.32).

Let us define

$$q_s = \Sigma \sigma_S^{-1}(\mathbf{S} - \bar{\mathbf{X}}),$$

then

$$\bar{\mathbf{X}}_S = q_s + \bar{\mathbf{X}}$$

and

$$\mathcal{H}_S^2 = \bar{\mathbf{X}}'_S Q^{-1} \bar{\mathbf{X}}_S \tag{9.55}$$

$$= (q_s + \bar{\mathbf{X}})' Q^{-1} (q_s + \bar{\mathbf{X}}) \tag{9.56}$$

$$= \bar{\mathbf{X}}' Q^{-1} \bar{\mathbf{X}} + 2 q_s' Q^{-1} \bar{\mathbf{X}} + q_s' Q^{-1} q_s. \tag{9.57}$$

Now observe that

$$Q = \Sigma - \Sigma \Sigma_S^{-1} \Sigma \tag{9.58}$$

$$= (\Sigma_S - \Sigma) \Sigma_S^{-1} \Sigma \tag{9.59}$$

$$= \Sigma_{\in} \Sigma_S^{-1} \Sigma \tag{9.60}$$

Hence,

$$q_s' Q^{-1} = (\mathbf{S} - \mathbf{X})' \Sigma_{\in}^{-1},$$

and

$$q_s' Q^{-1} q_s = (\mathbf{S} - \bar{\mathbf{X}})' \Sigma_{\in}^{-1} \Sigma \Sigma_S^{-1} (\mathbf{S} - \bar{\mathbf{X}}).$$

and we get the result by substitution.

Appendix 2

Proof of Eq. (9.33).

Taking the expectation of Eq. (9.32), we see that the first term is a constant and the second one vanishes, since

$$E\mathbf{S} = \mathbf{X}.$$

The third term is equal to $Ev'Mv$, where v is a standard normal random variable M is the matrix $L'\Sigma_{\in}^{-1} \Sigma \Sigma_S^{-1} L$, where $\Sigma_S = L'L$. The result then follows by observing that

$$Ev'Mv = \sum_i M_{ii} = \mathrm{tr}(M)$$

and using the commutative property of the trace operator tr.

This proof reminds to a classic result on the quadratic form, which we recall for completeness. Given a random vector υ of dimension n with mean $\bar{\upsilon}$ and covariance matrix Σ and given a symmetric $n \times n$ matrix A, the scalar quantity $\upsilon' A \upsilon$ is a quadratic form in υ. With no assumptions for the distribution of ν, except the existence of $\bar{\upsilon}$ and Σ, we can derive the expected value of $\upsilon' A \upsilon$. In fact, we have

$$E[\upsilon' A \upsilon] = tr(A\Sigma) + \bar{\upsilon}' A \bar{\upsilon}.$$

To also have the variance of such a quadratic form, we have to know the distribution of ν. Under the hypothesis that ν is a multivariate normal random variable we have

$$Var(\upsilon' A \upsilon) = 2tr(A\Sigma A\Sigma) + 4\bar{\nu}' A\Sigma A \bar{\upsilon}.$$

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Chapter 10
A Socially Responsible Portfolio Selection Strategy

Stefano Herzel and Marco Nicolosi

Introduction

A question that is often debated among academics and practitioners is whether Social Responsibility (SR) yields positive or negative financial performances or if its effect is neutral. To address this question, many studies have concentrated their analysis on the financial performances of ethical mutual funds. Using the Carhart (1997) 4 factor framework, Bauer et al. (2005) compared the alphas of ethical and conventional funds from different regions, reporting no significant differences on risk-adjusted returns. Similarly, Amenc and Le Sourd (2008) computed the alphas with respect to the Fama-French model of 62 Socially Responsible funds in the period 2002–2007 and observed, in most of the cases, a null or negative alpha. Others, like Statman (2000), reported a better performance of Socially Responsible funds, while Geczy et al. (2005) found the opposite result. Barnett and Salomon (2006) provided a possible explanation for the diversity of responses, by relating the financial returns to the level of screening enforced by the funds. By looking at a panel of 61 Socially Responsible funds from 1972 to 2000 they showed that as the number of social screens used by a Socially Responsible fund increases, financial returns decline at first, but then rebound as the number of screens reaches a maximum. They put forward that the financial loss borne by Socially Responsible funds due to poor diversification is offset as the level of social screening intensifies because better-managed and more stable firms are selected into its portfolio. They also show that the type of screening matters, that is funds that selected firms with a positive

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relationship with their local community increased their financial performance while funds that excluded firms violating norms of equal employment or included firms complying with environmental standards suffered a financial penalty. The importance of the screening procedure is also shown by Statman and Glushkov (2009) who formed portfolios by selecting the best and worst companies ranked by an industry-adjusted score, according to different Corporate Social Responsibility (CSR) dimensions, and found that the portfolios of high ranked stocks in the community, employee relations or environment dimensions produced higher returns than portfolios of low ranked stocks. Similar result was found by Kempf and Osthoff (2007) for the employee relation and the community dimensions.

Usually, the screening procedure of Socially Responsible funds, are classified as either "positive" or "negative". A negative screening implies to renounce some kind of stocks, called "sin stocks", involved in producing alcohol, tobacco, and gambling. A positive screening concentrates the investments of the fund only on the most active firms in terms of SR. Hong and Kacperczyk (2009) found that sin stocks have higher expected returns than otherwise comparable stocks. Therefore, a negative screen is likely to have a negative impact on the financial return of a fund. As pointed out by Derwall et al. (2011), investors who adopt a negative screening policy are wiling to have a lower return to obtain non-pecuniary utility, while investors who apply a positive screening policy are driven by the assumption that high CSR standards also produce superior returns. According to these authors, the empirical evidence that both controversial stocks and the best performing stocks by CSR standards have produced positive abnormal returns is not conflicting. In fact, the exclusion of controversial stocks can push down their prices producing superior abnormal returns (shunned-stock-hypothesis). On the other hand, the superior returns of socially responsible stocks can be explained in terms of a slow reaction of the market to recognize the positive impact of CSR practice on future cash flows (errors-in-expectations hypothesis). Since SR mutual funds adopt a mixture of positive and negative screens, they neither outperform nor underperform their conventional peers.

The effect of negative screening on optimal portfolios was studied extensively by Herzel et al. (2012). Using the KLD rates of US companies, the authors analyzed the impact of different CSR screening policies on the mean-variance optimal portfolios covering the period from 1993 to 2008. They found that, even though screening may have a big impact in terms of market capitalization, the loss of Sharpe Ratio is small. Moreover no significant differences were observed in the ex-post Sharpe ratios between the conventional and the corresponding screened portfolios. An application of the spanning test also showed that, if short selling was not allowed, the diversification opportunities only decreased significantly in the case of environmental based screening.

In this paper we propose a novel portfolio selection strategy based on positive screening, with the objective of improving a portfolio according to SR criteria and not, as it is usually done, according to financial criteria. More precisely, we define a measure of the level of a portfolio's SR along the three basic dimensions of SR: Environment (E), Social (S), and Governance (G), as well as along an aggregated measure that summarize the scores in all these aspects. Then SR is implemented

constraining the sustainability grade of the optimal portfolio to satisfy the required SR standards, rather than by screening away from the investment universe the stocks of firms with a negative SR performance. Our objective is to investigate if it is possible, and at what cost, to improve the level of SR of a given portfolio. Starting from the KLD sustainability scores, we consider as our universe of allocation the companies belonging to the S&P500 and/or the Domini 400 Social Index (DSI), a widely used benchmark for Socially Responsible portfolios, covering the period from 1992 to 2008. Equipped with our measure for the sustainability grade of a portfolio, we compute the level of SR of the DSI. Hence we propose a problem that should be of interest for any Socially Responsible investor who is also concerned with the financial performances of his portfolio, that is: "Is it possible to beat the benchmark from a Socially Responsible point of view, without losing in terms of financial performance?". Therefore, we formulate a new kind of problem of tracking error minimization. In fact, while the classical tracking error approach determines the portfolio that is closest to the benchmark in terms of tracking error variance and provides at least the same expected return, we impose an additional condition on the improvement of the level of Social Responsibility.

We found that it is possible to track the benchmark while improving the SR level of the portfolio at a cost that is small in terms of tracking error volatility. For example, we observed that doubling the SR level in the E dimension produces a tracking error volatility that is on average equal to 0.21%. A higher tracking error, of around 1.47%, is obtained when increasing the level of the G dimension. We found that the tracking error variance (our objective function), is less sensitive to the constraint related to the E level of the portfolio, while it is more sensitive to the constraint related to the S dimension until 2001 and to the G dimension from 2001 to 2008. In any case, in the last years of the analyzed period we observe a decrease of the impact and sensitivity of the G or S constraints. What is more interesting for investors is that such Socially Responsible improved portfolios are able to produce returns and risk-adjusted returns that are on average higher than those produced by DSI. Although the overperformance is not statistically significant, it is important to note that over a period going from 1992 to 2008, the portfolios determined through our optimization procedure often outperform the benchmark both in terms of returns and Sharpe ratios. We find that better financial performances can be obtained by increasing the level of social screening, at least when the benchmark is constituted by the Domini Social Index. In this aspect we can say that our study is in line with the results of Barnett and Solomon (2006), even if our analysis is very different from theirs under many important aspects, such as the fact that we consider portfolios constructed using our own criteria, while they considered a given sample of mutual funds. Moreover, in our case the intensity of the screening is determined according to a level obtained from the KLD scores, which we believe to be a more reliable measure than that of Barnett and Solomon who considered the number of screens used by each fund.

The rest of the paper is organized as follows. Section "Measuring Social Responsibility" describes the dataset used and how the data is processed. Section "The Portfolio Selection Strategy" introduces the mathematical problem and defines the

level of SR of a portfolio. Section "Data Input Estimation" estimates the inputs of the problem and namely the covariance matrices and expected returns. Section "Empirical Results" reports the main empirical findings of the analysis. Section "Conclusions" concludes.

Measuring Social Responsibility

To provide a quantitative measure of social responsibility we used data released by KLD Research and Analytics, a company specialized in SR rating.[1] KLD rates US companies on seven different CSR criteria: Corporate Governance, Community, Diversity, Employee Relations, Environment, Human Rights, Product Quality. For each of these aspects KLD considers different qualitative indicators taking values 0 or 1. There are two types of indicators: strength and concern. A value equal to 1 in strength indicates that the company has a proactive behavior in complying with the issues related to that indicator and it has to be thought of as a positive score. On the other hand, a value equal to 1 in a concern indicator reveals a weakness of the company to comply with the standards related to that indicator and has to be thought of as a negative score. A company with any strength and concern equal to 0 in a given CSR criterion cannot be qualified for that aspect. KLD also provides negative ratings (only concern indicators) on controversial business issues such as Alcohol, Gambling, Firearms, Military, Nuclear Power and Tobacco. The rates are assigned on the basis of the company's CSR reports and public information, and after a direct engagement with the company. The rates, reflecting the performances of a given year, were released at the beginning of the following year. The coverage universe considered by KLD increased along the years. From 1991 to 2000 it consisted mainly of the US companies belonging to the Domini 400 Social Index or to the S&P500 index.[2] In 2001 KLD expanded its coverage to include the largest 1,000 US companies by market capitalization. Since 2003 KLD has rated the largest 3,000 US firms.

Our analysis covers the period from 1992 to 2008 and it is based on the KLD ratings from 1991 to 2007. We considered the companies belonging to the S&P500 index and/or to the DSI.[3]

In order to reduce the dimensionality of the problem it is a common practice to aggregate strength and concern indicators. Several ways to achieve the aggregation

[1] At the end of 2009, KLD Research and Analytics was acquired by RiskMetrics. After the MSCI's recent acquisition of RiskMetrics, the KLD's sustainability rating system has been integrated in the MSCI ESG Research.

[2] The Domini 400 Social Index is now called MSCI KLD 400 Social Index.

[3] Since KLD used the names and, only after 1995, the CUSIP codes in order to identify the companies, while the financial data we used were downloaded from Datastream that uses ISIN codes for identification, matching the financial data with the KLD data produced a loss of about 5% in the total market capitalization of the investment universe.

have been proposed in the literature (for a review, see Manescu 2011). As the total number of strengths and concerns may vary from a KLD dimension to another and over time, there can be a problem of comparability between dimensions with different number of indicators and also for comparison of same items from year to year. In our analysis we followed the so called "Relative" aggregation method in Manescu (2011) as it solves any issue of comparability. To compute the aggregated rates, one has to first standardize the sum of strengths and concerns in a given dimension dividing respectively by the annual number of strengths and concerns, and then subtracting the standardized sum of concerns from the standardized sum of strengths.

In practice, for a given KLD dimension $a = 1, \cdots, 7$ and for any company i, the aggregate rate for a certain year is

$$R_{ia} = \frac{\sum_{k=1}^{n_a} s_{ia}^k}{n_a} - \frac{\sum_{k=1}^{m_a} c_{ia}^k}{m_a} \tag{10.1}$$

where $s_{ia}^k \left(c_{ia}^k\right)$ is the value of the k-th indicator measuring the strength (concern) of company i in the dimension a, and $m_a(n_a)$ is the annual number of indicators measuring the strengths (concerns) related to that dimension. Of course, the aggregate rate R_{ia} ranges between -1 and 1 and is also time dependent.

In our analysis we considered a further aggregation in the three main CSR dimensions: E, S and G. As two of the aspects taken into account by KLD are already related directly to the environmental and governance issues, we summed the rates of the remaining five KLD aspects computed according to Eq. (10.1) in a unique rate reflecting the social performance.[4] To make the social rate comparable with the environmental and the governance one, we divided this sum by the number of considered aspects. Moreover, we considered also an overall ESG rate that is equal to the sum of all the aggregated rates divided by the number of all KLD aspects

$$ESG_i = \frac{\sum_{a=1}^{7} R_{ia}}{7}. \tag{10.2}$$

We are now equipped with 4 measures, 3 of them related to the E, S and G aspects of CSR, and the last one being an aggregated measure of them, that we can apply to the DSI. We define the sustainability grade of a portfolio in one of the previous aspects as a linear combination of the rates of companies with coefficients equal to their weight in the portfolio (we will formalize this measure in Section "The Portfolio Selection Strategy").

The four panels in Fig. 10.1 represent the sustainability grade of DSI in the period 1992–2008 along the four dimensions, and the distributions of the rates of

[4] The remaining five aspects are: Community, Diversity, Employee Relations, Human Rights, Product Quality.

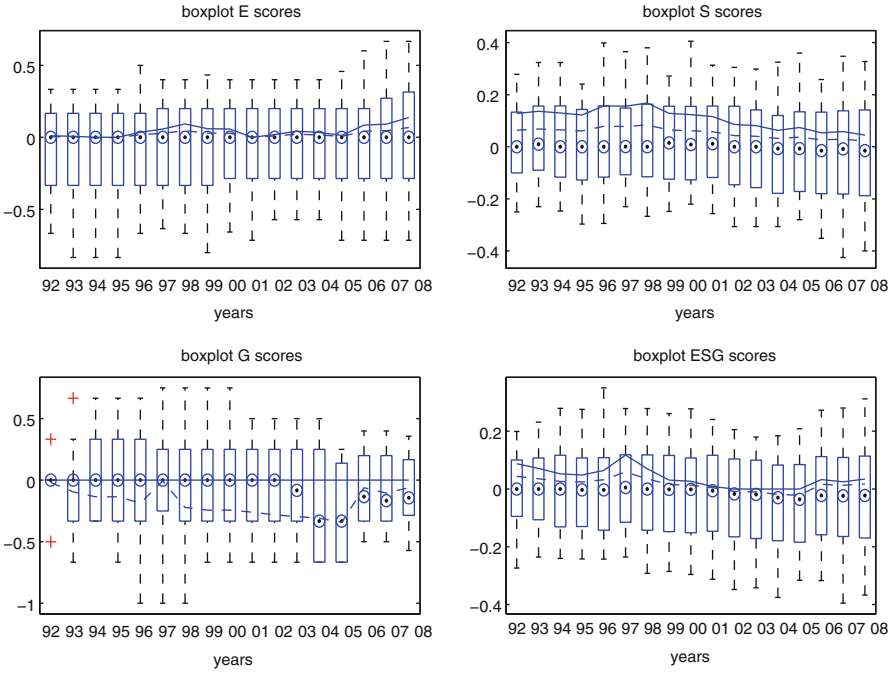

Fig. 10.1 Boxplots of firms' Sustainability rates according to the E(*top left*), S(*top right*), G (*bottom left*) and ESG(*bottom right*) dimensions along the period 1992–2008. The candles represent the 5-th and 95-th percentiles while the circles represent the median values of the distributions. Note that the scales on the four plots are different. For comparison the sustainability grade of the DSI (*dotted line*) and of the improved portfolios (*continuous lines*) are also shown

firms belonging to the S&P500 index and/or to the DSI. The boxes represent the 5-th and 95-th percentiles and the circles are the medians. The grade of the DSI is represented by a dotted line, while the continuous line is the level of the improved portfolio that we construct below. The E grades (top left panel) have a negatively skewed distribution with a median close to zero, and the grades of the DSI have been slightly above the median along the period. The S grades (top right panel) have symmetric distributions, with medians oscillating around zero. The S grades of the DSI are usually above the medians, but far from the top percentiles. The G grades (bottom left panel) have a median that is equal to zero until 2002 and that becomes negative afterwards. We note that the G grades of the DSI are consistently negative and below the corresponding medians. The aggregated grades, represented in the bottom right panel, show symmetric distributions along the years, with the grades of the DSI slightly above the medians and far from the higher percentiles. Overall, we observe that the grade of the DSI is higher for the S and G dimensions, in terms of their absolute values.

In what follows we show how to design portfolios with at least the same expected returns of the DSI but higher sustainability grades, also controlling for the risk by minimizing the tracking error from the benchmark.

The Portfolio Selection Strategy

In an active portfolio allocation, the task of the manager is to beat a given benchmark. The manager usually keeps an allowed maximum level of the tracking error volatility, defined as the standard deviation of the difference between the portfolio and the benchmark's returns, and tries to maximize the relative expected return. Alternatively, one can minimize the tracking error volatility and fix a minimum level for the relative expected return. Other restrictions, usually expressed in terms of inequality linear constraints, are also common in portfolio allocation, for a review of the problem, see, for example, Jorion (2003). In our analysis we set as a benchmark the DSI and the companies belonging to the S&P500 index and/or to the DSI as the investment universe. The DSI shares with the S&P500 index about 250 companies, chosen on the basis of their CSR performance. The remaining 150 companies in the social index are medium and small capitalization companies chosen for their proactive behavior in complying with the CSR standards. Our objective is to beat the benchmark in terms of CSR performances rather than in terms of expected returns. To this goal, we introduce in the optimization problem some linear inequality constraints reflecting the required level of sustainability of the portfolio and we measure the impact of such constraints on optimal allocations in terms of the tracking error. By solving the problem, we can also measure the sensitivity of the tracking error to the sustainability constraints.

Let us denote by N the number of assets in the investment universe and by w the N-vector of weights of a generic portfolio. Let C be the $3 \times N$ matrix whose entry C_{ij} represents the rate in the E, S or G dimension of company j. We define the "sustainability grade" of a portfolio w as the three-dimensional vector $d_w = Cw$, that is the linear combinations of the E, S or G rates of the individual assets with coefficients equal to w. In our exercise we compute the sustainability grade of the benchmark and then try to find portfolios that are better than the benchmark in terms of the sustainability grade, but are still close to the benchmark in terms of tracking error.

Let us denote by Σ and μ, respectively, the covariance matrix and the vector of expected returns of the assets, and by $v = w - w_b$ the active position with respect to the benchmark portfolio w_b and consider the quadratic optimization problem:

$$\min_{v} v'\Sigma v \tag{10.3}$$

$$v'\mu \geq 0 \tag{10.4}$$

$$Cv \geq d \tag{10.5}$$

$$\sum_{i=1}^{N} v_i = 0 \tag{10.6}$$

$$v \geq -w_b. \tag{10.7}$$

We minimize the tracking error variance $v'\Sigma v$, subject to Eq. (10.4), that constrains the portfolio expected return to be at least as large as that of the benchmark, and to Eq. (10.5), that set the E, S and G grades of the portfolio to be greater than those of the benchmark by the quantities given by the 3-vector d, whose components we indicate with $d' = (E_d, S_d, G_d)$. In order to make the sustainability constraints more clear, we express d in terms of some percentages (x_E, x_S, x_G) of the absolute value of the E, S and G grades of the benchmark, $d'_b = (E_b, S_b, G_b)$, and we set the transpose vector as

$$d' = (x_E|E_b|, x_S|S_b|, x_G|G_b|) \tag{10.8}$$

For example, setting $x_E = 1$ and $x_S = x_G = 0$, corresponds to requiring a sustainability grade that is at least twice the level of that of the benchmark, in the environmental dimension, while leaving the grades corresponding to the social and to the governance dimensions to be at least equal to those of the benchmark. The other two constraints expressed by Eqs. (10.6) and (10.7) are wealth and short-selling constraints, respectively.

Let us denote by λ_E, λ_S and λ_G the shadow prices associated respectively to $(Cv)_E \geq d_E$, $(Cv)_S \geq d_S$ and $(Cv)_G \geq d_G$. The shadow prices are functions of the minimum required levels of the sustainability grades d_E, d_S and d_G and can give a ranking of the different sustainability dimensions according to their impact on the objective function. In fact, the higher the shadow price, the higher the sensitivity of the tracking error to changes in the relative constraint. Suppose for example we have a certain constraint of a maximum level l and we reduce the level by subtracting an amount Δl, then the minimal tracking error decreases, approximately, by an amount $\lambda(l)\Delta l$ and we get the following approximation for the change of tracking error variance

$$\sigma^2_{TE}(l) - \sigma^2_{TE}(l - \Delta_l) \simeq \lambda(l)\Delta l. \tag{10.9}$$

Therefore the product $\lambda(l)\Delta l$ represents approximately the earning in terms of a reduction in tracking error variance obtained when the constraint is relaxed by a quantity Δl.

In the case we track the benchmark constraining the portfolio w only on the basis of the unique ESG rate computed as in Eq. (10.2), the matrix C in Eq. (10.5) is a row vector containing the companies' ESG rate while d is a number that we express in terms of a percentage x_{ESG} of the grade of the benchmark ESG_b: $d = x_{ESG}|ESG_b|$. Moreover, we denote with ESG_w the ESG sustainability grade of the portfolio w. The relative shadow price will be indicated with λ_{ESG}.

Data Input Estimation

The input data of the allocation problem (10.3), (10.4), (10.5), (10.6), and (10.7) is the matrix C of the CSR rates, the covariance matrix Σ and the vector of expected returns μ. While we have already explained how to construct the matrix C, in this

section we show how to estimate the remaining data. In particular the computation of the covariance matrix requires some attention because of the dimensionality of the problem.[5] A factor model that explains all returns in terms of a small number of risk factors is a suitable solution for our purposes.

We adopt the model proposed by Carhart (1997) to estimate the covariance matrix. If we denote with R_{it} the return of the i-th company at time t, and with RF_t the return of the risk free asset, the model equation is:

$$R_{it} - RF_t = \alpha_i + \beta_{i1}\left(R_t^M - RF_t\right) + \beta_{i2}\,SMB_t + \beta_{i3}\,HML_t + \beta_{i4}\,MOM_t + \in_{it} \tag{10.10}$$

where $R_t^M - RF_t$ is the excess return of the market at time t. SMB_t denotes the return at time t of the small cap portfolio minus the large cap portfolio. HML_i denotes the return at time t of the value stocks' portfolio minus the growth stocks' portfolio and MOM_t refers to the return at time t corresponding to the momentum factor.[6] The $beta_i$ coefficients are factor loadings of portfolios over the risk factors while coefficient α_i represents the extra expected return of the i-th company that is not directly explained by the risk factors. The $\in_{i,t}$ terms represent the idiosyncratic errors.

Given an estimation date,[7] we first perform the regression (10.10) considering monthly observations over an estimation window of 5 years and then compute the covariance matrix Σ as:

$$\Sigma = \beta Var(f)\beta' + Var(\in), \tag{10.11}$$

where β is the $N \times 4$ matrix of factor loadings, $Var(f)$ is the 4×4 covariance matrix of the risk factors and $Var(\in)$ is the covariance matrix of the error terms. The covariances in Eq. (10.11) were estimated by the corresponding sample versions under the assumption that the covariance of the error terms is well approximated by a diagonal matrix, i.e. the idiosyncratic terms are uncorrelated.

We estimate the vector of expected returns μ using a market neutral forecasting assumption as in Herzel et al. (2012)

$$\mu = RF + c\Sigma w^{mkt}. \tag{10.12}$$

The vector w^{mkt} represents the market portfolio, whose i-th component is the relative market capitalization of the i-th company with respect to the total capitalization of the market. Given an estimation of the covariance matrix, this choice for μ makes the market portfolio mean-variance efficient. The parameter c, related to the Sharpe Ratio of the market portfolio, is just a scaling factor for the expected excess returns, and therefore it does not affect the problem at hand.[8]

[5] The sample covariance matrix is singular if the number of observations is less than $N + 1$.

[6] The time series of the companies' returns were downloaded from Datastream while those of the risk factors from the K.R. French's web site.

[7] We set the estimation date at every January from 1992 to 2008.

[8] The parameter c would only appear as a constant multiplying μ in constraint (10.4).

Empirical Results

We computed the solution of problem (10.3), (10.4), (10.5), (10.6), and (10.7) for each year from 1992 to 2008. Note that it is a convex optimization problem and therefore it has a unique solution that can be determined very efficiently by applying standard numerical software.

Our first test studies the effects of doubling the sustainability level of the four dimensions, that is by setting one of the coefficients x_E, x_S, x_G in Eq. (10.8) to 1 and the others to 0, or by setting $x_{ESG} = 1$, in the case of the aggregated ESG measure. The sustainability grades of the optimal portfolios are represented in the four plots of Fig. 10.1 (continuous lines). Let us note that as the G grade of the benchmark is negative (or zero in some cases), the grade of the optimal improved portfolio is always zero by construction. Figure 10.2 represents the corresponding tracking error volatilities, that is the quantity that is minimized by the optimization procedure. It appears that the impact of the increase on the tracking error is proportional to the corresponding absolute level of the benchmark. Therefore, the highest impact on tracking errors are caused by the G and S dimensions. We also observe that the tracking error volatility decreases at the end of the period for all but the E dimension.

Given a level l of a certain constraint, the shadow price $\lambda(l)$ represents the sensitivity of tracking error variance to that constraint. Figure 10.3 reports the shadow prices relative to the sustainability constraints corresponding to the cases previously analyzed. We observe that the tracking error variance has the least sensitivity to changes in the E dimension and the highest one to changes in the S dimension until 2001 and to changes in the G dimension afterward.

To compare the financial performances of the optimal portfolios to that of the benchmark, we computed the excess Sharpe ratios that is the differences between the respective ex-post Sharpe ratios. The results are reported in Table 10.1, in percentage terms. A positive excess Sharpe ratio means that the optimal allocation has a higher risk-adjusted return than the DSI. Overall, we see that Sharpe ratios of the optimal portfolios are often greater than that of the DSI. The mean excess Sharpe ratio is the highest for the S dimension with 5.18% and the lowest for the ESG dimension with 0.52%. By observing the yearly performances we see that the excess Sharpe ratio is usually positive. Therefore, even if the mean is not significant because of the high variance of the sample, we see that improving the sustainability level produce portfolios that usually outperform the benchmark. The Sharpe ratio analysis is confirmed by the analysis on the realized returns, shown in Table 10.2. Here we see that the four optimal portfolios on average outperformed the benchmark for most of the years in the sample even though not in a statistically significant way.

We regress the time series of the realized returns of the optimal portfolios against the factors of the Carhart's model. The same is done for the excess returns from the benchmark. From this analysis, reported in Table 10.3, we see that the alphas of the optimal portfolios are always greater (with the exception of the ESG

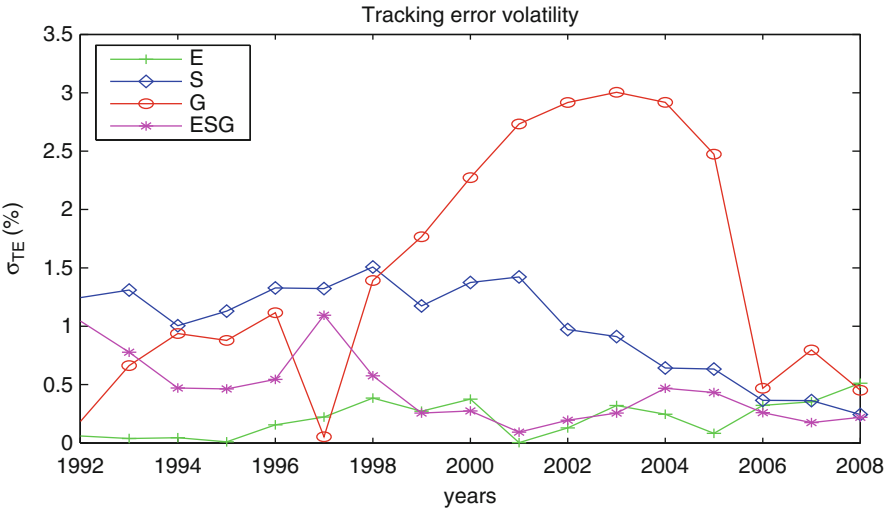

Fig. 10.2 Tracking error volatility (%) of portfolios that are constrained to have the sustainability level of one of the CSR dimensions increased by a factor of 10%

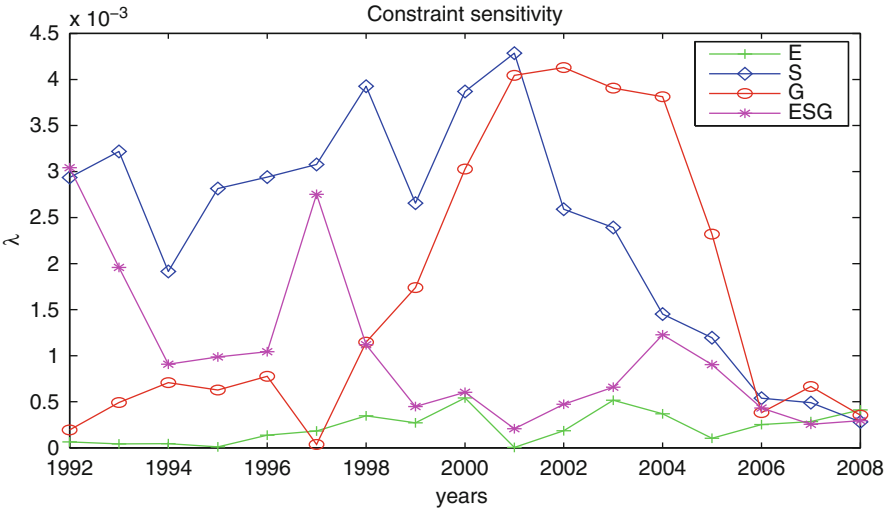

Fig. 10.3 Sensitivity of the tracking error variance to the sustainability constraints. The shadow price λ of portfolios that are constrained to have the sustainability level of one of the CSR dimensions increased by a factor of 10% is shown

aggregated case), although not significantly, than the corresponding quantity of the benchmark, confirming, the results on the excess Sharpe ratios of Table 10.1. The loadings of the optimal portfolios do not differ significantly from those of the benchmark, except for the G optimal portfolio, that is generally more invested in

Table 10.1 Excess Sharpe ratios corresponding to the differences between the ex-post Sharpe ratios of the improved portfolios and that of the benchmark

Sharpe ratio (%)				
Year	E-BENCH	S-BENCH	G-BENCH	ESG-BENCH
1992	−1.11	−34.47	−4.45	−29.03
1993	0.29	34.09	0.43	17.85
1994	−0.53	−0.92	−4.25	−3.66
1995	0.12	60.34	−57.83	13.77
1996	1.60	2.14	14.63	4.04
1997	−0.87	−3.94	0.35	−0.21
1998	1.23	6.83	−30.27	0.35
1999	7.13	10.31	−7.63	4.25
2000	0.10	6.33	19.04	0.48
2001	−0.02	3.04	54.66	0.08
2002	0.88	10.16	13.26	2.43
2003	3.78	13.54	37.87	5.84
2004	0.93	2.32	14.86	3.77
2005	0.12	−9.91	−13.89	−6.53
2006	6.47	1.59	2.56	1.15
2007	11.54	−11.01	23.43	−3.55
2008	−6.50	−2.45	0.20	−2.16
Mean	1.48	5.18	3.70	0.52
Std	3.98	19.81	25.33	9.71

The results are reported yearly in percentage terms. The last two rows show also the mean and standard deviation of the excess Sharpe ratios over the period 1992–2008

Table 10.2 Mean and standard deviation over the period 1992–2008 of the annual realized returns of the optimal portfolios in excess to those of the benchmark

Yearly returns(%)				
Year	E-BENCH	S-BENCH	G-BENCH	ESG-BENCH
Mean	0.18	0.38	0.59	0.05
Std	0.39	1.27	4.00	0.66

Results are in percentage terms

Table 10.3 Carhart's factor loadings of the monthly realized returns of the improved portfolios and of the excess realized returns with respect to the benchmark

Portfolio composition with respect to the Carhart's model					
	α (%) Yearly	Mkt	SMB	HML	Mom
E	3.09	0.87**	−0.14**	−0.05	−0.13**
S	3.31	0.87**	−0.14**	−0.04	−0.14**
G	3.50**	0.85**	−0.04	0.02	−0.16**
ESG	2.93	0.87**	−0.14**	−0.04	−0.13**
E-BENCH	0.13	−0.00	0.00	−0.00	0.00
S-BENCH	0.35	−0.01	0.00	0.01	−0.01
G-BENCH	0.54	−0.02	0.10**	0.07**	−0.03**
ESG-BENCH	−0.03	−0.00	0.00	0.01	0.00

The $\boldsymbol{\alpha}$ coefficients are given as a percentage on a yearly basis
The symbol ** indicates statistical significance at 5% level

Table 10.4 Mean and standard deviation over the period 1992–2008 of the tracking error volatility (first two columns) and the Active Share (second two columns) of the improved portfolios

Tracking error and composition						
	σ_{TE}		Active share		% out of DSI	
	Mean (%)	Std (%)	Mean (%)	Std (%)	Mean (%)	Std (%)
E	0.21	0.16	6.88	5.74	1.80	1.63
S	1.00	0.41	28.48	11.91	5.30	3.01
G	1.47	1.04	36.43	20.97	10.64	6.63
ESG	0.45	0.29	15.09	10.22	2.47	1.77

The last two columns give the mean and standard deviation of the percentage of stocks in the improved portfolios that are not in the DSI

small capitalization firms and in higher book to market (i.e. value oriented) firms than the DSI. The G optimal portfolio is also more invested in firms with a negative momentum, that is in previous market losers.

To have a better idea of the changes in the compositions of the portfolios with respect to the benchmark, we computed the Active Share, that is a measure of the activity of a portfolio manger proposed by Cremers and Petajisto (2009) and the percentage of wealth invested in firms that do not belong to the DSI. Active Share is defined as the percentage of the portfolio's holdings that differ from the benchmark index. More precisely it is:

$$AS = 0.5 \sum_{i}^{N} |w_i - w_{bi}|.$$

The factor 0.5 is a normalization that makes the Active Share be 100% when the portfolio has no overlap with the benchmark.

Table 10.4 reports the mean and standard deviation over the period of the tracking error volatility, the Active Share and the percentage of firms in the improved portfolios that are not in the DSI. We see a direct correspondence between the average tracking error and these two quantities, that is the E optimal portfolio, that has the smallest mean tracking error, has also the smallest Active Share and the smallest investment out of the DSI, while the highest level are reached by the G optimal portfolio, which has the greatest tracking error. By comparison to Cremers and Petajisto (2009) we can say that the optimal portfolios belong to the class of "closet indexers" with low Active Share and low tracking error volatility. This means that our algorithm does not require a substantial change of the composition of the benchmark in order to achieve the improved sustainability level.

We also studied the case of increasing by a generic factor x the portfolio's sustainability level relative to one of the E, S or G dimensions, as well as the ESG one, that is by setting one of the coefficients x_E, x_S, x_G in Eq. (10.8) to x and the others to zero, or by setting $x_{ESG} = x$, in the case of the aggregated ESG measure.

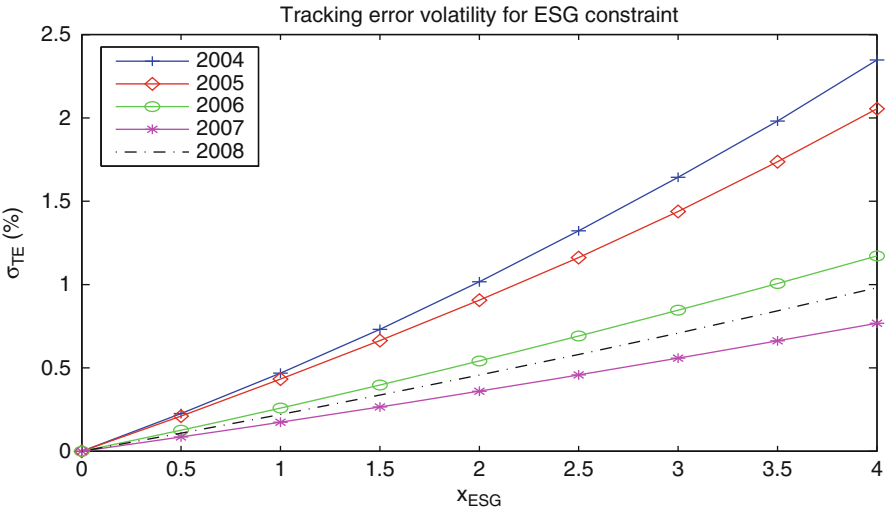

Fig. 10.4 Tracking error volatility (%) from 2004 to 2008 as a function of the level of increasing ${}^{x}ESG$of the portfolios' ESG grade. The portfolios are constrained to have $ESG_w \geqslant ESG_b + {}^{x}ESG|ESG_b|$, where ESG_w and ESG_b represent the ESG grades of the active portfolio and of the benchmark portfolio respectively. The coefficient ${}^{x}ESG$ is allowed to run from 0 to 4 (corresponding to vary from the benchmark level to a suitable upper limit)

The factor x is allowed to run from 0 (corresponding to the benchmark case) to 4, as a suitable upper limit. As an example, Fig. 10.4 shows the tracking error volatility for the last 5 years (2004–2008) of the analyzed period as a function of the level of increasing x_{ESG} of the sustainability grade in the ESG dimension. In particular the portfolio is constrained to have: $ESG_w eq ESG_b + x_{ESG}|ESG_b|$. We observe a linear relation between the tracking error volatility and the level of increasing. This is also prevalent in most of the other cases or years not shown in the figure. However let us note that: first, it is not always possible to push the level x to such extreme values as in the case of Fig. 10.4, as the optimization problem can become unfeasible; second, a convexity correction to the linear fit is observed when higher levels of tracking error volatility are required to satisfy the constraint, as for example for the G dimension. Figure 10.5 shows the corresponding shadow prices. As for the tracking error volatility, we observe a decrease of the sensitivity at the end of the period for the ESG dimension, as well as for the S and G ones (see Fig. 10.3).

We also consider the product $\lambda(l_w)|l_b|$ representing the earning in terms of a reduction of tracking error variance obtained when the portfolio constraint decreases from level l_w to $l_w - |l_b|$. Table 10.5 reports the means and the standard deviations over the yearly observations of such a product for different levels x of the constraint $l_w \geqslant l_b + x|l_b|$ according to one of the three dimensions E, S or G, as well as the combined ESG dimension. Results are presented multiplied by a factor 10^4. So for example the mean equal to 0.07, corresponding to the case $x = 1$ according to the E dimension, means that to increase the level of the benchmark in the E

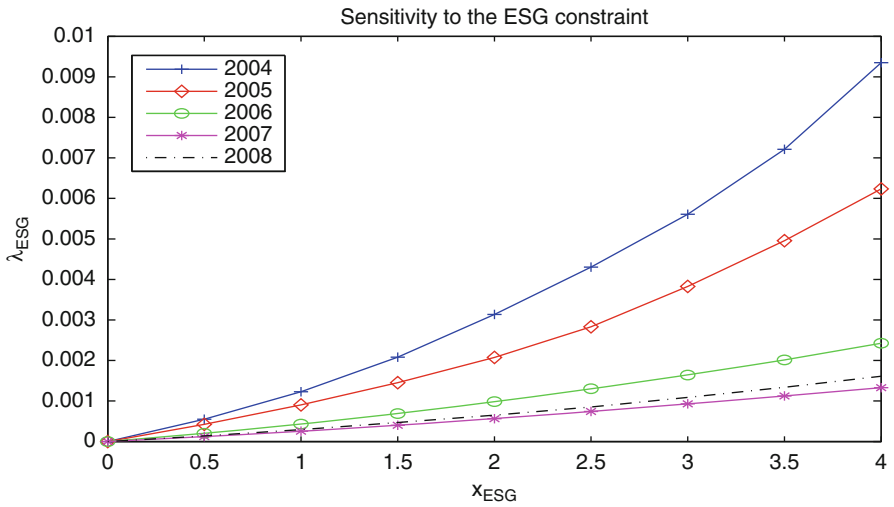

Fig. 10.5 Sensitivity of the tracking error variance from 2004 to 2008 as a function of the level of the increasing ${}^{x}ESG$ of the portfolio's ESG grade. On the y axis the shadow prices ${}^{\lambda}ESG's$ are shown

Table 10.5 Sensitivity of the tracking error variance to the sustainability constraints

Tracking error sensitivity									
	E		S		G		ESG		
x	Mean	Std	Mean	Std	Mean	Std	Mean	Std	$\times 10^4$
1	0.07	0.08	1.47	0.99	4.27	4.73	0.33	0.46	
1.5	0.12	0.13	3.57	2.86	14.23	17.23	0.72	1.18	
2	0.17	0.20	9.10	8.35	90.83	228.80	1.56	2.99	
2.5	0.24	0.28	36.46	47.38	135.50	406.18	4.39	10.14	
3	0.31	0.37	109.76	159.07	67.33	116.80	15.61	45.45	
3.5	0.40	0.49	280.37	498.35	229.96	534.08	2.37	4.17	
4	0.51	0.63	44.99	80.81	63.33	141.34	4.13	8.41	

The mean and standard deviation of the product $\lambda(l_w)|l_b|$ over the period 1992–2008 are shown. This product represents the earning in terms of a reduction of tracking error variance when portfolio constraint decreases from l_w to $l_w - |l_b|$. Results are multiplied by 10^4

dimension at least of a 100% factor, one needs to pay in terms of tracking error variance $0.007 \cdot 10^{-4}$ on average. This corresponds roughly to 0.26% in terms of tracking error volatility.

Conclusions

We proposed a portfolio selection strategy that minimizes the tracking error from the DSI and improves the level of sustainability. We observed that the DSI consistently exhibits a rather low level of sustainability along all dimensions and

in particular in the G case. The ex-post analysis shows that improved portfolios outperformed the DSI for most of the years in the sample period. The averaged returns (both simple and risk-adjusted) of the improved portfolios are greater than those of the benchmark, albeit not significantly. A positive screening on the S dimension yields to the best performances, while the aggregation in a unique ESG score provides less favorable results. The analysis of the composition of the portfolios show that a minimum level of active management, according to the Active Share measure, is necessary to improve the DSI. Our findings confirm that increasing the pro-active, positive screening may have positive influence on the financial performances of a portfolio of assets.

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Part III
Ethics, Fraud and Managerial Decisions

Chapter 11
Corporate Social Responsibility Boundaries

Celine Gainet

Introduction

The first and major difficulty with corporate social responsibility is its definition. Many definitions have been given and yet a consensus is far from being reached. In fact, corporate social responsibility is a concept so large and multiform that it can only be considered through a broad definition linked to its purpose. In this Chapter, which aims to give some answers as to why some companies become socially responsible, I suggest a definition of corporate social responsibility that encompasses social, environmental and societal issues and that underlines the links between corporations and society as a whole. In this perspective, 'corporate social responsibility' (CSR) is defined as "corporate processes that aim at improving the corporation's effects on society". This definition does not specify whether it is on a voluntary basis or not, as this aspect can be somewhat ambiguous (Davis et al. 2006). The following examples, initially identified by Backman (1975), provide an illustration to this definition: employment of minority groups, reduction in pollution, greater participation in programs to improve the external community, improved medical care and improved industrial health and safety for employees, as well as the various programs designed to improve the quality of life of employees and the external community.

Instead of corporate social responsibility' the terms 'corporate public responsibility'—preferred by Preston and Post (1975)—could have been used to stress the "importance of the public policy process" and to emphasize "the functions of organizational management within the specific context of public life". In this context, one essential aspect of the term "public" is its emphasis on civic affairs and democratic processes. In this sense, using the terms 'corporate public responsibility' may have helped to underline the need to enlarge the definition of CSR by highlighting the company's impact on public policy. Apart from the fact that

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corporate social responsibility is commonly used instead of corporate public responsibility, the argument here is that links between organizations and public life are a means for companies to increase social welfare in a legitimate way. Hence, CSR is considered here as going "beyond compliance" but also includes "efforts to raise compliance standards" (Vogel 2005).

The early definitions given of CSR in the 1960s were generic and inclusive (Carroll 1999), and particularly relevant to the perspective taken here. The following definitions especially support the view of CSR developed in this Chapter, i.e. a broad definition of CSR emphasizing corporations embedded in political and sociocultural contexts (emphases added). According to Frederick (1960), social responsibility implies "a ***public posture*** toward society's economic and human resources and a willingness to see that those resources are used for broad social ends and not simply for the narrowly circumscribed interests of private persons and firms". McGuire (1963) emphasized that "business must act 'justly', as a ***proper citizen*** should". To put it a different way, "social responsibility in business is the pursuit of socioeconomic goals through the elaboration of *social norms* in ***prescribed business roles***", that is to say that "business takes place within a ***socio-cultural system*** that outlines through *norms and business roles* particular ways of responding to particular situations and sets out in some detail the prescribed ways of conducting business affairs" (Johnson 1971). This last definition reminds us that from antiquity the economic dimension was integrated into the polis, that is to say the public and social areas. In a similar perspective, the Committee for Economic Development (CED) in 1971 observed that "business functions by ***public consent*** and its basic purpose is to serve constructively the needs of society—to the satisfaction of society". Some of the later definitions of CSR are more specific and continue to highlight the sway of society on organizations. In this perspective, Carroll (1979) considered that "the social responsibility of business encompasses the economic, legal, ethical, and discretionary ***expectations that society has of organizations*** at a given point in time".

Stressing the connections between corporations and society, I address the following question: why do some companies act in a socially responsible way and others do not? Whereas numerous studies consider corporations' role in social, environmental and societal issues, the question of the determinants that lead some companies to implement CSR policies and others not has been poorly addressed. This analysis aims at providing a theoretical insight into reflection on the roles of corporations within society. It is intended to conceptualize what appear to be the boundaries of corporate social responsibility.

Albeit the relatively large number of companies that go beyond what is legally required is very surprising, companies bypassing rules or not doing their best to protect society keep making the headlines. Nike, which was regularly criticized over its policy towards suppliers finally reported on the matter in its 2004 company report. In summer 2007, Mattel had some trouble with its products manufactured in China that did not respect the standard of the final product regarding safety. Considering the media diffusion of these matters, it can be expected some companies will make changes in their policies: this kind of publicity always makes brand image more difficult to manage.

What is striking when one looks at policy makers' choices and corporate policies is the need of being under pressure to initiate implementation of better standards. For instance, Davis et al. (2006: 30) argue that "from 1999 to 2001, anti-globalization demonstrations could be seen as the major set of collective actions drawing attention in the mass media and forcing social responsibility issues of the global corporations onto the public agenda". Because it becomes necessary, according mainly to society's opinion, policy makers and corporations can justify the development of social, societal or environmental actions.[1]

A Globalized Puzzle: Policy Makers Do Not ACT to Improve Social Standards Unless Necessary

Neo-classical theory viewed the economy as composed of small companies that cannot even have an impact on market price. But, at the end of the nineteenth century, in many Western countries, capital became more and more concentrated, and this vested a relatively small number of companies with very influential power. As these companies grew, stocks became dispersed among a large number of shareholders (Avi-Yonah 2005), and concerns were raised regarding shareholders' lack of control over their companies and besides managers' lack of accountability to society in general (Berle and Means 1932). Hence, today, major questions remains about who is in charge of controlling companies' activities, what kind of controls could be sufficiently efficient to avert tragedies or ecocatastrophe, and to what extent companies could improve society welfare.

A primary answer is about policy makers and public policy that establish the minimal standards on corporate social responsibility. Government regulation is essential: policy makers are in the most legitimate position to administrate society and 'hard law' is the only certain way to enforce everyone's compliance with new requirements. According to Lynch-Fannon (2007), "the argument is not that corporations should not be required to act in a socially responsible ways but that unless supported by regulation, which either demands high standards, or at the very least incentivizes the attainment of such standards such initiatives are doomed to failure". A more balanced vision between CSR and regulation recognizes that social and environmental welfare would be enhanced even more if many of the corporate voluntary actions were made legally binding; yet "CSR may frequently be a second-best alternative" (Vogel 2005). In fact, the companies with the best records in particular domains of CSR have tended to be those that have historically been most heavily regulated in those domains (Davis et al. 2006: 37).

Nevertheless, the role that governments should take on to enhance social and environmental welfare is constrained by major limits. First, government regulation

[1] The social, societal and environmental aspects of Social Responsibility will be grouped in this Chapter under the 'social', except when it is stated otherwise.

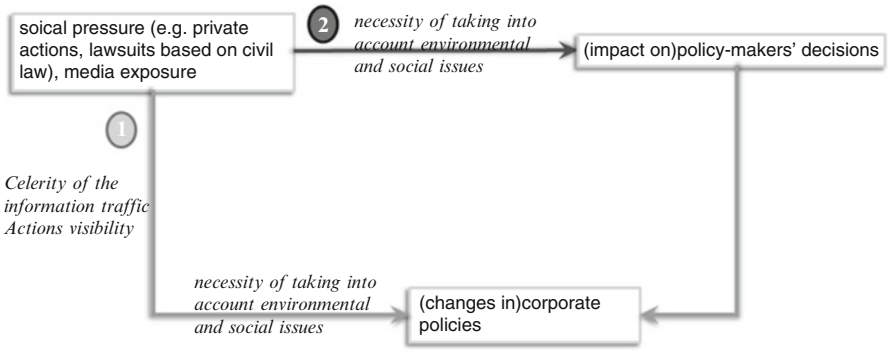

Fig. 11.1 Current practical ways that lead to the adoption of CSR policies

is *per se* geographically limited to within the nation state whereas the impact of companies very often reaches beyond national borders (Overdevest 2004). Second, companies greatly influence 'hard law'—in positive and negative ways, in particular by lobbying. Hence, to have a worldwide impact, politics need either to be coordinated on a world scale (without doubt, there would be delay before this happened), or to be coordinated (through a democratic process) with companies and the general public. Companies act upon the regulations of their own government and sometimes, if public policies do not benefit them sufficiently, they move to another state where regulation is more convenient. Globalization makes things difficult for policy makers as companies could—to a certain extent—choose between one system and another. In that context, regulators are more and more concerned about the economic consequences of their choices, and they generally do not want to put more economic pressure on companies to progress in environmental or social issues.

Social pressures often appear to be a powerful factor in persuading policy makers to take decisions that move towards stricter regulations (see Fig. 11.1, (2)). Public demonstrations, private protestations, and especially media exposure regularly put politicians in a position where they have to react and to take decisions that lead to stricter regulations. For instance, the Sarbanes-Oxley legislation (2002) and the associated changes in regulations by the Securities and Exchange Commission (SEC) were due to the Enron and Worldcom public scandals that affected public trust in business (Whitman 2003). In fact, necessity is largely the first motive for policy makers to enact laws that are far from being widely accepted, especially by business managers that often considered them as burdensome. In this perspective, *necessity* is defined as "unavoidable needs that must be met, in order to avert negative consequences that would be greater if anything else was done."

Even if public policy is indubitably the ground for defining companies' requirements on environmental and social issues, policy makers primarily act on those issues when social and media pressures are significant. Because of public and media engagements, policy makers could derive some benefits by acting against some corporate lobbying. For instance, the genetically modified foods regulations in

Europe, based on the precautionary principle, are stricter than the equivalent US regulations. This is partly due to the resistance put up by the European public against GMOs (Alami 2004).

When Companies Decide to Claim They Are Socially Responsible

Like politicians, companies generally wait to feel the necessity of improving their social and environmental policies before acting. Nevertheless, in numerous cases, companies do not wait to be legally constrained to enhance their social or environmental policies. In fact, many companies often begin to change under social pressures before regulation takes place. It has been demonstrated that even if regulations matter a great deal, social pressures appear to be a powerful factor in making companies' policies change too and in pushing some firms beyond the minimum required for compliance than others (Kagan 2003).

Whether companies act in a socially responsible way or not could be considered as resulting from two dimensions: the estimated demand by society to undertake CSR actions and corporate reputation. When it becomes necessary according to the opinion of the society one is operating in, and it seems that their reputation granted by their closed stakeholders is at risk, corporations begin to implement social, societal or environmental actions.

Companies Initially Act in a Socially Responsible Way Only If Necessary

Some companies do not only comply with regulations. A number of them go beyond regulations in terms of CSR actions undertaken. Why those firms take it upon themselves to be socially responsible?

On corporate social responsibility issues, companies face a dilemma between what society as a whole requires and the necessity of being increasingly efficient for investors (attentive to risk-return tradeoffs), customers (increasingly attentive to prices), and employees (alert to salary levels in the job market). In these circumstances, companies may undertake environmental and social actions for one of the following three reasons:

- first, because they have to; enforcement of regulations makes them change;
- second, because they should; lowering risk exposure is a key role of top management;
- third, because they want to; CSR represents a strategic opportunity to them.

In most cases, companies change their environmental or social policies because of one of the first two reasons. Less often, companies consider CSR as a strategic opportunity for them beyond any regulatory requirement or risk to their reputation.

In short, the three reasons mentioned above could be summarized by stating that corporations only change if they feel that it is *necessary*. Critics may give rise to the 'necessity to change'. According to Boltanski and Chiapello (1998), companies do change when critics are too strong and begin to induce corporate illegitimacy and potential corporate non-governability. But the factors causing 'necessity to change' to enhance social and environmental welfare are broader, as they could be either clearly expressed (like critics) or unformulated (because they are part of what ought to be expected by the society).

In fact, today, necessity is broadly due to what DiMaggio and Powell (1983) have called *coercive isomorphism* (see Fig. 11.1). According to them, coercive isomorphism is a powerful way to make organizations change: "Coercive isomorphism results from both formal and informal pressures exerted on organizations (. . .) by cultural expectations in the society within which organizations function. Such pressures may be felt as force, as persuasion, or as invitations to join in collusion." But, "the fact that these changes may be largely ceremonial does not mean they are inconsequential." Under coercive isomorphism, organizations increasingly tend to evaluate their corporate social strategy to communicate their Corporate Social Performance (CSP) and gradually come to care for social, environmental and societal issues.

When regulations do not go far enough, according to what is collectively expected, then companies may sometimes stand in for the state's role with civil regulation (else called 'soft law') or by ratifying a treaty that their country did not, as happened, for instance, with the Kyoto treaty. Even though the USA has not signed on to the Kyoto Treaty, the fact that international requirements about reductions in greenhouse gas emissions began to emerge has led some US companies to adopt policies on this issue (Hoffman 2005). Home Depot's procurement policies have helped prevent some of the harvesting of old growth and endangered forests, while policy makers of many developed countries have still not tightened restrictions in this area. To meet public expectations of corporate conduct in developing countries, Ikea and the Rugmark Foundation give access to education to some local children in India, whereas Nike observes more stringent occupational safety and health standards than the local legal constraints in Vietnam (Vogel 2005). Companies act like this because they estimate that the constraints implied by their choices are worth economically less than the risk of not acting. Whereas the major problem with soft law remains its enforcement, its major advantages are tailor-made measures and sometimes its reactivity.

The revival of CSR during the last two decades is linked with the increase of the *necessity* of being socially responsible, as supported by institutional actors such as public mentalities, managers' values, norms transmitted through key professions like academics and consultants, and even state administrations. In this context, not being socially responsible at all is becoming more and more risky for a corporation's image. The public awareness of issues such as climate change or human misery in developing countries is greater and greater. And, as the information is spread faster and faster, the risks of a company rapidly eroding the image it has built over many years increase. Although companies try to manage their communications better, they take on more corporate social responsibilities.

Corporate Reputation: Not Every Company Is Asked to Be Socially Responsible

From the traditional view that corporations are owned by shareholders (Berle and Means 1932), it has regularly been deduced that the only goal of corporations is to make profit. However, a crisis of legitimacy (Habermas 2001; Laufer 2005) and reputation has redefined the role of organizations and especially of multinational and globalized companies. Corporate legitimacy and corporate reputation[2] are two similar concepts both representing assessments of corporations by a society (Deephouse and Carter 2005). Suchman (1995) presented an encompassing definition of *legitimacy* as "the generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate" within a society. Maximizing shareholders' wealth as a corporate primary goal and the legitimacy of instrumental rationality are increasingly open to discussion. In this perspective, Millon (2002) usefully distinguished shareholder primacy and shareholder wealth maximization. Whereas shareholder primacy (else called shareholder value) is generally considered as being the primary principle to be pursued by the company law regime, this do not imply that shareholders' wealth maximisation should be the only goal of companies' managers (Lynch-Fannon 2007). Even if balancing stakeholders' claims could be conceptualized as part of the capitalist paradigm, it remains a hard exercise for corporate managers. Companies face a dilemma between what society as a whole requires and the necessity of being economically efficient and creating value for all stakeholders.

Commonly, companies wait to go through a crisis in their reputation before they undertake and communicate about social and environmental actions. Distinguishing the construct from identity, image and reputation capital, Barnett et al. (2006) define *corporate reputation* as "observers' collective judgments of a corporation based on assessments of the financial, social, and environmental impacts attributed to the corporation over time". Whereas certain stakeholders essentially base their judgment on the corporations' financial impacts, others take into account corporations' social and environmental impacts. The influence and activity of one group instead of the other depends greatly on corporate visibility. *Corporate visibility* could be defined as media and society awareness of an organization either because of its size, its belonging to a certain sector (e.g. contested industries), or as a result of a certain media exposed event. In fact, media visibility and society visibility might often be quite similar: "Media research found a close alignment between media content and public opinion as part of the agenda setting and framing paradigms, with most research indicating the media are active participants in the social construction processes of the public (. . .)" (Deephouse and Carter 2005). On the

[2] Whereas 'legitimacy' is part of major organization theories such as institutional theory (Meyer and Rowan 1977), resource dependence theory (Pfeffer and Salancik 1978), and organizational ecology (Carroll and Hannan 1989), 'reputation' plays a role in status theory (Shrum and Wuthnow 1988), in resource-based view (Hall 1992), and in game theory (Weigelt and Camerer 1988).

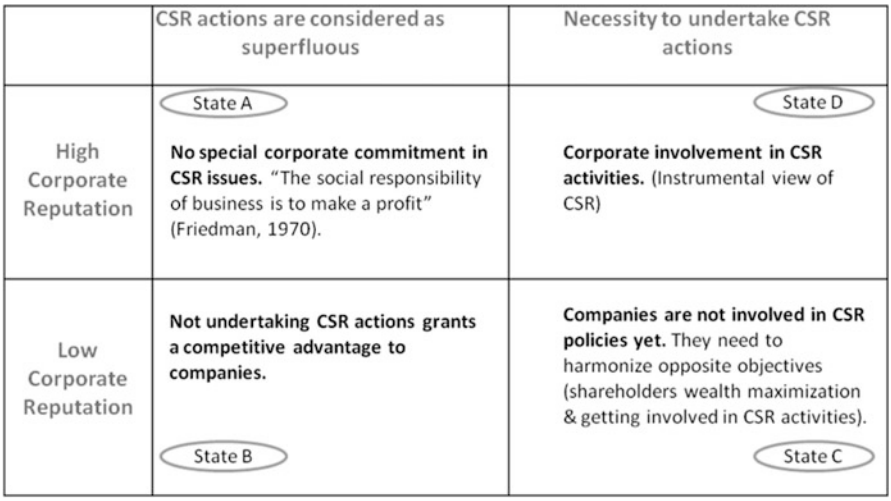

Fig. 11.2 Level of CSR as the result of two major dimensions: corporate reputation and social necessity

one hand, risks of a crisis of reputation are much higher for visible corporations as activists target mainly large and well-known corporations to maximize the impact of their campaigns (Tkac 2006). On the other hand, it is less justifiable for less visible corporations to implement CSR actions and their stakeholders are generally more preoccupied by their profitability than by their CSP. Hence, companies do not manage their reputation in the same way whether they are highly visible or not.

To recap, the point here is that companies acting in a socially responsible way or not could be considered as resulting from two dimensions: the estimated necessity by society to undertake certain CSR actions and corporate reputation. On the basis of those two dimensions—corporate reputation and social necessity—four states are identified (see Fig. 11.2).

As underlined by Epstein (2007: 213), "companies are multifaceted entities. (. . .) No company is 100% good and very few 100% bad. (. . .) Firms may be exemplary in their environmental practices and abominable in their employee policies." Hence, this figure represents why a company is going to undertake or not a particular aspect of CSR. Depending on the aspect of CSR considered, companies could be in different part of the figure at the same time period.

To explain this conceptual framework, I make the assumption that when it is socially necessary to undertake CSR actions, companies do at least communicate about their CSR actions and, in most cases, implement some changes concerning social or environmental issues (Davis et al. 2006: 8). For instance, since its initial public offering on the London Stock Exchange in May 2011, Glencore, a multinational mining and commodities trading company, has seen the social pressure to develop social and environmental policies increases. The Swiss Foundation for Sustainable Development, Ethos, even publicly announced in July 2011 that it has

excluded Glencore from its funds for an alleged breach of environmental and social standards and a lack of communication. Following, this intensified social pressure relayed by the media, Glencore published its first sustainability report in September 2011.

State A: High Corporate Reputation and CSR Actions Are Considered as Superfluous

Three major developments during the second half of the twentieth century interacted to change the relations among firms and society: first, the progressive liberalization of cross-border trade in goods and services; second, economic deregulation and privatization in the domestic economies of many countries; third, rapid advances in information and communications technology (Davis et al. 2006). These three changes lead to an increase in market competition and corporate pressures. Pressures from investors and customers require many companies to, above all, manage their costs and increase their profitability. If those companies do well, they would be often granted a good reputation. In fact, corporate reputation is firstly linked to the fact that companies sell products people need or want, they offer jobs, and they make profit. Hence, companies with a high corporate reputation can be in a situation where CSR actions are considered as superfluous by the societies in which they are embedded—i.e. essentially investors' and customers' communities.

This situation corresponds to the model pictured by the free market economist Milton Friedman (1970). According to his view, "the social responsibility of business is to make a profit". Hence, "there is one and only one social responsibility of business—to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud."

In fact, there is little evidence that customers are willing to increase their purchases from firms with more responsible labor practices or pay more for their products, especially if comparable goods are readily available (Vogel 2005: 94). Similarly, investors are not willing to sacrifice their financial requirements for being socially responsible (Lewis and Cullis 1990; Mackenzie and Lewis 1999). Hence, companies do not have any interest in becoming (more) socially responsible in the absence of social pressures to do so.

Today, many companies are in this situation. Companies that are not highly visible and those that only sell intermediate goods or generic goods are generally part of this category. Those companies have a reduced sphere of stakeholders, and they need to satisfy investors, customers and employees' requirements before taking into account general public welfare or any environmental considerations. They earn their reputation essentially by respecting their business commitments and remaining competitive. They are not required to commit themselves to CSR activities, and if they were doing so, it would probably be considered as a waste of money.

State B: Low Corporate Reputation and CSR Actions Are Considered as Superfluous

Companies in this state are subject to a certain number of public controversies but getting involved in CSR actions is not strategic for them. Three major reasons can explain why CSR actions are considered as superfluous in spite of low corporate reputation.

Firstly implementing corporate policies cannot always improve corporate reputation. For instance, however many commitments companies in contested industries like petrochemicals, tobacco or weapons manufacturing take, it will not be sufficient to shed the negative image that taints these industries by definition (Ashforth and Gibbs 1990; Heugens 2002). More broadly, on the basis of two naturalistic studies, Heugens and Dentchev (2007) found that "rather than safeguarding their license to operate, companies may actually risk their societal mandate by engaging in CSR activities, especially if one of several key stakeholders regard these as insincere". As a matter of fact, in some cases, the general public does not considered corporate socially responsible actions as necessary at all. Hence, if companies decide to enhance their social or environmental policies, they expose themselves to many critics. That is what happened to BP when it increased its investments in solar electric equipment manufacturing while launching a $200 million public relations campaign. As reported by Vogel (2005: 126), an article in the New York Times Magazine (2002) asked, "How can an oil company be 'Beyond Petroleum' without actively distancing itself from its core product, and how can a company that digs big holes in the ground possibly advertise itself as a sensitive steward of the environment?". In this case, companies, even if they do better than their competitors, will not benefit from their initiatives, as they do not have any significant impact on their reputation.

The second reason why CSR actions are considered as superfluous by a society while corporate reputation is low is linked with which societies are considered. As CSR standards are essentially defined by societies from developed countries, companies could have a low reputation according to developed countries' standards, while CSR actions are considered as superfluous by some of the societies in which they operate. In fact, societies from countries with less strict regulations can feel CSR as a threat that implies for them a loss of a competitive advantage. For instance, in the mid-1990s, there was a suspicion in many developing and fast-growing countries that the anti-sweatshop movement was a thinly disguised form of advanced-country protectionism (Davis et al. 2006: 29).

The third reason why CSR actions are considered as superfluous while corporate reputation is low is more ambiguous. It is about contradictory social demands. While the general public asked for corporations to be more concerned by social and environmental issues, consumers want competitive prices and shareholders do not want to sacrifice their financial returns. Hence, even if companies like Wal-Mart face a low corporate reputation (Hemphill 2005), a large part of the society still considered CSR actions superfluous as they first asked to Wal-Mart to remain competitive whatever the social cost implied. The general public do not consider

that CSR activities are essential as not being too demanding towards companies enables them to benefit from more competitive prices, higher financial returns and higher employment rates.

In this state, companies should probably not undertake CSR actions as they could be considered as suspicious (Heugens and Dentchev 2007) and erode corporate reputation even more.

State C: Low Corporate Reputation and Necessity to Undertake CSR Actions

First of all, the social necessity of undertaking CSR actions is linked to two concerns. First, CSR actions are expected by a society if it feels particularly concerned about some corporate attitudes. In this perspective, it could be considered that it is necessary for corporations to enhance social and environmental welfare even beyond the corporation's legal boundaries: a company might be held responsible not only for its own behavior, but also for the behavior of its suppliers or for breaches of the state in which it produces as well. Second, public controversies need to be sufficiently large to be taken into account by companies. If only a minor part of a society has CSR claims, this does not affect corporate reputation. As reported by Vogel (2005), many protests and boycotts do not generally affect sales and in the end have negligible financial impact.

Companies whose reputation is diminished are much more vulnerable to corporate controversies. Among other matters, corporate reputation can be undermined when companies are more visible and thus subject to more careful public and media attention. For instance, companies making the headlines due to irresponsible actions may sometimes see their reputation spoiled, and getting involved in CSR actions would be one way (among others, such as investing in a well-designed public relations campaign) to get out of the crisis of reputation they have gone through.

For companies, this state is problematic as it is the result of two conflicting views. On one hand, the common view that companies' goal is to maximize shareholders' wealth leads to a conception of corporate responsibility very near the Machiavellianism view "the ends justify the means". On the other hand, stakeholder theories (which keep enlarging and getting more influential) consider that companies have a very high level of responsibility towards a large number of actors (hard to define with accuracy). Companies in this state are vulnerable because they are going through a crisis of reputation and hence are subject to many controversies concerning their activities; meanwhile their stakeholders and more largely society consider these companies have to get involved in CSR policies. One interesting thing that happens here is that in most cases companies do not choose between these two views. They keep following the primary view that is able to integrate critics (Boltanski and Chiapello 1998), that is to say pursuing its main goal of maximizing shareholders' wealth while integrating the others subsidiarily. That is probably the

main explanation why so many companies choose to get involved in CSR activities (going from state C to D (see Fig. 11.2)) but keep CSR at the margin of their business. Being involved in CSR only to a very limited extent enables them to remain within the same paradigm of profit maximization. These considerations result in an instrumental view of CSR. Hence, the CSR actions that are primarily undertaken are those that cost the least, such as requiring the minimum age of workers to be 18 years. One of the other non-costly solutions is to outsource production and put the pressure of CSR standards on suppliers (Vogel 2005).

As noted by Heugens and Dentchev (2007), when corporations adopt new activities in general, they face organizational and relational risks that need to be strategically managed. In particular, investments in CSR activities do not always benefit to corporations if not strategically implemented. If this is the case, even if corporations begin to change their behavior by taking into consideration an obvious social necessity to improve social and environmental welfare, it would not resolve their problem of low reputation.

State D: High Corporate Reputation and Necessity to Undertake CSR Actions

Having a high corporate reputation implies that companies should manage their activities to at least maintain it at the same level. Whereas for some companies this can mean lowering costs (state A), it can also involve being required to undertake CSR actions as they appear to be socially necessary. In the latter case, companies choose to get involved in CSR activities. Two main situations can be identified.

Firstly, getting involved in CSR actions is part of a corporate plan to restore a weakened reputation. They choose to comply with society's expectations because of a strategic need. Investments in CSR activities can directly concern companies. This is the case for instance when a company focuses on a specific "green" product yielding a positive discounted cash flow (Porter and van der Linder 1999). They can also have an indirect impact on companies as is the case when CSR activities concern companies' suppliers. An organization's efforts to upgrade the working conditions in its suppliers' plants can simultaneously improve its corporate reputation (Waddock 2002).

In the second situation identified, companies choose to enhance their social impacts because they have a good reputation and they do not want to take the risk of weakening it. In this case (in which companies go from state A to D), they anticipate the social demands and implement CSR policies by prevention. They often do so because they are visible and have quite a high risk of being blamed for not being engaged in CSR actions. In fact, "activists attack firms that are vulnerable to public pressure, not solely because they are less responsible. (...) To the extent shaming strategies are effective, targeted firms are at a competitive disadvantage. They have to spend more resources on monitoring and compliance

that their less visible competitors in order to avoid a consumer backlash. And they are forced to compete with the less costly products made by their less vulnerable competitors" (Vogel 2005: 93). Hence, companies need to evaluate carefully which social aspects are considered as more essential for the public. Thus, companies will invest in the more socially valued aspects of CSR while avoiding spreading themselves too thinly and thus remaining competitive.

In these two states, corporate involvement in CSR results from instrumental reasoning. Except in a few cases, companies do not enhance social or environmental welfare without considering the consequences in terms of profitability.

The argument that CSR level is contingent on corporate reputation and social necessity can be understood in a dynamic way too. It would explain how companies go from one state to another. More particularly, this would provide some answers to the question of how companies should get involved in CSR at the first place. The kinds of social or environmental actions that companies should undertake remain an essential problem both for companies and policy makers.

How Companies Could Enhance Social Welfare? A Corporate Politicalization Process

The most interesting corporate evolution is how companies should get involved in CSR in the first place. Nevertheless, it is worthwhile explaining other changes in order to understand how companies come to undertake CSR actions, or how one day they choose to withdraw from their commitments.

Depending on conditions, to move from one state to another, a company's willingness may be needed, but sometimes companies undergo changes involuntarily.

From state A to state B, companies commonly suffer this change because they become more visible. Higher visibility can be due to a number of reasons. For instance, the general public become interested in one sector, one company is linked with the current headlines, some companies are considered as a group by the general public and this group becomes visible. As they suffer from a breach of credibility, most companies would not remain for a long period of time in state B.

From state B to state C, CSR expectations from society increase, the regulatory requirements get stricter and media exposure intensifies. When companies reach state C, they do not have any other choice than either getting involved in CSR activities or regaining their reputation by any other means. CSR investments and well-designed public campaigns are powerful ways to regain reputation.

In state D, companies are under public pressure generally because they are visible. The empirical analyses of the corporate philanthropy suggest that corporate visibility significantly influences a firm's behavior (Brammer and Millington 2006; Campbell and Slack 2006). Hence, companies in this case begin to implement CSR policies. Once companies have the reputation of being socially responsible, it is hard for them to return to a situation in which they would not invest in CSR any

more, while keeping their corporate reputation (that is to say from state D to A). This could happen during a period of recession or more specifically during a period economically difficult for a sector of industry. When going from state C to state D, companies choose to regain their reputation by getting involved in CSR activities.

The fundamental question is about knowing how companies could undertake CSR actions in domains that are primarily those of public policy. The answer relies on what corporations are. Three theories of the corporation are commonly discerned (Millon 1990): the aggregate theory, which views the corporation as an aggregate of its members or shareholders; the artificial entity theory, which views the corporation as a creature of the State; and the real entity theory, which views the corporation as a separate entity controlled by its managers. Historically, the real view has been the dominant view of the corporation (Avi-Yonah 2005). And according to this view, the corporations are regarded as citizens just like individuals and should consider social and environmental welfare within their processes. They should even be praised for acting philanthropically (White 1999).

To implement necessary CSR policies without risking their corporate reputation, companies need to consider themselves as political actors (Sherer and Pallazzo 2007) and show their goodwill through an in-depth reflections process considering stakeholders' expectations and fixing multiple-step objectives.

As long as corporate actions have an impact on the societies they are living in, they should have an assumed political role. It can be considered that many companies already have a political role through lobbying. However, lobbying is a private process and not a public one. Corporate social activities need to be undertaken through a public debate with politics and with society. In a democratic perspective, political legitimacy could result from either the output of elections or the discursive quality of the decision-making process (Gutmann and Thompson 2004). In the latter case, corporations—by taking contradictory opinions about their activities into account—might be able to identify the key decisions that they should take on environmental and social issues. This dialog with stakeholders and policy makers should necessarily evolve over time (Monshipouri et al. 2003). In this perspective, Heugens and Dentchev (2007: 166) found that managers define Key Performance Indicators (KPI) to establish the sincerity of CSR efforts and those KPIs were typically established after substantial stakeholder consultation. This does not mean that decisions could only be taken following the approval of all the stakeholders involved. Apart from the consideration that it is logically impossible to satisfy every single stakeholder demand (Jensen 2002), managers should principally integrate stakeholders' concerns in their decision-making processes while maintaining the long-term competitiveness of the company.

Conclusion

It could be argued that some companies commit themselves to CSR activities without any necessity or before any necessity arises. This might be true, but these cases are in the minority. In the large majority of the examples observed, companies

need to go both through a crisis of reputation and feel a social necessity to undertake CSR actions to begin to commit themselves to CSR policies.

The reputation of one company might eventually be very simplistically approximated by its annual sales but CSR necessity—that is to say, unavoidable needs that must be met, in order to avert negative consequences that would be greater if anything else was done—might be much harder to evaluate. Appraisals of the social necessity to undertake CSR actions may for example be dependent on the character of corporate management. Kagan et al. (2003) found some evidence that managers' dispositions are one of most powerful factors in explaining that some firms go beyond compliance and others do not. Hence, in many borderline cases where it is not straightforward to decide in which 'states' companies are, management sensitivity will be the ultimate factor committing companies to CSR activities in the first place and then determining the extent of commitment over time.

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Chapter 12
Voluntary and Mandatory Skin in the Game: Understanding Outside Directors' Stock Holdings

Sanjai Bhagat and Heather Tookes

Introduction

In a recent paper, Bhagat et al. (2008) highlight the role of common stock held by corporate board members (director ownership) in the current corporate governance debate. They find significant positive relations between *total* director ownership and both firm performance and effective monitoring of managers. These findings lead to two interesting questions: (1) Should outside directors have *mandatory* financial stakes (via stock ownership) in the performance of the firms that they monitor and counsel? (2) What determines mandatory and voluntary director ownership levels?

In the aftermath of the scandals of 2001–2002 and increased regulations imposed by Sarbanes Oxley, many firms have turned to additional firm-level governance mechanisms designed to improve incentive alignment.[1] Some of these policies have included the introduction of director and executive equity ownership requirements. These requirements provide a useful setting for examining both the determinants of director ownership and the relationship between ownership levels and firm performance.

This paper begins with an examination of the determinants of mandatory ownership requirements, as well as actual equity holdings of outside directors in the 3 years immediately following Sarbanes-Oxley. We find that mandatory ownership requirements are more common in large firms and those with a greater frequency of

[1] These requirements can be a useful supplement to equity-based compensation schemes. Ofek and Yermack (2000) find that after an initial level of holdings is met, managers sell whenever they get stock. If directors' desired level of holdings differs from levels that are optimal from the viewpoint of shareholders of that company, they may have incentives to sell their shares. Ownership policies can help curb director stock sales and keep incentives aligned.

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antitakeover provisions. We also find that these policies impact actual holdings in 2005 but not during 2003. The results for 2005 may be due to a trend of increased enforcement, and perhaps greater board sensitivity to these requirements during the post-Sarbanes Oxley period.[2]

In the second part of the analysis, we document the relationship between actual director holdings and future performance. We find that director holdings predict year-ahead performance (measured as return on assets and, for robustness, Tobin's Q), for both the 2003 and 2005 cross-sectional samples. The challenge in interpreting this empirical result is analogous to Demsetz's (1983) critique of the managerial ownership and company performance literature. Demsetz notes that most of the corporate governance literature focuses on the manager-shareholder agency costs of diffuse share-ownership. He argues that since we observe many successful public companies with diffuse share-ownership, clearly there must be offsetting benefits, for example, better risk-sharing. He further argues that if observed ownership levels reflect equilibrium outcomes then observed correlations between managerial ownership levels and corporate performance are spurious.

We address the Demsetz critique in the third stage of the analysis where we use the hand-collected data on director ownership policies at all S&P500 firms for the years 2003 and 2005 to explicitly control for mandated ownership levels. Under the maintained hypothesis that ownership *requirements* reflect *optimal* ownership levels (from the perspective of firms) they provide a useful *identification tool* in the examination of ownership-performance relationships. This allows us to identify the impact of "out of equilibrium" holdings. We find that mandatory holdings are not related to future performance; this result is consistent with the above maintained hypothesis - that ownership requirements reflect optimal ownership levels. More importantly, we find that voluntary holdings are positively and significantly related to future performance.[3] This result provides evidence of a link between actual director holdings and performance.

The remainder of the paper is organized as follows. The next motivates why stock ownership by board members might matter. The subsequent section describes the sample and data construction. Thereafter, the next sections analyze the determinants of mandatory and voluntary equity ownership by outside directors, and examine links between holdings and performance. The final section concludes with a summary.

[2] Duchin et al. (2010). These authors also document that companies did not immediately respond to the requirements of Sarbanes-Oxley regarding board composition. Over a period of years companies became more compliant.

[3] Several recent papers document a positive relation between director stock ownership and future firm operating performance; for example, see Bhagat and Bolton (2008), Guest (2009), and Dey and Liu (2011). However, these papers do not distinguish between mandatory and voluntary director stock ownership.

Board Ownership

Berle and Means (1932), in their classic book *The Modern Corporation and Private Property*, describe the phenomenon of the domination of the large public corporation by professional management as the separation of ownership and control. The firm's nominal owners, the shareholders in such companies, exercised virtually no control over either day to day operations or long term policy. Instead, control was placed in the hands of professional managers who typically owned only a very small portion of the firm's shares. One consequence of this phenomenon identified by Berle and Means was the filling of board seats with individuals selected not from the shareholding ranks, but chosen instead because of some prior relationship with management. Boards were comprised either of the managers themselves (the inside directors) or associates of the managers, not otherwise employed by or affiliated with the enterprise (the outside or non-management directors). This new breed of outside director often had little or no shareholding interest in the enterprise and, as such, no longer represented their own personal financial stakes or those of the other shareholders in rendering board service. However, as the shareholders' legal fiduciaries, the outside directors were still expected to expend independent time and effort in their roles, and, consequently, it began to be recognized that they should be compensated directly for their activities.

The consequence of this shift in the composition of the board was to exacerbate the potential agency problem inherent in the corporate form. Without the direct economic incentive of substantial stock ownership, directors, given a natural loyalty to their appointing party and the substantial reputation enhancement and monetary compensation board service came to entail, had little incentive other than their legal fiduciary duties to engage in active managerial oversight. It may also be argued that the cash compensation received for board service may have actually acted as a disincentive for active management monitoring, given management control over the director appointment and retention process.

Since the identification of this phenomenon, both legal and finance theorists have struggled to formulate effective solutions. Numerous legal reforms have been proposed, often involving such acts as the creation of the professional "independent director," the development of strengthened board fiduciary duties, or the stimulation of effective institutional shareholder activism. Much of this seems to have proven ineffective, as the recent corporate scandals suggest. Yet the solution may be simple and obvious. Traditionally, directors, as large shareholders, had a powerful personal incentive to exercise effective oversight. It was the equity ownership that created an effective agency. Making directors substantial shareholders can recreate this powerful monitoring incentive. This is the theoretical underpinning behind the current movement toward equity-based compensation for corporate directors. Underpinning this theory, however, is the assumption that equity ownership by directors does, in fact, create more active monitoring. Bhagat et al. (2008) study the link between significant outside director stock ownership, effective monitoring and firm performance and find evidence consistent with a positive role for director stock ownership.

The primary responsibility of the corporate board of directors is to engage, monitor, and, when necessary, replace company management. The central criticism of many modern public company boards has been their failure to engage in the kind of active management oversight that results in more effective corporate performance. It has been suggested that substantial equity ownership by the outside directors creates a personal incentive to actively monitor. An integral part of the monitoring process is the replacement of the CEO when circumstances warrant. An active, non-management obligated board will presumably make the necessary change sooner rather than later, as a poorly performing management team creates more harm to the overall enterprise the longer it is in place. On the other hand, a management-dominated board, because of its loyalty to the company executives, will take much longer to replace a poor performing management team because of strong loyalty ties. Consequently, it may be argued that companies where the CEO is replaced promptly in times of poor performance may have more active and effective monitoring boards than those companies where ineffective CEO remain in office for longer periods of time. Bhagat and Bolton (2008) find that when directors own a greater dollar amount of stock, they are more likely to replace the CEO of a company performing poorly. Given these findings, it is natural to ask what factors lead to higher director holdings and, beyond the impact on CEO turnover, whether ownership has an impact on overall firm performance.

Data Description

Mandatory and Voluntary Ownership

We use *hand-collected* data on director ownership policies for the years 2003 and 2005.[4] This information is obtained from proxy statements for the years 2003–2006[5] for all firms in the S&P 500 as of December 31, 2005. Most of the proxy statements are dated within 3 months after calendar year end. The analysis assumes that the policy as of the proxy statement date reflects guidelines in place during the past year unless the proxy states otherwise (e.g., policy is new and introduced at a particular date, in which case the policy as of the year t−1 proxy is used). Policies are included when they are in place for more than half of the

[4] We collect information on both director and executive policies. In unreported analysis of performance, we use executive policies as a control for unobserved firm heterogeneity and the results remain qualitatively similar. We select 2003 since it was the first full-year after the enactment of Sarbanes-Oxley. At the time we initiated this research project – Fall of 2006 – the most recent year for which complete ownership and accounting data were available was 2005.

[5] The Proxy Statement year depends on the firm's fiscal year end. As most firms in the sample have December fiscal year ends, for year t, we consider the proxy statement dated year t + 1 (typically dated before the end of April). For firms with, January through June fiscal year ends, we consider the proxy statement dated year t.

calendar year prior to the date of the proxy statement. We exclude firms for which proxy statements are unavailable (typically due to merger and acquisition activity). There are 463 firms in the 2003 sample and 481 firms the 2005 sample.

The ownership guidelines are typically found in the "Corporate Governance" or "Board of Directors" subsections of the proxy statements. The search terms used to identify holdings policies are: "stock ownership", "ownership guidelines" and "ownership." Whenever guidelines were not found by the simple document search, the documents were reviewed by hand. One important caveat is that disclosure of ownership policies is not required; however, there is little reason for us to believe that firms have strong incentives to hide them from their investors. The fact that so many firms voluntarily disclose suggests that the information is believed to be valuable to shareholders. Moreover, unless the links among holdings, requirements and performance vary systematically with firms' decisions to report their policies, any omissions would not impact the estimated coefficients.

Policies mandating director ownership take several forms such as: retainer multiples (most common); dollar requirements; share requirements; multiples of shares or cash awarded as compensation; multiples of exercised options. Examples of these policies can be found in Appendix A. The examples are based on first ten firms (based on the S&P 500 list, sorted alphabetically) for which policies were identified in the 2005 sample period. There are some companies for which ownership is "encouraged" (but not required). Those firms are considered not to have a policy. In the cases in which policies vary by director tenure, we take the policy for a first year director to be the relevant policy.

All ownership requirements are transformed to a common measure: *Requirement*, equal to the dollar value of required holdings.[6] One might be concerned that ownership requirements are small relative to directors' wealth; however, recent findings reveal that directors respond to monetary incentives as small as $1,000.[7]

To our knowledge, these data on mandatory director holdings are unique. Core and Larcker (2002) also examine mandatory holdings policies, but there are two important differences between their data and ours. First, they collect data on target ownership levels for executives. Our focus is instead on required holdings by outside directors. Second, our sample is based on all the S&P 500 companies, whereas Core and Larcker examine firms that announced the introduction of policies and changes to their policies. This allows them to identify changes in ownership policies, but not levels of ownership implied by these policies.

Table 12.1 provides summary statistics of the data on actual equity ownership by directors. These data are from IRRC. All analysis is based on the median value of holdings by all outside directors in a given firm. It can be seen from Table 12.1 that directors own substantial equity stakes. In 2003, the average director holdings were $1,993,571. In 2005, holdings were $2,985,448. Recent evidence of holdings for directors in the mutual fund industry (Chen et al. 2008) also suggests substantial

[6] Share requirements are converted into dollars using the closing stock price at the end of year t.

[7] See Adams and Ferreira (2008).

Table 12.1 Summary statistics

	2003			2005		
	Mean	Median	Std. dev	Mean	Median	Std. dev
Director holdings and ownership requirements						
Median Director Holdings ($000)	1,993.5	959.5	3,631.5	2,985.4	1,172.3	10,883.0
Median Director Holdings/Cash Retainer	64.740	24.915	138.630	64.080	25.440	225.986
Director Ownership Requirements Dummy	0.352	0.000	0.478	0.622	1.000	0.485
Executive Ownership Requirements Dummy	0.419	0.000	0.494	0.624	1.000	0.485
Ownership Requirement (Multiple of Retainer)	2.302	0.000	4.575	4.142	3.000	5.905
Cash Retainer ($)	36,663	35,000	19,103	46,881	45,000	22,387
Performance and firm characteristics						
ROA_{t+1}	0.136	0.132	0.081	0.144	0.131	0.093
$Capex/Assets_{t+1}$	0.039	0.031	0.033	0.045	0.036	0.044
Sales (log $M)	8.724	8.709	1.209	8.947	8.929	1.183
Q	2.104	1.638	1.282	2.072	1.675	1.281
Standard Dev Returns	0.020	0.018	0.008	0.015	0.014	0.005
G-Index	9.837	10.000	2.504	9.644	10.000	2.489
CEO Pay Slice	0.438	0.405	0.157	0.413	0.393	0.145
No. Observations	463			481		

Note: This table provides summary statistics of ownership requirements for the sample of S&P500 firms during the years 2003 and 2005. Median Director Holdings are the median dollar value holdings of all of a given firm's outside directors during year t, as reported in ExecuComp. The Cash Retainer is the annual cash retainer, as reported in ExecuComp. Director (Executive) Ownership Requirements Dummy is an indicator variable equal to one if the firm reports a director (executive) ownership requirement in its proxy statement. Ownership Requirement is dollar ownership requirement, divided by the annual cash retainer. Firm performance and characteristics are: ROA, defined as earnings before interest, depreciation and taxes, divided by total assets; Capex/Assets, defined as capital expenditures divided by total assets; Sales, defined as the natural log of total revenue in millions of dollars; Q, defined as equity market capitalization plus book value of assets minus book value of common equity, divided by book value of assets; and Standard Dev Returns, the standard deviation of daily stock returns. Corporate governance measures are the G-Index (see Gompers et al. 2003) and CEO Pay Slice, defined as the ratio of CEO pay to the pay of the firm's top five executives

Table 12.2 Ownership requirements

	2003			2005		
	Number of firms	Mean req.	Median req.	Number of firms	Mean req.	Median req.
Multiple of Retainer Requirement	75	3.57	3	127	3.66	3
Multiple of Cash Retainer Requirement	14	4	5	50	4.08	5
Share Ownership Requirement (000 shares)	50	5.46	5	83	7.13	5
Dollar Value of Holdings Requirement ($000)	15	$130.5	$100	33	$199.5	$200
Multiple of Shares Received as Compensation	9	1.89	1	14	2.29	1
Multiple of Total Director Compensation	3	1	1	4	1	1
Other Policy	30			17		

Note: This table provides a summary of stock ownership requirements for the S&P500 firms that disclosed a policy during the years 2003 and 2005. Multiple of Retainer Requirement is defined as a policy requiring directors to hold a multiple of X times their annual retainer. Multiple of Cash Retainer Requirement is a policy requiring directors to hold a multiple X times their annual cash retainer. Share Requirement is given in thousands of shares and indicates a policy requiring directors to own a fixed number of shares. Dollar Value of Holdings Requirement indicates a policy requiring directors to hold a fixed dollar value of shares in the firm. Multiple of Shares Received as Compensation requires directors to hold a multiple of shares that they receive as compensation. Multiple of Total Director Compensation requires directors to hold a multiple of their total annual compensation. Other Policy relates to options holdings, caps on holding requirements and requirements that govern accumulated holdings (over multiple years). The sum of the "number of firms" column, indicating the number of firms with each type of policy, is greater than the total number of firms with ownership policies due to cases in which there exist multiple policies for a single firm

director ownership. The table also reveals that mandatory policies are common, with requirements in 35.2% of firms in 2003 and in 62.2% of firms in 2005. One advantage of examining two time periods is that we are able to observe the striking shift towards the adoption of mandatory ownership policies. In 2003, firms were required to hold an average of 2.3 times their annual retainers. In 2005, that multiple increased to 4.1.

An important concern is the possibility that firms adopt policies based on "one-size-fits-all" guidelines from corporate governance consulting firms. However, this does not appear to be the case, given the data in Table 12.1. The standard deviation of the ownership requirement is about twice the mean in 2003 and 1.25 times the mean in 2005. We do, however, observe a trend towards increased policy adoption and overall increases in required holdings during our sample period. Table 12.2 provides additional descriptive statistics on firms with ownership requirement policies and also reveals substantial variation in the types of policies adopted.

Firm Characteristics

Summary statistics on firm characteristics and performance measures are also presented in Table 12.1. Firm characteristics and performance variables (return on assets, sales, and Q) are from *COMPUSTAT*. Equity returns data are from *CRSP*. The *G-Index*, a summary of 24 [anti-] governance measures (from Gompers et al. 2003), is from IRRC.

Determinants of Voluntary and Mandatory Holdings

One important observation from Table 12.1 is that directors' actual stockholdings differ from required levels. Median director holdings are approximately 25 times the size of the annual retainer in both 2003 and 2005, while the median S&P 500 firm had no ownership requirements in 2003 and required four times the annual retainer in 2005.

In this section, we study the determinants of both voluntary and mandatory holdings by outside directors. Because little is known about them, we begin with an examination of firm-level policies requiring stockholdings. If these policies are set optimally from the perspective of the firm, then we would expect to observe policies in firms in which monitoring and incentive problems are more likely to be severe. For example, firms with otherwise poor corporate governance, or firms with volatile cash flows. We would expect no systematic relationship with these variables if policies were set randomly or if firms followed one-size-fits-all guidelines issued by consulting firms.

We perform LOGIT regressions in which the dependent variable is an indicator equal to 1 if the firm has a director ownership requirement in place during year t (2003 or 2005). Explanatory variables are: *Q, Industry Q, Sales, Standard Dev Returns, Return Volatility, Lagged Returns, CEO Pay Slice, and the G-Index.*[8] If there is information asymmetry between management and shareholders, firms with high growth opportunities might want directors to hold more shares in order to improve their monitoring and advising incentives. We use the market to book ratio (*Q)* as a proxy for growth opportunities. This follows Yermack (2004), who tests whether executive compensation is explained by information asymmetry, measured by a firm's growth opportunities. We include both *Standard Dev Returns* and *Return Volatility* (squared standard deviation) because Demsetz and Lehn (1985) hypothesize that optimal ownership will increase with noise, but risk aversion cause it to do so at a decreasing rate. They also hypothesize that optimal ownership will increase in firm size. *Sales* captures firm size and is an additional measure of

[8] Gompers et al. (2003) [hereinafter GIM]. *CEO Pay Slice*, and *G-Index* are corporate governance measures; however; see discussion below.

monitoring difficulty.[9,10] We include lagged equity returns to control for recent performance. We also include a dummy variable for the year 2005 to reflect the increased adoption of policies over time. Finally, all regressions include industry fixed effects.

During the past decade, there have been several attempts to measure the effectiveness of various corporate governance measures, and the overall effectiveness of a company's corporate governance structure; see Bhagat et al. (2008) for a literature review. Of the large number of potential measures, we focus on the *G-Index* because of its prevalence in the corporate governance literature. We interpret the *G-Index* as a measure of the frequency of antitakeover provisions in a company. We also include *CEO Pay Slice,* the pay of the CEO relative to the top five executives (*CEO Pay Slice)* as a proxy for poor corporate governance, following recent findings in Bebchuk et al. (2008) that this measure of the relative importance of the CEO is negatively associated with firm value. If director ownership requirements are put in place to improve poor governance, we would expect to observe more ownership requirements in firms with otherwise poor governance.[11,12]

Results of estimation are in Table 12.3. The most important determinants of having a policy in place are firm size, prior stock returns and the frequency of antitakeover provisions. Additionally, director ownership requirements are more likely to appear by the year 2005 compared to 2003. Note that in Table 12.3, we assume the slope coefficients for the explanatory variables are same for 2003 and 2005. In Appendix Table 12.B.3 we allow the slope coefficients for the explanatory variables to vary for 2003 and 2005. The results in Appendix Table 12.B.3 allow us to reject the hypothesis that the slope coefficients for the explanatory variables are statistically different for 2003 and 2005.

The analysis presented in Table 12.4 is similar to that in Table 12.3, except that we present TOBIT regressions in which the dependent variable is the level of required holdings (i.e., a continuous variable). All independent variables are identical to the Table 12.3 analysis. The results are broadly consistent with the LOGIT regressions. Larger firms (more difficult to monitor) require greater director holdings. More positive prior stock returns and a greater frequency of antitakeover

[9] Note that there are two potential forces at work: It may be more difficult to monitor a large firm because of its size and the amount of information that must be processed, therefore increasing the value of providing directors with equity incentives. On the other hand, empirically, large firms have been associated with variables related to low information asymmetry (analyst coverage, equity market spreads, etc.), which suggests that more information about these firms is produced. The precise role of size is an empirical question.

[10] For robustness, we also consider log of total assets as a proxy for firm size. Results are consistent with those reported here.

[11] Ownership guidelines are set by boards of directors. An important assumption underlying the discussion is that directors act in shareholder best interest. They set policies to give themselves the correct incentives to effectively monitor. Findings in Yermack (2004) that directors of Fortune 500 firms have significant equity and reputation incentives are consistent with this assumption.

[12] Khurshed et al. (2011) provide evidence consistent with the argument that board ownership is a substitute governance mechanism.

Table 12.3 Ownership requirement policies (LOGIT)

	LOGIT: Dep Var = Ownership requirement (0,1)	
	Coeff. est.	Pr > ChiSq
Q	−0.047	0.533
Sales	0.280***	0.000
Standard Deviation Returns	−37.667	0.479
Lag Returns	0.526*	0.094
Return Volatility	348.000	0.756
CEO Pay Slice	0.480	0.367
G-Index	0.130***	0.000
Year_2005	1.001***	<0.0001
No. Observations	901	
Wald test of global null	134.48***	<0.0001

Note: This table presents Logit regression estimates in which the dependent variable is an indicator equal to 1 if the firm has a director ownership requirement. Explanatory variables are: Q, defined as equity market capitalization, plus book value of assets, minus book value of common equity, divided by book value of assets; Sales, defined as the natural log of total revenue in millions of dollars; Standard Dev Returns, the standard deviation of daily stock returns; Lag Returns, equity returns during year t−1; Return Volatility, the squared standard deviation of daily stock returns; CEO Pay Slice, the ratio of CEO pay to the pay of the firm's top five executives; and G-Index (see Gompers et al. 2003). Year_2005 is a dummy variable equal to 1 for the 2005 data. Industry fixed effects based on the Fama-French 49 industries and an intercept are also included but are not reported

*Indicates statistical significance at the 10% level; **Indicates significance at the 5% level; ***Indicates significance at the 1% level

provisions are positively and significantly related to the required director holdings. Finally, ownership requirements are larger for 2005 compared to 2003.[13] We also include an Appendix Table 12.B, in which we allow slope coefficients to vary by year. Similar to the findings in the Appendix Table 12.B.3, we are able to reject the hypothesis that the slopes of the coefficients on the explanatory variables in the requirements regressions vary by year.

Taken together, the results in Tables 12.3 and 12.4 are consistent with ownership policies being set to establish better governance incentives. We observe greater requirements in firms that are more difficult to monitor and those with lower shareholder rights (in that there are more anti-takeover provisions).

Having documented the determinants of holdings policies, we now turn to determinants of actual holdings. The main goals in this part of the analysis are: (1) to investigate whether determinants of directors' actual ownership differs from the variables that explain mandatory ownership levels and (2) to test whether mandatory ownership levels explain actual holdings. If policies are binding, we would expect a significant role for ownership requirements in directors' decisions to hold stock. Tables 12.5 and 12.6 present results of TOBIT regressions in which the

[13] The results in Appendix Table 12.B allow us to reject the hypothesis that the slope coefficients for the explanatory variables are statistically different for 2003 and 2005.

Table 12.4 Ownership requirement policies (TOBIT)

	Dep Var = $Ownership requirement	
	Coeff. est.	Pr > ChiSq
Q	0.124	0.685
Sales	0.842***	0.008
Standard Deviation Returns	−100.733	0.651
Lag Returns	2.255*	0.068
Return Volatility	680.990	0.888
CEO Pay Slice	2.582	0.237
G-Index	0.430***	0.001
Year_2005	4.004***	<0.0001
No. Observations	859	
Log likelihood	−1627.83	

Note: This table presents Tobit regression estimates in which the dependent variable is the ratio of required equity holdings to annual cash retainer. Explanatory variables are: Q, defined as equity market capitalization, plus book value of assets, minus book value of common equity, divided by book value of assets; Sales, defined as the natural log of total revenue in millions of dollars; Standard Dev Returns, the standard deviation of daily stock returns; Lag Returns, equity returns during year t−1; Return Volatility, the squared standard deviation of daily stock returns; CEO Pay Slice, defined as the ratio of CEO pay to the pay of the firm's top five executives; and G-Index (see Gompers et al. 2003). Year_2005 is a dummy variable equal to 1 for the 2005 data. Industry fixed effects based on the Fama-French 49 and an intercept are also included in the regression but are not reported.
*Indicates statistical significance at the 10% level; **Indicates significance at the 5% level; ***Indicates significance at the 1% level

dependent variable is the actual holdings. The independent variables are identical to those in Tables 12.3 and 12.4, except that *Requirement* (required holdings) has been added as an explanatory variable. In Table 12.5 we include 2005 as a dummy variable (implying the slope coefficients are same for 2003 and 2005), whereas in Table 12.6, we allow the slope coefficients to be different for 2003 and 2005.

An important observation from Table 12.6 is that ownership requirements do explain holdings for the year 2005. This will allow cleaner identification of voluntary (versus mandatory) ownership in subsequent tests of the link between director ownership and firm performance. Somewhat puzzling is the finding in that requirements in 2003 do not explain holdings in 2003. The negative result for the year 2003 may be the result of low levels of enforcement (which increased during the years following the implementation of Sarbanes Oxley). We also find that for both sample years, directors choose to hold more equity in smaller firms and firms with high Q. Also, consistent with the Demsetz and Lehn (1985) hypothesis – optimal ownership increases with noise (return standard deviation), but risk aversion will make it increase at a decreasing rate (negative relation between ownership and return variance).

In the next section, we analyze the relationship between voluntary and mandatory ownership and firm performance.

Table 12.5 Actual director holdings and requirements (TOBIT)

	Dep Var = $Director holdings	
	Coeff. est.	Pr > ChiSq
Q	28.295***	<0.0001
Sales	−8.094**	0.038
Standard Deviation Returns (*10^{-2})	78.362***	0.004
Lag Returns	−2.736	0.863
Return Volatility (*10^{-4})	−15.589***	0.007
CEO Pay Slice	−19.947	0.459
G-Index	−1.860	0.267
Requirement	0.802	0.356
Year_2005	−3.916	0.687
No. Observations	804	
Log likelihood	−4873.59	

Note: This table presents Tobit regression estimates in which the dependent variable is Median Director Holdings, the natural log of the median dollar value of equity holdings by all outside directors. Explanatory variables are: Q, defined as equity market capitalization, plus book value of assets, minus book value of common equity, divided by book value of assets; Sales, the natural log of total revenue in millions of dollars; Standard Dev Returns, the standard deviation of daily stock returns; Lag Returns, equity returns during year t−1; Return Volatility, the squared standard deviation of daily stock returns; CEO Pay Slice, the ratio of CEO pay to the pay of the firm's top five executives; G-Index (see Gompers et al. 2003); and Requirement, the required equity holdings. Year_2005 is a dummy variable equal to 1 for the 2005 data. Industry fixed effects based on the Fama-French 49 industries and an intercept are also included in the regression but are not reported

*Indicates statistical significance at the 10% level; **Indicates significance at the 5% level; ***Indicates significance at the 1% level

Holdings and Performance

We begin with an analysis of the relationship between actual holdings and performance. Consistent with Core et al. (2006), we consider return on assets (ROA) as the performance measure. Stock returns based measures of performance, such as market-adjusted returns and Tobin's Q, are problematic because stock returns will have anticipated any potential effect of stock ownership on performance. Nonetheless, for robustness, we also report results with Tobin's Q as the performance measure. We estimate ordinary least squares (OLS) regressions in which the dependent variables are 1-year-ahead return on assets (ROA) and Tobin's Q. Explanatory variables are: actual director holdings (*Median Director Holdings*); *Sales*; *Leverage*; *Retainer*, the annual cash retainer; *CEO Pay Slice*; *G-Index; and R&D*. The main coefficient of interest is that on actual director holdings (*Median Director Holdings*). Results are in Tables 12.7 and 12.8.

Table 12.7 shows a positive and significant relationship between director holdings and year-ahead performance for both performance measures. Interestingly, we also find that the dollar value of the retainer has an independent positive role in future performance measured as ROA (but not when performance is measured as Tobin's

Table 12.6 Actual director holdings and requirements

	Dep Var = $Ownership	
	Coeff. est.	Pr > ChiSq
Q	29.289***	<0.0001
Sales	−15.765***	0.003
Standard Deviation Returns (*10^{-2})	101.046***	0.006
Lag Returns	−39.425	0.155
Return Volatility (*10^{-4})	−22.480***	0.002
CEO Pay Slice	−39.525	0.276
G-Index	−2.499	0.271
Requirement	−1.625	0.293
Q_2005	−3.286	0.599
Sales_2005	12.203*	0.084
Standard Deviation Returns_2005	−55.003	0.405
Lag Returns	55.007	0.106
Return Volatility_2005	14.835	0.373
CEO Pay Slice_2005	36.174	0.487
G-Index_2005	0.745	0.811
Requirement_2005	3.256*	0.077
Year_2005	−145.631	0.194
No. Observations	804	
Log likelihood	−4866.74	

Note: This table presents Tobit regression estimates in which the dependent variable is Median Director Holdings, the natural log of the median dollar value of equity holdings by all outside directors. Explanatory variables are: Q, defined as (equity market capitalization, plus book value of assets, minus book value of common equity), divided by book value of assets; Sales, defined as natural log of total revenue in millions of dollars; Standard Dev Returns, the standard deviation of daily stock returns; Lag Returns, equity returns during year t−1; Return Volatility, the squared standard deviation of daily stock returns; CEO Pay Slice, defined as the ratio of CEO pay to the pay of the firm's top five executives; G-Index (see Gompers et al. 2003); and Requirement, the required equity holdings. Year_2005 is a dummy variable equal to 1 for the 2005 data. Interaction variables are defined as the variable of interest, times Year_2005 and are denoted with _2005 (for example, Q_2005 = Q*Year_2005). Industry fixed effects based on the Fama-French 49 industries and an intercept are included in the regression but are not reported

*Indicates statistical significance at the 10 % level; **Indicates significance at the 5 % level; ***Indicates significance at the 1 % level

Q). This is consistent with recent findings that payments as small as $1,000 meeting fees provide incentives for directors; see Adams and Ferreira (2008). Consistent with the extant literature, for example, see Rajan and Zingales (1995), the results in Tables 12.7 and 12.8 also document a negative correlation between leverage and performance, and firm size (sales) and performance. The regression in Table 12.8 is similar to Table 12.6 in that we allow slopes to vary by year. With the exception of *CEO Pay Slice,* which becomes less important in the ROA regression for the year 2005, we do not find significant differences in the estimated slopes.

Although the Tables 12.7 and 12.8 results suggest a positive correlation between director holdings and performance, the Demsetz critique that observed correlations between managerial ownership levels and corporate performance are spurious if

Table 12.7 Firm performance, dollar value of holdings and cash compensation

	Dependent variable: ROA_{t+1}		Dependent variable: Q_{t+1}	
	Coeff	t-stat	Coeff	t-stat
\$ Median Director $Holdings_t$	0.005***	2.68	0.135***	5.04
$Sales_t$	−0.089*	−1.77	−3.561***	−4.83
$Leverage_t$	−0.062***	−3.05	−1.858***	−6.44
$Retainer_t$	0.012**	1.98	0.045	0.50
CEO Pay $Slice_t$	0.020	1.17	0.011	0.04
G-$Index_t$	0.000	0.44	−0.046***	−2.99
$R\&D_t$	−0.190***	−6.06	−0.821*	−1.77
Year_2005	0.010*	1.89	−0.102	−1.36
No. Observations	798		808	
Adj. R-square	0.386		0.386	

This table presents results of OLS regressions in which the dependent variables are firm performance measures. ROA is year-ahead return on assets, defined as earnings before interest, depreciation and taxes, divided by total assets. Q is defined as equity market capitalization, plus book value of assets, minus book value of common equity and divided by book value of assets. Explanatory variables are: Median Director Holdings, the natural log dollar value of director equity holdings; Sales, defined as natural log of total revenue in millions of dollars; Leverage, defined as the ratio of total debt to the book value of assets; Retainer, the annual cash retainer, as reported in ExecuComp; CEO Pay Slice, defined as the ratio of CEO pay to the pay of the firm's top five executives; G-Index (see Gompers et al. 2003); R&D, the reported research and development expenditures, divided by sales; and Industry ROA, defined as the median earnings before interest, depreciation and taxes, divided by total assets for all COMPUSTAT firms in the industry (two-digit SIC code), which is used as a control in the ROA regression only. Year_2005 is a dummy variable equal to 1 for the 2005 data. Industry fixed effects based on the Fama-French 49 industries and an intercept are also included in the regression but are not reported
*Indicates statistical significance at the 10% level; **Indicates significance at the 5% level; ***Indicates significance at the 1% level

ownership reflects equilibrium outcomes is applicable.[14] To address this critique, we use required holdings to identify optimal ownership levels. We can then test for the relationship between actual holdings and performance since we observe "out of equilibrium" holdings (actual holdings net of firm-level requirements).[15] Results of this analysis are in Tables 12.9 and 12.10. Even after controlling for firm-level policies, we find evidence consistent with a positive role for director stock-holdings on firm performance.[16] Similar to Tables 12.7 and 12.8 we do not find differences in slopes across 2003 and 2005 with the exception of the *CEO Pay Slice* variable, which becomes less important for ROA in 2005.

[14] See also Zhou (2001).

[15] One potential concern is that firms' ownership requirements reflect a "minimum" level, and that this differs from optimal levels. However, we find a large number of cases in which boards are given several years to acquire required positions (see the examples in the Appendix). It is unclear why boards would allow members several years to acquire "minimum holdings". It is more likely that time is allowed to accumulate the optimal position.

[16] In robustness analysis, we use the existence of an ownership policy for CEOs in order to control for potential unobservables that might cause a firm to adopt a director policy. Results are similar.

Table 12.8 Firm performance, dollar value of director holdings and cash compensation with year interactions

	Dependent variable: ROA_{t+1}		Dependent variable: Q_{t+1}	
	Coeff	t-stat	Coeff	t-stat
$ Median Director Holdings	0.005**	2.27	0.118***	3.43
$Sales_t$	−0.048	−0.73	−3.380***	−3.46
$Leverage_t$	−0.047*	−1.80	−2.129***	−5.59
$Retainer_t$	0.006	0.75	−0.007	−0.06
CEO Pay $Slice_t$	0.054**	2.28	0.321	0.92
G-$Index_t$	0.001	0.66	−0.061***	−2.88
$R\&D_t$	−0.188***	−5.58	−0.830*	−1.69
$Holdings_2005	−0.002	−0.51	0.049	0.93
Sales_2005	−0.093	−1.04	−0.302	−0.23
Leverage_2005	−0.038	−1.08	0.552	1.09
Retainer_2005	0.014	1.21	0.120	0.68
CEO Pay Slice_2005	−0.072**	−2.15	−0.609	−1.23
G-Index_2005	−0.001	−0.54	0.031	1.09
R&D_2005	0.025	0.33	−0.061	−0.06
Year_2005	−0.010	−0.07	−1.984	−1.02
No. Observations	798		808	
Adj. R-square	0.388		0.384	

Note: This table presents results of OLS regressions in which the dependent variables are firm performance measures. ROA is year-ahead return on assets, defined as earnings before interest, depreciation and taxes, divided by total assets. Q is defined as equity market capitalization, plus book value of assets, minus book value of common equity and divided by book value of assets. Explanatory variables are: Median Director Holdings, the natural log of the dollar value of director equity holdings; Sales, the natural log of total revenue in millions of dollars; Leverage, the ratio of total debt to the book value of assets; Retainer, the annual cash retainer, as reported in ExecuComp; CEO Pay Slice, the ratio of CEO pay to the pay of the firm's top five executives; G-Index (see Gompers et al. 2003); R&D, the reported research and development expenditures, divided by sales; and Industry ROA, defined as the median ROA for all COMPUSTAT firms in the two-digit SIC code, which is used as a control in the ROA regression only. Year_2005 is a dummy variable equal to 1 for the 2005 data. Interaction variables are defined as the variable of interest, times Year_2005 and are denoted with _2005 (for example, Q_2005 = Q*Year_2005). Industry fixed effects and an intercept are included but not reported

*, **, ***Indicate statistical significance at the 10, 5 and 1% levels, respectively

Based on the results in Tables 12.9 and 12.10, with all variables at their means, the coefficient of 0.005 on (log) dollar value of director holdings implies that that a one standard deviation increase in director holdings increases next period ROA by 0.0072. This is an increase of 5.3% of mean year-ahead ROA in 2003 and a 5.0% increase of mean year-ahead ROA in 2005. Consistent with ownership requirements as being set at their optimal levels, we do not observe a relationship between mandatory holdings and ex post performance.

Table 12.9 Dollar value of mandatory and voluntary director holdings, cash compensation and performance

	Dependent variable: ROA_{t+1}		Dependent variable: Q_{t+1}	
	Coeff	t-stat	Coeff	t-stat
\$ Median Director $Holdings_t$	0.005***	2.68	0.135***	5.04
$Requirement_t$	0.001	1.18	0.007	1.03
$Sales_t$	−0.094*	−1.88	−3.637***	−4.91
$Leverage_t$	−0.063***	−3.13	−1.877***	−6.49
$Retainer_t$	0.012*	1.88	0.038	0.41
CEO Pay $Slice_t$	0.020	1.13	0.005	0.02
G-$Index_t$	0.000	0.29	−0.048***	−3.10
$R\&D_{t+1}$	−0.192***	−6.12	−0.853*	−1.84
Year_2005	0.008	1.49	−0.124	−1.60
No. Observations	798		808	
Adj. R-square	0.387		0.386	

Note: This table presents results of OLS regressions in which the dependent variables are firm performance measures. ROA is year-ahead return on assets, defined as earnings before interest, depreciation and taxes, divided by total assets. Q is defined as equity market capitalization, plus book value of assets, minus book value of common equity and divided by book value of assets. Explanatory variables are: Median Director Holdings, the natural log dollar value of director equity holdings; Sales, defined as natural log of total revenue in millions of dollars; Leverage, defined as the ratio of total debt to the book value of assets; Retainer, the annual cash retainer, as reported in ExecuComp; CEO Pay Slice, defined as the ratio of CEO pay to the pay of the firm's top five executives; G-Index (see Gompers et al. 2003); R&D, the reported research and development expenditures, divided by sales; and Industry ROA, defined as the median earnings before interest, depreciation and taxes, divided by total assets for all COMPUSTAT firms in the industry (two-digit SIC code), which is used as a control in the ROA regression only. Year_2005 is a dummy variable equal to 1 for the 2005 data. Industry fixed effects based on the Fama-French 49 industries and an intercept are also included in the regressions but are not reported
*Indicates statistical significance at the 10% level; **Indicates significance at the 5% level; ***Indicates significance at the 1% level

Conclusions

Previous research relating firm performance to director ownership has not distinguished between mandatory and voluntary holdings. Although common, there has been little attention paid to the role of firm level policies regulating director equity ownership. This paper studies the determinants of mandatory and voluntary holdings of outside directors as well as the link between ownership of directors and firm performance. Because ownership policies are, presumably, set at their optimum levels, distinguishing between mandatory and voluntary holdings allows us to distinguish between equilibrium and out-of-equilibrium holdings.

The ownership requirements that we observe are significantly related to variables that indicate greater monitoring difficulty (such as firm size) as well as otherwise weak corporate governance. These requirements impact actual holdings by outside directors.

Table 12.10 Dollar value of mandatory and voluntary director holdings, Cash compensation and performance with year interactions

	Dependent variable: ROA_{t+1}		Dependent variable: Q_{t+1}	
	Coeff	t-stat	Coeff	t-stat
$ Median Director Holdings	0.005**	2.29	0.118***	3.44
Requirement	0.001	1.10	0.005	0.56
$Sales_t$	−0.055	−0.83	−3.438***	−3.51
$Leverage_t$	−0.047*	−1.79	−2.131***	−5.58
$Retainer_t$	0.005	0.64	−0.013	−0.11
CEO Pay $Slice_t$	0.054**	2.30	0.327	0.94
G-$Index_t$	0.001	0.51	−0.063***	−2.93
$R\&D_t$	−0.191***	−5.64	−0.854*	−1.73
$Holdings_2005	−0.002	−0.53	0.048	0.91
Requirement_2005	0.000	−0.13	0.003	0.20
Sales_2005	−0.093	−1.03	−0.348	−0.26
Leverage_2005	−0.042	−1.18	0.502	0.98
Retainer_2005	0.015	1.21	0.117	0.66
CEO Pay Slice_2005	−0.075**	−2.23	−0.639	−1.28
G-Index_2005	−0.001	−0.51	0.031	1.05
R&D_2005	0.022	0.28	−0.112	−0.11
Year_2005	−0.090	−	0.670	−
1.902	−0.97			
No. Observations	798		808	
Adj. R-squared	0.388		0.383	

Note: This table presents results of OLS regressions in which the dependent variables are firm performance measures. ROA is year-ahead return on assets, defined as earnings before interest, depreciation and taxes, divided by total assets. Q is equity market capitalization, plus book value of assets, minus book value of common equity and divided by book value of assets. Explanatory variables are: Median Director Holdings, the natural log of the dollar value of director equity holdings; requirement, the required equity holdings; Sales, defined as natural log of total revenue in millions of dollars; Leverage, defined as the ratio of total debt to the book value of assets; Retainer, the annual cash retainer, as reported in ExecuComp; CEO Pay Slice, the ratio of CEO pay to the pay of the firm's top five executives; G-Index (see Gompers et al. 2003); R&D, the reported research and development expenditures, divided by sales; and Industry ROA, the median ROA for all COMPUSTAT firms in the two-digit SIC code, which is used as a control in the ROA regression only. Year_2005 is a dummy variable equal to 1 for the 2005 data. Interaction variables are defined as the variable of interest, times Year_2005 and are denoted with _2005 (for example, Q_2005 = Q*Year_2005). Industry fixed effects and an intercept are also included but are not reported

*, **, *** Indicate statistical significance at the 10, 5 and 1% levels, respectively

We find that, even after controlling for required holdings, actual holdings impact future performance (return on assets, ROA). A one standard deviation increase in director holdings increases next period ROA by about approximately 5%.

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Appendix A: Examples of Ten S&P 500 firms with Director Ownership Guidelines (2005)

Company	Guideline	Time horizon	Notes
3 M	2× annual retainer	Within 3 years	
Abbott Labs	5,000 shares	Within 5 years	Includes restricted units
ADC Telecommunications	"Directors are encouraged to own stock of the Company to align more closely their interest with those of the shareholders in general"		Does not fall under ownership requirement definition used in this paper because ownership is "encouraged" (not required).
Adobe Systems	5,000 shares	Within 2 years: Requirement is "25% of net shares acquired from Adobe for 2 years unless, following the sale of such shares, his/her total shares exceeds 5,000"	
AES Corp	10,000 units		Includes options, stock, or restricted units. Dollar value calculated is based on stock ownership.
Aetna	Value equal to $400,000	Met within 5 years of appointment	
Affiliated Computer	Class A stocks with value equal to min 3× annual retainer	Met within 3 years for all directors; new directors within 5 years.	
Agilent Techonolgies	Value of 3× annual cash retainer		
Alberto Culver	At least $100,000 in common stock		
Alcoa	At least 10,000 shares		

Appendix B

Table 12.B.3 Interactions ownership requirement policies (LOGIT)

	LOGIT: Dep Var = Ownership requirement (0,1)	
	Coeff. est.	Pr > ChiSq
Q	−0.012	0.909
Sales	0.303***	0.006
Standard Deviation Returns	−69.433	0.326
Lag Returns	1.127**	0.047
Return Volatility	1139.100	0.397
CEO Pay Slice	−0.033	0.964
G-Index	0.141***	0.003
Q_2005	−0.034	0.785
Sales_2005	0.010	0.943
Standard Deviation Returns_2005	86.695	0.503
Lag Returns_2005	−1.022	0.136
Return Volatility_2005	−1727.100	0.596
CEO Pay Slice_2005	1.104	0.291
G-Index_2005	−0.005	0.941
Year_2005	0.704	0.758
No. Observations	901	
Wald Test of Global Null	136.335***	<0.0001

Note: This table presents Logit regression estimates in which the dependent variable is an indicator equal to 1 if the firm has a director ownership requirement. Explanatory variables are: Q, defined as equity market capitalization, plus book value of assets, minus book value of common equity, divided by book value of assets; Sales, defined as the natural log of total revenue in millions of dollars; Standard Dev Returns, the standard deviation of daily stock returns; Lag Returns, equity returns during year t−1; Return Volatility, the squared standard deviation of daily stock returns; CEO Pay Slice, the ratio of CEO pay to the pay of the firm's top five executives; and G-Index (see Gompers et al. 2003). Year_2005 is a dummy variable equal to 1 for the 2005 data. Interaction variables are defined as the variable of interest, times Year_2005 and are denoted with _2005 (for example, Q_2005 = Q*Year_2005). Industry fixed effects based on the Fama-French 49 industries and an intercept are also included in the regression but are not reported
*Indicates statistical significance at the 10% level; **Indicates significance at the 5% level; ***Indicates significance at the 1% level

Table 12.B.4 Interactions ownership requirement policies (TOBIT)

	Dep Var = $ Ownership requirement	
	Coeff. est.	Pr > ChiSq
Q	0.326	0.449
Sales	0.700	0.135
Standard Deviation Returns	−97.191	0.750
Lag Returns	3.970*	0.095
Return Volatility	1158.698	0.848
CEO Pay Slice	−0.138	0.966
G-Index	0.483**	0.017
Q_2005	−0.254	0.619
Sales_2005	0.335	0.565
Standard Deviation Returns_2005	77.857	0.881
Lag Returns_2005	−2.696	0.336
Return Volatility_2005	−1577.030	0.904
CEO Pay Slice_2005	4.890	0.246
G-Index_2005	−0.063	0.806
Year_2005	1.993	0.829
No. Observations	901	
Likelihood radio	−1626.04	

Note: This table presents Tobit regression estimates in which the dependent variable is the required equity holdings. Explanatory variables are: Q, defined as (equity market capitalization, plus book value of assets, minus book value of common equity), divided by book value of assets; Sales, defined as natural log of total revenue in millions of dollars; Standard Dev Returns, the standard deviation of daily stock returns; Lag Returns, equity returns during year t−1; Industry Lag Returns, median equity returns based on all firms in the industry (two-digit SIC code) during year t−1; Return Volatility, the squared standard deviation of daily stock returns; CEO Pay Slice, defined as the ratio of CEO pay to the pay of the firm's top five executives; and G-Index (see Gompers et al. 2003). Year_2005 is a dummy variable equal to 1 for the 2005 data. Interaction variables are defined as the variable of interest, times Year_2005 and are denoted with _2005 (for example, Q_2005 = Q*Year_2005). Industry fixed effects based on the Fama-French 49 industries and an intercept are also included in the regression but are not reported

*Indicates statistical significance at the 10% level; **Indicates significance at the 5% level; ***Indicates significance at the 1% level

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Chapter 13
The Causes and Financial Consequences of Corporate Frauds

Stefano Bonini and Diana Boraschi-Diaz

Introduction

Another wave of corporate scandals has hit the market in the last decade, reviving attention to the effect of these events on shareholder value, corporate governance and stock market reactions. Academic research has shown that companies suffer a considerable decline in both stock prices and debt ratings upon Chap. 11 filing announcements, financial report restatements or financial distress announcements (Lang and Stulz 1992; Brewer and Jackson 2002; Palmrose et al. 2004). Gande and Lewis (2009) documented comparable effects on securities prices after a different class of scandals, i.e. securities class action suits (SCAS). Bonini and Boraschi-Diaz (2010) investigate capital raising decisions of firms target to a SCAS. They show that fraudulent firms issue seven times more securities before the scandal. This translates into substantial losses for investors due to stock prices and bond ratings dropping around and immediately after the SCAS filing. However, corporate scandals have more widespread economic effects. The 2010 Report to the Nations on Occupational Fraud and Abuse by the Association of Certified Fraud Examiners (ACFE) found that U.S. organizations lose 5% of their annual revenues to frauds. Applying this percentage to the 2009 estimated Gross World Product (GWP) would result in a projected total fraud loss of more than $2.9 trillion (ACFE 2010 Global Fraud Study). The ACFE paper also finds that, frauds committed by owners/executives were more than three times as costly as frauds committed by managers and more than nine times as costly as employee frauds. Executive level frauds also took much longer to detect (ACFE 2010 Global Fraud Study).

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Given this evidence a growing body of research has investigated the determinants of frauds, the effects of frauds on investors and stakeholders wealth and tried to identify channels and tools to early detect frauds and therefore reduce the loss in social welfare. This chapter provides a comprehensive view on the state of the current research on these issues and provides suggestions for future research. The remainder of the paper is structured as follows. The next section defines the general concept of fraud and we discuss the main theories developed in the criminology, psychology, legal and financial and accounting literature to interpret fraud and fraudulent behavior. In the subsequent section we present the empirical evidence on the financial consequences of corporate scandals. Thereafter we provide an overview of the possible fraud deterrence mechanisms. In the final section we conclude suggesting possible avenues for future research.

Fraud Definition and Theories

Fraud is a human endeavor that involves rationalization, motivation, purposeful intent, intensity of desire, self-deception, and risk of apprehension (Ramamoorti and Olsen 2007). It is widely recognized that the risk of fraud is a product of the mix between human personality and the environment. Individuals vary in their propensity to commit fraud and situations vary in their impact on individuals according to the inherent risk factors at any given time (Duffield and Grabosky 2001).

No precise legal definition of fraud exists; many of the offences referred to as fraud are covered by the Theft Acts of 1968 and 1978. Generally, the term is used to describe such acts as deception, bribery, forgery, extortion, corruption, theft, conspiracy, embezzlement, misappropriation, false representation, concealment of material facts and collusion. The Association of Certified Fraud Examiners defines Occupational Fraud as the use of one's occupation for personal enrichment through the deliberate misuse or misapplication of the employing organization's resources or assets (ACFE 2010 Global Fraud Study).

From the point of view of the criminal law, fraud could be defined as criminal deception, being the use of false representations to obtain unfair advantage or to harm the interests of another. Under common law, three elements are required to prove fraud: (a) a material false statement made with an intent to deceive; (b) a victim's reliance on the statement; and (c) damages.

While there is no single accepted definition of fraud, all definitions share a common trait: the existence of deliberate dishonesty or deceit. From an economics perspective, fraud can be a perfectly rational behavior provided the negative incentives of engaging in such behavior do not exceed the expected benefits (Becker 1968). This crucial trade-off is however puzzling as it is generally reckoned that corporate fraud carries substantial personal and financial risks and therefore should be a suboptimal decision by managers. However, this approach leads to an estimate of the likelihood of observing frauds that is at odds with empirical evidence. Several conceptual frameworks have been developed to investigate why managers engage in corporate fraud.

Criminology and Corporate Fraud

Criminology studies the causes, typology, meaning in terms of law, rates, and the community reaction to crime. It has developed into a field of study that relies on the coordinated work of sociologists, psychologists, psychiatrists, lawyers, and philosophers. From a criminology perspective, white collar crime, like other crime, can best be explained by three factors: a supply of motivated offenders, the availability of suitable targets, and the absence of capable guardians (Cohen and Felson 1979).

Some theories in criminology believe that criminality is a function of individual socialization. The base their analysis on how individuals have been influenced by their relationships with family, peer groups, teachers, authority figures, and other agents of socialization. These are called learning theories, and specifically social learning theories. One of the first learning theories in the criminology literature was the Differential Association Theory. It proposes that individuals learn the values, attitudes, techniques, and motives for criminal behavior through interaction with others (Sutherland 1947). Sutherland's theory consists of nine statements that specify some elements of the interpersonal process through which individuals learn to engage in fraudulent or law-violating behavior. The differential association theory states that a person engages in criminal behavior "because of an excess of definitions favorable to violation of law over definitions unfavorable to violation of law" (Sutherland and Cressey 1974). Sutherland asserts that "when persons become criminal, they do so because of contacts with criminal patterns and also because of isolation from anticriminal patterns" (1974). It is not the absolute amount of exposure to criminal patterns that is important of the theory to be true, but the differential ratio of associations with criminal and noncriminal patterns is what provides the theoretical key to the explanation of fraud. Briefly said, the Theory of Differential Association explains crime as a product of social learning through interaction in primary groups, such as friends or family. Even though the theory shed some insight on how society affects criminal acts, there were some reservations about it. One of the most important points left out by the theory was the existence of criminal opportunities and the part played by variations in individual personality in the differential association process. His sociological explanation of crime focused attention on variations in the social environment in the form of interpersonal contacts with criminal or anticriminal patterns. Sutherland's theory did not take into account personality traits that might affect a person's susceptibility to its environmental influences and thus its engagement in fraud or crime.

In the late 1960s, new social learning theories were developed which dropped Sutherland's theory that learning of criminal behavior takes place in primary groups. The Differential Reinforcement Theory (Burgess and Akers 1968), incorporated the psychological principle of operant conditioning, and proposes that even "nonsocial" situations could reinforce the learning of criminal behavior. According to the Differential Reinforcement Theory (Akers 1985) people are first indoctrinated into deviant behavior by differential association with deviant peers. Then, through differential reinforcement, they learn how to obtain rewards and avoid punishment

by reference to the actual or anticipated consequences of given behaviors. These consequences are the social and nonsocial reinforcements that provide a support system for those with criminal careers or persistent criminality.

An alternative to the social learning theories is the Social Control Theory. Briefly said, social control theories attribute fraud to the weakness, breakdown, or absence of the social bonds that encourage law-abiding conduct. Social control theories focus on relationships, commitments, values, norms and beliefs that are alleged to explain why people do not break laws. From such a perspective, there is nothing mysterious about fraud when it has no social or political costs. The social control theory is attributed to Hirschi's original work, *Causes of Delinquency* (1969). Under his social control framework, moral constructs and designations are created with the purpose of social order, assigning costs and consequences to certain human choices. Hirschi's social control theory has been criticized because it does not define social control; the theory only presumes that social relationships that discourage delinquency are social controls. In 1990, Gottfredson and Hirschi published *"A General Theory of Crime"* which in turn emphasized the concept of self-control. This "self-control" theory maintains the logic of the previous social control theory in the sense that no special motivation is necessary to explain fraud. Most of the features of social control theory that made it appealing to sociologists were abandoned in Gottfredson and Hirschi (1990). In their new work, variation in criminality is explained by one inclusive, psychological construct, self-control. Absence of self-control explains continuity in crime among individuals. According to Gottfredson and Hirschi (1990) "people who lack self-control will tend to be impulsive, insensitive, physical, risk-seeking, short-sighted, and nonverbal". Until these days the self-control theory has not been shown to have superior explanatory power over Hirschi's earlier social bond theory. Regardless of the outcome of new debates and new research, social control theory has to be recognized as one of the dominant theoretical perspectives in criminology in the twentieth century.

Another important theory developed in the criminology literature is the "Fraud Triangle". This theory consists in the linkage between opportunity, pressure, and rationalization constructs, and is a useful conceptual framework to understand the main causes of fraud and its behavioral underpinnings. Cressey's (1953) fraud triangle theory is largely based on a series of interviews conducted with people who had been convicted of fraud. He concludes that frauds generally share three common traits. First, the fraudster has the opportunity to engage in fraudulent activities. Second, the individual perceived a non-shareable financial need (commonly called the "pressure" variable). And third, the individual engaged in fraud rationalize the fraudulent act as being consistent with their personal code of ethics (commonly called the "rationalization" variable). Cressey contends that, to some extent, all three factors are present in any given fraud.

In summary, Cressey (1953) explains that "trusted persons become trust violators when they conceive of themselves as having a financial problem which is non-shareable, are aware this problem can be secretly resolved by violation of the position of financial trust". Furthermore, fraudsters must be able to internally justify their

actions as a psychological coping mechanism to deal with the cognitive dissonance of the fraud itself. The abuse of trust is a key concept of Cressey's characterization of white collar criminals as trust violators.

Psychology of Corporate Frauds

Psychologists seek to explain and predict individual and group behavior. Criminological psychology studies psychological problems associated with criminal behavior, criminal investigation, and the treatment of criminals. According to this literature stream, fraud can be explained through the link between motivation, the availability of suitable targets and the absence of capable guardians. Psychological factors thus influence the way a person interpret a situation and influence the action they choose to take. The risk of fraud is interpreted as a mix between personality traits and environmental or contingent variables. Behavioral scientists have failed thus far to identify a well defined and understood psychological set of characteristic that are common about fraud perpetrators. In this light psychological factors might be viewed as a marker for fraud but not a comprehensive explanation for it (Duffield and Grabosky 2001).

Another psychological aspect of fraud is the process of rationalization by which the fraudster reduces his/hers inhibition. The different implementation of such a process are named "neutralization techniques". In 1957 Sykes and Matza introduced Neutralization Theory as a response to Sutherland's Differential Association Theory. Sykes and Matza state that fraudsters are aware of conventional values because they are embedded in a large and conventional environment. Thus, even though fraudsters break the law, they internalize and adhere to many of the social norms associated with the conventional world. In order to cope with the cognitive dissonance of adhering to social norms and committing fraud, criminals use techniques of neutralization designed to remove guilt prior to committing illegal or fraudulent acts. Five techniques were initially outlined: (a) denial of responsibility; (b) denial of injury; (c) denial of the victim; (d) condemnation of the condemners; and (e) appeal to higher loyalties. Denial of responsibility is a technique used when the deviant act was caused by an outside force. The individual feels that they are drawn into the situation, ultimately becoming helpless. Denial of injury occurs when the criminal act causes no harm to the victim. Denial of victim is used when the crime is viewed as a punishment or revenge towards a deserving person. The technique called the condemnation of the condemners (McCorkle and Korn 1954), places a negative image on those who are opposed to the criminal behavior. The appeal to higher loyalties technique is used when the person feels they must break the laws of the overall community to benefit their small group/family.

Another strand of studies in the psychology field is that concerning with ethical fading. The term "ethical fading" refers to the process by which the moral implications of an ethical decision fade, thus allowing the individual to act independent of its moral implications. Self deception, or avoidance of the truth is argued to be an instrument for ethical fading (Tenbrunsel and Messick 2004). Self deception

causes the moral implications of a decision to fade, allowing individuals to behave incomprehensibly and, at the same time, not realize that they are doing so. Tenbrunsel's research integrates psychology and behavioral economics into the field of business ethics. The self deception literature finds four elements that facilitate ethical fading: (a) language euphemisms (to mislead the absence of ethics); (b) the slippery slope of decision making (composed of a psychological numbing originated by repetition, and an induction mechanisms similar to routinization); (c) errors in perceptual causation (that shift blame from self to others and allows separation of the moral implications of an action); and (d) the constrained representation of our self (that prohibits the self to have and "objective truth" shared by others). In summary, self deception leads to coding, or framing of decisions that either eliminate negative ethical characterizations or distort them into positive ones (Tenbrunsel and Messick 2004).

Law and Corporate Frauds

Legal literature has recently been concerned with the probability of a firm of being sued under the Securities and Exchange Commission Rule 10b. Francis et al. (1994) examine whether firms that preemptively disclose adverse earnings news benefit from a lower incidence of shareholder initiated lawsuits; they conclude that early disclosures increase litigation risk. Jones and Weingram (1996) show that firms with good stock price performance in the recent past are less likely to be sued by shareholders. Field et al. (2005) argue that lawsuits are less likely to be filed against retail firms because they tend to release monthly sales figures, meaning that the market has better information about their current operating environment and is thus less likely to be surprised with bad news. Dyck et al. (2007) study all reported fraud cases in large U.S. companies between 1996 and 2004 and find that fraud detection does not rely on obvious actors (investors, SEC, and auditors), but involves a mix of several non-traditional players (employees, media, and industry regulators). Law policymakers have also studied the topic of detection and deterrence of fraud. In a pathbreaking 2008 paper, Miriam Baer proposed what she called the "linkage problem" to understand the ongoing basis of corporate fraud and how it should affect government responses to fraud. She argues that a key reason for the failure of corporate fraud deterrence is that fraudsters rationally perceive a link between the cessation of the criminal activity and the detection of their conduct (Baer 2008). This phenomenon is referred as linkage, and is conceptualized as the positive relationship between the cessation of future criminal activity and the likelihood of detection of prior similar conduct. Thus, fraudsters believe that ending their fraudulent practices will increase the probability of being caught. Under this framework, termination of fraud is not easy because the probability of detection often depends on the fraudster's ability to continue misleading the target. Thus, corporate fraud is not an isolated occurrence but more the stratification of a continuum of violations, that requires uninterrupted commitment and sometimes physical presence. The degree of linkage in a given context will have an important bearing on the effectiveness of each strategy of fraud deterrence used (Baer 2008).

Managerial Incentives and Corporate Frauds

Research on the economics of crime has been pioneered by Becker (1968). In this path-breaking work Becker developed the idea that the decision to commit a crime could be looked at in the same way as other kinds of decisions, namely by comparing an action's costs and payoffs. A prospective criminal weighs the subjective costs and benefits from offending and goes ahead if the net benefits are positive. The benefits are the pay-off from the offence whilst the costs are primarily the product of the probability of being caught and the scale of the sanction to be expected in the event of being caught (Cooter and Ulen 2007). This gives rise to a deterrence-based approach in which a sufficiently well-tailored set of sanctions could be implemented to pre-empt virtually all offences. Since managers do obtain a well-defined set of benefits from driving a company, there is undoubtedly an incentive to commit frauds if those actions carry a small probability of being caught, i.e. the costs of crime do not outweigh the benefits. Recent corporate governance and managerial compensation literature has investigated closely whether the structure of managers compensation packages and the monitoring provision do affect the likelihood of observing frauds. Johnson et al. (2009) find that executives who commit corporate fraud face greater financial incentives to do so and that the incentives change conditional on the structure of the compensation package. In particular they find that the likelihood of corporate fraud is positively related to incentives coming from unrestricted stockholdings but is unrelated to incentives from restricted stock and unvested and vested options. This finding suggest that the structure of incentives matters and in fact unrestricted stockholdings are the largest source of managerial incentives at fraud firms, whereas vested options are the largest source at control firms. Interestingly, they find that frauds begin following declines in operating performance and since stock prices fall significantly upon disclosure of potential fraud, frauds are attempts to avoid stock price declines. This result is strongly aligned with the evidence in Bonini and Boraschi-Diaz (2010) on the equity issuance behavior of fraudulent companies. Their findings are also consistent with intuition in Bergstrasser and Philippon (2006) and Gao and Shrieves (2002) who study the broader relationship between earnings management and incentives management. Finally, Johnson et al. (2009) results confirm the theoretical predictions by Immordino and Pagano (2009) who show that shareholders should design internal corporate governance so as to curb managerial fraud, along two dimensions: the quality of auditing, and the design of managerial compensation.

Financial Effects of Corporate Frauds

Financial and Financial Accounting literature have mainly addressed the phenomenon of corporate scandals by studying cases of bankruptcy announcements, public announcements of fraud in the press and earnings management.

The term earnings management covers a wide variety of legitimate and illegitimate actions by management that affect an entity's earnings. According to Healy and Wahlen (1999) earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers. The term earnings management generally implies that the activities undertaken by managers are designed either to smooth earnings or to achieve a predetermined earnings level.

Earnings management can be seen in two different ways. First it can be seen as the aggressive, but acceptable, ways in which managers can exercise their accounting discretion (Healy and Wahlen 1999); and then as the actions that constitute fraud. Earnings management has been linked to fraud lawsuits by DuCharme et al. (2001, 2004). In their 2001 paper they study the relationship between earnings management, abnormal accruals, stock offerings, post-offering stock returns and shareholder lawsuits. They use a large sample of offerings made during the period from 1988 through 1997. They find that earnings reported around stock offers on average contain positive abnormal accrual components. Additionally, accruals are negatively related to post-offering stock returns, and tend to reverse during the post-offer period. In a multivariate logistic regression setting the authors find that the incidence of fraud lawsuits is positively related to abnormal accruals and negatively related to post-offer stock returns. These results support the view that some firms opportunistically manipulate earnings upward before stock issues, a fraudulent activity that can lead them to litigation (DuCharme, et al. 2001). In their 2004 study, DuCharme, Malatesta and Sefcik show that the incidence of lawsuits and lawsuit settlements for fraud in seasoned equity offerings is related to the level of pre-offering abnormal accruals. Fraudulent firms exhibit strong evidence of opportunistic earnings management. The authors conclude that offering price manipulation by earnings management can also be considered to constitute fraud.

Corporate governance literature investigates whether governance mechanisms can affect corporate efficiency and stakeholders wealth. Fraud prevention is thus possibly obtained by the introduction and enforcement of appropriate internal and external governance rules. Agrawal and Chadha (2005) hypothesize that sound corporate governance mechanisms decrease the probability of a firm restating its earnings. In an extension of their original work, Agrawal and Cooper (2007) support this conjecture highlighting that soon before and immediately after an accounting scandal, the firm experiences a higher turnover of CEOs and CFOs. Ferris et al. (2007) find that derivative suits, brought on behalf of all shareholders, are also associated with increased turnover. Beasley (1996) and Dechow et al. (1996) find that accounting fraud is less likely when there are more outside directors. By examining the connection between published reports of unethical behavior by publicly traded U.S. and multinational firms and the performance of their stock, Rao and Hamilton (1996) test that there exists a significant connection between ethics and profitability.

A parallel stream of literature focuses on market effects of corporate scandals. Palmrose et al. (2004) examine the market reaction of 403 restatements announced

from 1995 to 1999 and document an average abnormal return of about 9.00% over a 2-day announcement window. Lang and Stultz (1992) demonstrate that on average, bankruptcy announcements generate a percentage shareholder wealth loss of 21.66% in a [−5, +5] event day window. Stock market's reaction is also statistically significant to two events in the litigation process: the revelation of potential fraud, and the filing of a lawsuit (Ferris and Pritchard 2001). Beck and Baghat (1997) find that firms sued under SEC rule 10b-5, are more likely to experience episodes of very poor price performance compared to a population of non-sued firms. Karpoff et al. (2007) document that the stock market also imposes significant reputational penalties on firms targeted by SEC enforcement actions for financial misrepresentations.

Kedia and Philippon (2009) link the topic of earnings management to the dynamics of employment and investment. The authors model the effect of earnings management on the allocation of resources. They try to find a wider set of economic consequences due to fraudulent activities. They model earnings management in a signaling game that offers some testable predictions. They build a model of earnings manipulation in which the costs of earnings management are endogenous. They argue that when earnings manipulation are endogenous, in equilibrium, bad managers hire and invest too much, distorting the allocation of real resources. They then use data on SEC actions, from 1936 to 2003 to capture the incidence of fraudulent accounting to test the predictions of the model. The authors find support to the theoretical predictions, showing that periods of high stock market valuations are followed systematically by large increases in reported frauds. Regarding firm dynamics and insider trading, they find that during periods of suspicious accounting, insiders sell their stocks, while misreporting firms hire and invest just like the firms whose income they are trying to match. Fraudulent managers try to mimic good managers, but when they are caught their firms shrink quickly. Once the scandal is unveiled, fraudulent firms shed labor and capital and improve their true productivity.

Gande and Lewis (2009) focus on a different class of scandals, namely security class action suits (SCAS) and their effects on stock prices. SCAS offer the interesting feature of allowing to quantify exactly the value of frauds since they do not necessarily trigger liquidation. In fact, less than 7% of SCAs end up with a bankruptcy procedure. Gande and Lewis (2009) use a sample of 472 firms involved in a SCAS to examine price reactions on the lawsuit filing date. They consider the possibility that SCAS signal that comparable firms are susceptible to similar lawsuits, thus they study price reaction and contagion effect due to fraud engagement. Using standard event study methodology they find that during the 3-day announcement period surrounding the filing date, there is a significantly negative stock price reaction of −4.66%, which corresponds to an average loss of $355.65 million in shareholder wealth. In the 2-week period preceding the filing date, stock prices decline −9.79%, which represents an additional loss of $727.01 million. The large losses preceding the filing date are likely due to the disclosure of material adverse information that actually serves as the event that triggers the filing of a lawsuit. The market appears to process the incremental information in an efficient manner because cumulative abnormal returns are insignificantly different from zero in the 2-week period immediately following the lawsuit filing date.

Table 13.1 Filing date abnormal returns and changes in market value

	Abnormal returns (%)		Change in market value ($ mil)			
	Mean	t-Statistic	Mean	t-Statistic	% Neg.	Obs.
Panel A: SCAS firms						
[−10, −2]	−9.79	−16.99	−727.01	−5.65	62.64	605
[−1, +1]	−4.66	−13.99	−355.65	−2.42	56.69	605
[−10, +1]	−14.45	−21.71	−1,082.66	−5.36	63.47	605
[+2, +10]	0.31	0.54	12.09	0.16	47.85	604
Panel B: Peers						
[−10, −2]	−0.99	−3.21	−504.29	−1.18	55.9	590
[−1, +1]	−0.32	−2.07	−281.61	−1.16	54.08	590
[−10, +1]	−1.31	−3.69	−785.9	−1.6	58.98	590
[+2, +10]	−0.39	−1.63	−907.01	−1.73	51.18	590

Note: This table reports cumulative abnormal returns and changes in industry market value for SCAS companies (Panel A) and an industry/size/year matched group of peers. The sample period is 1996–2003. Day 0 refers to the lawsuit filing date

Furthermore the authors find that average industry dollar losses associated with industry spillover are economically significant. Over the 12-day event window [−10, +1] the average industry loss is $825.76 million. The following Table 13.1 presents the Filing Date Abnormal returns and Changes in Market Value of both the SCAS firm sample as that of their comparison group:

The authors' results, however, could be driven by an endogeneity issue, i.e. firms exhibit a structurally different likelihood of being sued conditional on a number of firm specific factors, on the previous history of litigations ("bad behavior" hypothesis) and the probability for plaintiffs of obtaining favorable, large payments of the claimed damages ("deep pocket" issue). Their results show robustly that the company past history of litigation is a strong predictor of future litigations, indicating that monitoring mechanisms exist in the market but are not uniformly applied to all companies. Secondly they show that there is a deep pocket issue. Large firms, with higher turnover seem to be marginally more likely to be sued. Finally firms-specific characteristics have conflicting effects on the propensity to be sued and do not provide conclusive evidence.

In a recent article Bonini and Boraschi-Diaz (2010) adopt the engagement in a security class action suit as a proxy of a corporate scandal. They use data from the Stanford Law School Securities Class Action Clearinghouse database to test several hypotheses regarding the capital structure and financing pattern of firms engaged in fraudulent behaviors. They conjecture that a common feature of fraudulent behavior is the biased, deferred or hindered revelation of information that, if revealed in a timely fashion, would have had meaningful effects on managerial actions: first, it would have determined a significant reduction in stock prices, making security offerings increasingly diluting and costly; secondly, it would have reduced (or canceled altogether) managerial independence in making capital structure-related decisions; thirdly, it would have heavily affected managers' payoffs, driving

Table 13.2 Mean security offerings by event year

t	Variable	Obs	Mean	Mean(diff)	Pr(|T| > |t|)[1]	Pr(T > t)[2]
−2	Security offerings SCAS	629	0.576			
−2	Security offerings PEERS	629	0.108	0.469	0.000 (***)	0.000 (***)
−1	Security offerings SCAS	638	0.390			
−1	Security offerings PEERS	638	0.111	0.279	0.000 (***)	0.000 (***)
0	Security offerings SCAS	553	0.184			
0	Security offerings PEERS	553	0.092	0.092	0.000 (***)	0.000 (***)
1	Security offerings SCAS	483	0.042			
1	Security offerings PEERS	483	0.072	−0.030	0.409	0.796
2	Security offerings SCAS	403	0.064			
2	Security offerings PEERS	403	0.069	−0.004	0.884	0.558
3	Security offerings SCAS	322	0.074			
3	Security offerings PEERS	322	0.067	0.007	0.928	0.464

Note: This table reports the total mean security offerings of firms engaged in a corporate scandal (proxied by the filing of a security class action suit), and that of a value-weighted portfolio of the remaining firms with the same four-digit sic code (by event year). The event year (t = 0) is defined as the year in which the security class action suit was filed against the firm. The amount of total –yearly- security offerings is measured as the sum of debt issuances and book equity issuances. Debt issuances are measured as the change in total assets minus change in book equity divided by total assets. Book equity issuances are measured as the change in book equity minus the change in balance sheet retained earnings, divided by total assets. The last two columns of the table present the results of the one and two-tailed mean-difference tests
*** denote significance at 1, 5 and 10% level respectively

stock options out-of-the money, not triggering bonus payments or determining managers' firing. Managers, arguably, are aware of these negative effects and therefore have strong incentives to illegally preserve the information asymmetry and exploit it to increase the amount of funds that they collect in anticipation of potential capital and managerial constraints. Funds are then used in connection with the hidden information, to maintain or increase investments and R&D spending, to pursue acquisitions, to rebalance (at a lower cost) the financial structure of the company or simply to enhance the liquidity stock in spirit similar to that in Ivashina and Scharfstein (2009). These managerial actions are likely to carry significant overinvestment costs for securityholders as shown by Jensen (1986). This argument is aligned with Kedia and Philippon (2009) conjecture that fraudulent managers try to disguise their actions by not altering their previous course of actions. Bonini and Boraschi-Diaz (2010) testing strategy compares the weighted average amount of security offerings by the sample of firms engaged in a SCAS with the average amount of offerings made by a value/year/size-weighted portfolio of peers. Results are reported in Table 13.2 offer support to their hypotheses. Ex-ante, firms engaged in a corporate scandal issued significantly more securities than their peers. However, this issuance pattern is abnormal and disappears after the SCAS filing.

Following the Market Timing Hypothesis of Capital Structure, they proceed by testing the pattern between fraud and the securities selected to raise funds. They document that since firms before the scandals experienced overvaluation in stock prices they were more likely to use equity as a financing means. Compared to their peers, and consistent with the Market Timing Hypothesis, firms involved in a

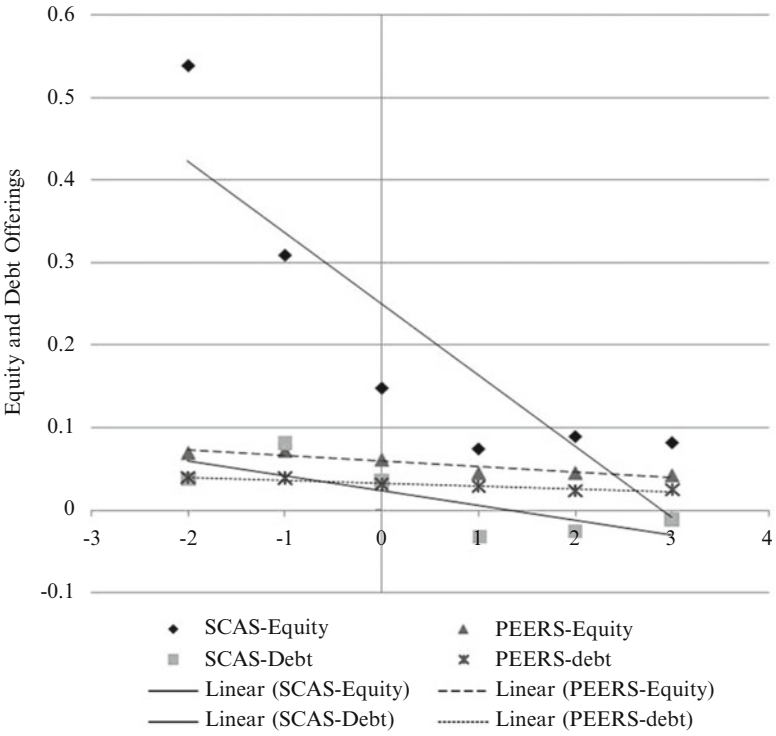

Fig. 13.1 Equity and Debt issuance trend analysis. This figure reports the results of the regression: $Y_{jt} = \alpha_j + \beta_j(T) + \varepsilon_{jt}$; where, Y_{jt} are either equity, debt or total security issuances, *T* is a trend variable that ranges from {1,6}, and εjt is the error term of the regression. Debt issuances are measured as the change in total assets minus change in book equity divided by total assets. Book equity issuances are measured as the change in book equity minus the change in balance sheet retained earnings, divided by total assets

security class action consistently issue more equity in the 2-year period preceding the filing of the suit. The results plotted in Fig. 13.1 confirm that ex-ante (before the filing), SCAS firms issued far more equity than their comparable weighted average portfolio of peers, and the difference is statistically significant for all years.

Two years before the event, firms engaged in a corporate scandal issued 7.7 times more equity than did their peer sample. One year before the event ($t = -1$) SCAS firms issued 4.26 times more than their peers; during the year when the security class action was filed, the abnormal equity issuance dropped to 2.39 times the peer sample rate. Debt issuance evidence provides additional support to their hypotheses. Before the scandals were unveiled, SCAS firms made a remarkably smaller use of debt as opposed to equity. Cross-sectionally, debt offerings were aligned with those of the industry peers, with the exception of 1 year before the filing. Furthermore, financing decisions after the SCAS filing changed sharply: equity issuances shrank, and debt issuances turned negative and significant for the first 2 years of the event window. At $t = 3$, debt issuance was still negative

but not significant. Furthermore, SCAS firms in our study exhibit decreasing book and market leverage before the filing due to abnormal volumes of equity offerings. Soon after the filing though, leverage increases sharply and significantly due to the readjustment in equity market value. Looking at the contagion effect on the financing pattern of the industry, we find that equity issuances decrease for both peers and SCAS firms over time, and this decrease is more pronounced for the latter. They observe that close to the suit filing date there is a decrease in debt and equity issuances for both samples. The existence of a significant negative equity and debt issuance trends can be interpreted as a contagion effect in the financing pattern, i.e. a SCAS filing generates a decrease in equity and debt offerings in the overall industry.

Looking at the effects of corporate scandals on the firm's competitors' stock prices, Bonini and Boraschi-Diaz (2010) provide evidence of the existence of a negative contagion effect on stock prices of the industry of the firm involved in a corporate scandal. For the [−1,0] and [−5,5] event windows they find that peers suffer a significant cumulative abnormal return of –0.20 and –0.65% respectively. These results confirm the fact that corporate scandals do have a negative impact on their industry. Breaking down the analysis of contagion effects by accounting and non-accounting related allegations they find that the negative stock price reaction of peers with accounting allegations is strongly significant for most event windows, while this is not the case for non-accounting allegations. Cases of non-accounting allegations do not show a statistically significant contagion effect in their industry. Our findings are aligned with Gande and Lewis (2009) who provided evidence on the price reaction to SCAS filings.

Bonini and Boraschi-Diaz (2010) argument is that managers in companies involved in a security class action that eventually detects a fraudulent behavior have an incentive to incur the risk of imperfect information disclosure because full information revelation would increase their financing costs, reduce managerial flexibility and, most importantly, reduce the amount of resources available to pursue activities as investments, research and development expenses and acquisitions. These activities are typical paths for fast growth but are also possible sources of overinvestment (Hubbard 1998; Yermack 2004) and "empire building" (Jensen 1986; Immordino and Pagano 2009). This behavior is more likely in companies where comparatively weaker governance increases agency costs. SCAS filings provide anecdotal but widespread evidence of such costs. Bonini and Boraschi-Diaz (2010) support this view by looking at the M&A activity, R&D expenditures and dividends disbursement by SCAS companies.

Results reported in Fig. 13.2 show that companies sued by security holders show a much higher volume of acquisitions than similar companies in the same industry, as measured by the four-digits SIC code. In particular, SCAS companies complete an average of four acquisitions per year, which is twice the industry average. Similarly, the average dollar value of yearly acquisitions is approximately six times larger than that of the competitors. This pattern, however, subsides and reverts to the industry mean after the class action filing, suggesting that the abnormal pre-filing activity was likely excessive.

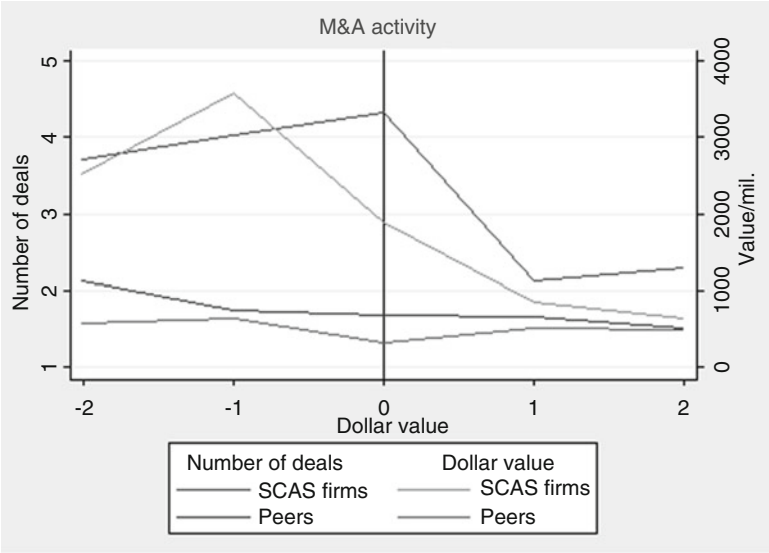

Fig. 13.2 M&A activity by event year. This table reports the mean number and dollar value of M&A transaction of firms involved in a corporate scandal and the peers group. The control group is a value-weighted portfolio of firms within the same four-digit sic code (by event year)

Similarly, also R&D expenses grow at an abnormally high rate before the class action. Once the scandal is revealed, R&D growth falls rapidly below the industry level and is eventually not statistically different from that of the peers group.

This level of overinvestment is possibly allowed by weaker governance in SCAS companies. Standard financial theory has highlighted that dividends are costly to a firm, as they reduce the amount of cash available for precautionary and investment purposes. However, dividends have strong signaling effects, and actual payout levels are set according to a complex set of information and signals (John and Kalay 1982; Miller and Rock 1985; Jensen 1986). Harford et al. (2008) suggested that when firms have weak governance mechanisms, agency costs are higher and are associated with low levels of dividends and dividend growth. Figures 13.2 and 13.3 provide neat evidence of overinvestment. Results reported in Fig. 13.4 support the agency cost view by showing that SCAS companies consistently exhibit lower dividend yields when compared with their industry peers. Yields are most often close to zero and grow only after the scandal eruption.

Is It Possible to Prevent Corporate Fraud?

The previous results show that frauds have large and meaningful effects on investors' wealth. The early detection of scandals, if not their prevention, is therefore valuable to stakeholders.

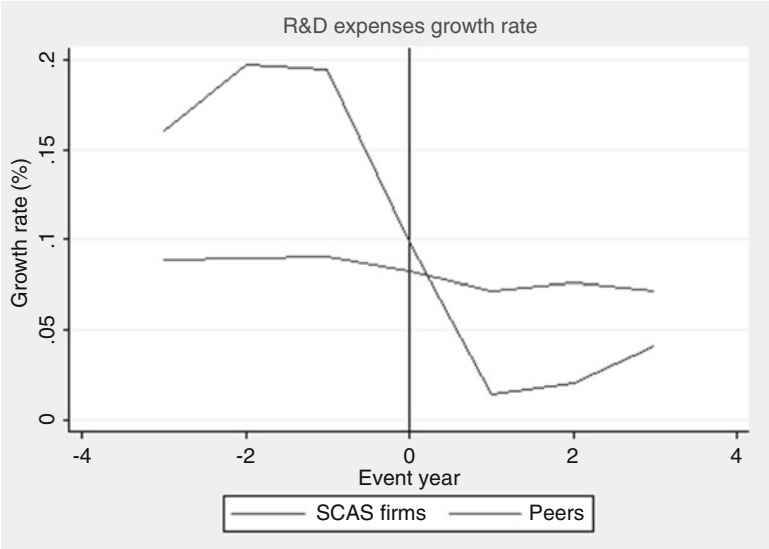

Fig. 13.3 R&D expenses growth by event year. This table reports the R&D expenses growth rate for companies involved in a security class action and the peers group. The control group is a value-weighted portfolio of firms within the same four-digit sic code (by event year)

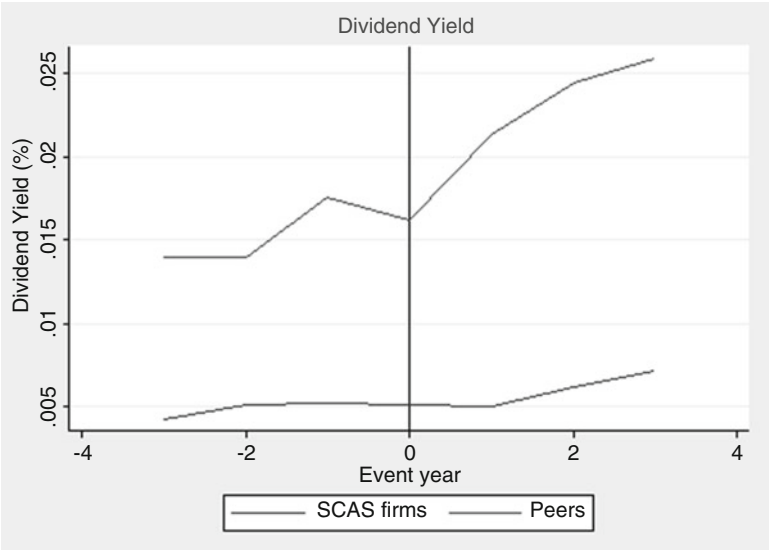

Fig. 13.4 Dividend Yield by event year. This table reports the Dividend Yield for companies involved in a security class action and the peers group. The control group is a value-weighted portfolio of firms within the same four-digit sic code (by event year). The event year t = 0 is the year in which the security class action suit was filed against the firm

Table 13.3 Distribution of whistleblowers

Whistleblower	Specific whistleblower	Count	Relative frequency (%)
Firm	Firm	60	24.70
	Total firms	60	24.70
Insiders	Board and new management	16	6.60
	Officers	5	2.10
	Total insiders	21	8.70
Blockholders	Equity holders	1	0.40
	Banks	6	2.50
	Total blockholders	7	2.90
Employees and other stakeholders	Employees	29	11.90
	Suppliers	2	0.80
	Clients	7	2.90
	Competitors	3	1.20
	Total employee and others	41	16.80
Professional service	Auditors	24	9.90
	Insurance	1	0.40
	Investment bankers	0	0.00
	Total professional service	25	10.30
Access through disclosure	Analysts	26	10.70
	Plaintiff law firms	2	0.80
	Total disclosure access	28	11.50
Media	Newspapers	25	10.30
	Total media	25	10.30
Regulators	Trade organization	4	1.60
	Industry regulators	18	7.40
	SEC	8	3.30
	Federal investigators	6	2.50
	Total regulators	36	14.80

Note: This table reports the absolute value and frequency of whistleblowers in corporate frauds. The sample is SCAS filed between 1996 and 2004

Dyck et al. (2007) analyze the fraud discovery process trying to identify the most effective agents in frauds detection and revelation.[1] Using a sample of 243 cases of alleged corporate frauds that took place in U.S. companies with more than 750 million dollars in assets between 1996 and 2004 they find that fraud detection does not rely on standard corporate governance actors. Interestingly, private litigation itself does not seem to play any role in the revelation of fraud. Instead they found that employees, short sellers and analysts are the most likely detectors of corporate frauds. Routine earnings announcements were found to be the single greatest trigger factor in the uncovering of the fraud – when faced with disappointing earnings, and lacking a convincing alternative story, firms can simply admit their misdeeds. Table 13.3 shows the identity of the whistleblower whose actions brought the fraud to light.

[1] The authors define fraud detectors and revelators "whistleblowers" in accordance with common jargon.

Cohen et al. (2010) try to understand if fraud can be unveiled by screening managers personality traits. The authors examine executives behavior in 39 cases of corporate scandals, using evidence taken from press articles such as managers' quotes and journalists' analyses.[2] They frame fraud around the theoretical frameworks of the fraud triangle and the theory of planned behavior. According to Wilks and Zimbelman (2004) fraud risk is explained as the interaction of three causal influences affecting a potential perpetrator: incentive, opportunity, and attitude. The later is called the triangle fraud theory. The second theory used is one that emphasizes the role of intentions in explaining behaviors and posits that intentions to perform behaviors of different kinds can be predicted with high accuracy from attitudes toward the behavior, subjective norms and perceived behavioral control (known as the theory of planned behavior) (Cohen et al. 2010). The theoretical framework and the analysis of the case studies conclude that personality traits appear to be a major fraud risk factor. The authors proceed with a validation of the results through a quantitative analysis of key words and confirmed that those key words associated with the attitudes or rationalizations component were predominately found in fraud firms as opposed to a sample of control firms. They conclude suggesting that formal auditing process should also begin to be framed around the predictions of the theory of planned behavior components such as the assessment of attitude, subjective norms, perceived behavioral control and moral obligation.

Conclusion

The economic consequences of corporate fraud are large and widespread. Shareholders, stakeholders and the economy are impoverished by the seemingly unstoppable misbehavior by corporate managers. This paper has reviewed the main theories of frauds, presented the empirical evidence on the financial consequences of corporate scandals and the characteristics of fraud detection mechanisms. However more research is needed to investigate the causes of managerial fraudulent behavior and the introduction and enforcement of alternative fraud detection mechanisms. With regards to the incentives to commit fraud, the Becker (1968) argument seem to be strikingly clear in suggesting that the trade-off between costs and benefits is still overwhelmingly unbalanced towards the benefits side. It is, in fact unclear whether incentives come from a low probability of detecting frauds or from the limited personal and financial consequences for managers in the long-run, or both. Several papers estimated the obvious short run effects in terms of reduction in value of equity-linked

[2] They report a large number of examples among which: "*Martin Grass, CEO of Rite Aid Corporation, and Jeffrey Citron, CEO of Datek Online, had something in common: they liked to commute to work by personal helicopter*" (Ahrens 2002); "*Several CEOs had a real passion for sports which perhaps influenced them to commit fraud. Mickey Monus "borrowed" about $10 M of Phar-Mor's funds to cover the debts of one of his sports team*" (McCarty and Schneider 1992).

compensation. However, this value loss should not be estimated in isolation but jointly with previously accrued profits generated by fraudulent behavior that could be well in excess of the losses arising from the fraud eruption and future profits coming from holding executive positions either in the same firm or in other firms. On this latter point, it is in fact unclear the extent to which fraudulent managers bear significant medium to long term costs in the form of loss of job, drop in compensation, and personal prosecution. This is a crucial piece of empirical evidence that calls for further research.

On the other hand, much can be done in terms of timely detection and prevention of corporate frauds. The design of compensation packages offers clearly room for substantial refinements by reducing the ex-ante financial benefit of hindering or manipulating price-sensitive information. Similarly, the internal governance of firms should be designed in accordance to the likelihood of committing fraud and be stricter and more finely designed where firm characteristics such as high growth, earnings volatility and intensity of the competitive environment would suggest a larger incentive to misreport. Since this incentive is strictly linked to the structure of the compensation packages, the latter should become a determinant of the structure and mechanisms of internal governance. Finally, market participants and regulators should implement stricter controls not only on financial and accounting data and reports but also on softer measures of potential fraud such as significant deviations in some practices such as R&D spending, M&A activity, security issuance and managers behavior that have all proven to be significantly linked with corporate frauds. We anticipate these will be fruitful areas for future research.

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Chapter 14
Corporate Governance and Business Strategies for Climate Change and Environmental Mitigation

Raj Aggarwal and Sandra Dow

Introduction

While there is considerable skepticism in the U.S. business community, many astute thought leaders have concluded that the management of environmental risk will soon be the most important decision facing corporate boards and managers as firms will be called upon to reduce emissions or suffer significant loss of market value. Climate change mitigation and sustainability issues are popular with developed country consumers and prominent in the media. So, formulating the corporate response to climate change and environmental degradation is becoming increasingly important. Yet most companies and their senior management are often conflicted in their responses as they normally have trouble justifying expenditures on such responses as firm value maximizing. In the U.S., government policy and regulatory requirements are still unclear with regard to climate change and global warming even though elsewhere in the industrialized world, moves to a cap-and-trade and other mechanisms and public policies to curtail carbon emissions are much more advanced and well-established.

Nonetheless, globally and in the U.S., driven by increasing demands from the public, the risks posed in the transition to a low-carbon economy are increasingly being documented and reported. However, at present the disclosure of the risks posed by carbon emissions by most firms is extremely poor. *Trucost* reports that for U.S. firms in 2007, only 15% of firms disclosed green house gas (GHG) emissions either publicly or through communications with *Trucost*. Indeed, *Trucost* is quite

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critical of the overall quality of disclosure.[1] For example, according to a recent analysis by *Trucost* of the carbon risks in the S&P 500, more than half of total greenhouse gases (GHGs) emitted by the S&P 500 are the result of fuel use and industrial processes; but 80% of companies also had supply-chain emissions in addition to direct emissions from operations. Fortunately, given the rising importance of these issues and spurred on by major institutional investors, a great deal of data on the impact of environmental performance of the largest U.S. firms (e.g., the S&P 500) compiled by investment research firms such as *Ceres*, *Trucost*, the *Standard and Poor's Corporation-Newsweek*, and others are now becoming available. In addition the U.S. EPA is requiring that the 28,000 largest GHG emitters start reporting their emissions of GHGs starting with the calendar 2010 year. Thus, there is increasing pressures from the public, institutional investors, and governments to report and manage GHG emissions. Given that climate change mitigation efforts are currently considered beyond the scope of responsibilities for senior management (unless directed by the board of directors), it is important to know the influence of corporate governance on climate change mitigation efforts. However, this literature is notable for its sparseness.

In this study of the 500 of the largest firms in the U.S., we show empirically that environmental disclosures and investment aimed at mitigation significantly influence firm value. Moreover, we show that these effects are economically significant. Firms with greater than industry average greenhouse gas exposure have below average Tobin's Q. However, we find a positive relationship between investment in mitigation strategies and Tobin's Q. Further, this study specifically documents that institutional ownership and entrenchment seem to significantly influence climate change and environmental impact policies of large firms. Firms tend to invest less in climate risk mitigation when boards are entrenched although the presence of institutional investors somewhat mediates this relationship. However, the role of institutional investment in promoting long-term environmental performance remains ambiguous. Greater institutional investment leads to weaker scores on environmental policy implementation.

Our paper is one of the first to examine the link between corporate governance and environmental risk, especially as it relates to climate change. More broadly, scholars have addressed the link between governance and firm value. Gompers et al. (2003) identify 24 key governance provisions likely to affect firm value and show that well-governed firms are worth more than poorly governed firms. Bebchuk et al. (2009) distil these key indicators to six anti-shareholder provisions that lead to board entrenchment. They find that firm value varies inversely with board entrenchment. Both the Gompers et al. (2003) and Bebchuk et al. (2009) indices emphasize external governance attributes likely to impede shareholder activism. However, as

[1] *Trucost*, "Carbon Risks and Opportunities in the S&P 500", June 2009. This disclosure failure poses significant challenges for corporate managers and board members and for policy makers as the analysis of the long-term impact of climate change on firm value is very difficult in the absence of good reliable data on GHG emissions.

Bebchuk and Weisbach (2010) note, many of these mechanisms serve as substitutes for one another and indeed for a host of other external and internal governance mechanisms including ownership structure, executive compensation, board characteristics, and the legal environment within which the firm operates. Untangling these interactions provides a fruitful direction for governance research.

In this chapter we begin with a discussion of the environmental responses by value maximizing firms and the challenges and pressures which shape these responses. Next we describe our data and methodology followed by presentation of empirical results. Lastly we provide our concluding observations.

Environmental Responses by Value Maximizing Firms

Climate Change and Business

Many serious effects are forecast to be associated with climate change and global warming. With melting ice, sea levels are expected to rise so that there are significant flooding threats to islands and low-lying coastal areas. Formerly cold places may become much warmer, precipitation amounts and patterns may change with more frequent extreme events, food production may be disrupted, and there may be greater demand for natural disaster insurance (e.g., Aggarwal 2009). The Stern Report (2007) contends that climate change could, for example, disrupt financial markets by generating higher and more volatile insurance prices. In brief, climate change is expected to impact the physical assets of firms and potentially the capital markets that supply valuation signals and financing.

While there continues to be some remaining debate among policy makers and even a few scientists regarding the extent and nature of climate change and its human or natural origins, many in the corporate sector have begun preparing for changes accompanying a more stringent regulatory context. It is clear that carbon dioxide and other GHG emissions have steadily increased from the pre-industrial revolution level of about 270 ppm to the current level of 430 ppm[2] and that these gases trap more solar energy at higher concentrations so that average temperatures across the globe seem to be rising (Global Warming). However, the association of this temperature rise with these higher GHG emissions by humans is not yet universally uncontroversial and so policy responses in the U.S. remain ambiguous.

Mitigation of climate change effects, such as global warming, by reducing carbon footprints suffers from the "tragedy of the commons", i.e., the costs of mitigation are most likely to be at least partially private while the benefits are public. There is a significant "free-rider" problem not only between private and public (national) interests, but between national and global interests. International

[2] Stern Review: The Economics of Climate Change (2007).

trade makes it possible to seek and take advantage of less expensive climate change regulation regimes (Mattoo et al. 2009). Thus, effective climate change mitigation policies involve international cooperation and agreement.

The Stern Review on the *Economics of Climate Change* (2007) is blunt in addressing this issue of private/public benefits: "Climate change presents a unique challenge for economics: it is the greatest and widest-ranging market failure ever seen." In addition to the threat to a firm's physical assets arising from climate change as well as costs associated with regulatory compliance to reduce GHG emissions; the competitive environment for the firm's products is likely to undergo subtle shifts that require anticipatory firm-level responses. Estimates of the economic impact of climate change vary widely. For example, while at a macro level, minimum costs of mitigation are estimated at around 1% of world GDP, the overall loss to firm value could range as high as 15% of GDP.[3] Most importantly, climate change will differentially affect countries and industries both directly and indirectly. For example, Hershey's voluntary disclosure to the Carbon Disclosure Project, states that:

> The Hershey Company relies on a number of agricultural commodities to produce its products, chiefly cocoa, nuts and sweeteners. As such, the geographical areas where these crops grow would be most material. Climate change research indicates that agricultural/climate zones and rainfall patterns may shift, representing a long-term physical risk to commodity supplies. Timing and intensity of these effects remain uncertain, so it is difficult to speculate on the degree of risk in this area. We would bear the same impact as other chocolate, confectionery and food industry peers.

Hershey's disclosure further recognizes secondary impacts that could affect the conduct of their business:

> Scientists have reported that climate change may result in rising sea levels and more severe weather, such as hurricanes. This has the potential to impact the shipping industry and thus the cost of imported raw materials, such as cocoa. As above, the timing and intensity of this impact are unknown, but would affect our sector as a whole to the same degree.[4]

Indeed, there are many companies that are beginning to recognize the varied impacts of GHG emissions. For example, Wal-Mart affirms that their retailing activities are at risk from climate change.

> There could be localized effects ... that could curtail operations, hamper supply chain, cause supply shortages or prevent customers from accessing our stores, all of which could result in sales decreases or cost increases. For example, Wal-Mart has more than 250 stores within five miles of a U.S. coastline and more than 500 stores within 10 miles. If sea levels were to rise, they could have devastating effects on these stores and the communities in which they are located. As an example of the potential effects, due to Hurricane Katrina in 2005, we closed approximately 200 of our stores and clubs for at least some period of time. Out of those 200, we had 110 locations that suffered damage ranging from moderate to

[3] The estimate of 1% is taken from the Stern Review: Economics of Climate Change, 2007. The figure of 15% is a Goldman Sachs forecast assuming a high price for carbon at $150/ton. Also the Stern figure considers only mitigation costs, whereas the Goldman Sachs numbers reflect attempts to estimate the overall loss of firm value due to climate change.

[4] Extract of disclosure by Hersey Company to the Carbon Disclosure Project (2009).

> severe. We had at least six stores or clubs that were shut down for more than 3 months, and three of those have never reopened. Our average daily sales per store in 2005 were in excess of $150,000 per day. Had just these six stores remained open, we would have achieved cumulative sales from them of more than $225,000,000.[5]

However, there are still a wide range of responses to this issue. As it currently stands, even companies operating within the same industrial sector differ in their evaluation and responses to climate change. For example, Google discloses that they do not believe they have any exposure from the physical risks of climate change. Yahoo, however, recognizes that their operations can be physically impacted by climate change.[6]

The news is not entirely bleak for the corporate sector, however. Emissions abatement policies present opportunities for firms in the transition to a low carbon economy. Estimates furnished in the Stern Report suggest that by 2050 the market for low-carbon energy products may be worth at least $500 billion per year. Complying with emissions abatement will force firms to seek enhanced production efficiencies that can positively impact firm value.

The complicated joint public/private impacts of and solutions to climate change are reflected in concrete developments through the Kyoto Protocol and regulatory bodies such as the EPA and the SEC in the U.S., as well as broader initiatives from private capital market stakeholders (environmental watchdogs such as Ceres, Standard and Poor's, investment banks such as Goldman-Sachs, and institutional investors such as CalPers). In addition, many companies like Wal-Mart have taken the lead and already moved ahead in implementing policies for reducing their carbon footprints. Further, public attitudes increasingly favor steps to control human impacts on global climate by reducing carbon footprints. Finally, the economic and political forces shaping the climate change environment for corporations are reflected in a number of currently un-coordinated local, state, national, and global responses.[7]

Global Response to Climate Change: The Kyoto Protocol

The UN Kyoto Protocol was signed in Kyoto Japan in 1997. Signatories agreed to reduce carbon emissions and to establish a carbon market where emission allowances and offset credits could be traded. As of late April 2008, 180 industrialized countries signed the Kyoto Protocol which committed them to reducing their collective GHG emissions to a level of 5.4% below their 1990 emissions levels by 2012. The best-known and best-organized market is the European Union Emission

[5] Excerpt from Wal-Mart's disclosure to the Carbon Disclosure Project (2009).

[6] Yahoo and Google disclosures to the Carbon Disclosure Project (2009).

[7] For example, 29 states, Puerto Rico, and DC now mandate a minimum percentage of energy production (between 15 and 25%) from renewable sources generally by 2020.

Trading System (EU ETS). The EU ETS has identified 10,000 energy-intensive industrial installations which are directly exposed to carbon costs (*Trucost* September 2009a, b). These firms must reduce emissions to meet their carbon cap or use allowances or offset credits to cover any short-fall. Naturally some firms will have emissions below the cap generating excess allowances and offset credits that can be traded in carbon markets such as the EU ETS. Despite evidence that points to early cap-and-trade systems displaying significant limitations in the exchange of carbon offsets (Raj 2009), cap-and-trade carbon markets allow for price discovery, although critics argue that current prices are well-below what would be required to stem climate change. Hence, carbon mitigation estimates provided by market-determined prices in cap-and-trade markets at best provide floor prices for greenhouse gas emissions.

U.S. Regulatory Response

In the United States, CO2 is already being regulated by the Environmental Protection Agency (EPA) and the Federal government has imposed ever tightening vehicle fuel economy standards. The EPA requires U.S. companies with major CO2 emitting facilities to report the extent of their CO2 emissions with the first reports covering 2010 due in March 2011. It seems clear that U.S. firms will most likely soon face heightened direct costs of emissions abatement. The U.S. has not agreed to participate in the Kyoto Protocol and U.S. opinion remains sharply divided over the merits of instituting cap-and-trade for carbon emissions versus other policy solutions including direct carbon taxation. In spite of a lack of policy guidance and clarity, U.S. equity markets are nevertheless already actively addressing climate change consequences.

Capital Market Stakeholder's Response

Influential institutional investors such as CalPers and environmental watchdogs like Ceres[8] have successfully pressured for enhanced environmental risk disclosure to the SEC. In late January 2010, the SEC issued interpretive guidelines for disclosure of risks associated with climate change. The goal of the guidelines is to clarify disclosure standards and promote consistency of disclosure across firms. As shown in Box 1, the SEC through these interpretive guidelines recognizes both regulatory and physical risks confronting the firm as a consequence of climate change (see http://www.sec.gov/news/press/2010/2010-15.htm). While the SEC is careful to

[8] Ceres is a U.S. network of investors, environmental organizations and other public interest groups working with companies and investors to address sustainability challenges.

emphasize that they are not taking a position on the science of climate change, through these guidelines, they are explicitly acknowledging that there are direct and indirect firm-level consequences that will materially affect firm market value and investor risks.

Standard and Poor's launched the S&P U.S. Carbon Efficient Index in March 2009 followed in December 2009 by the S&P/IFCI Large/Mid-cap carbon emissions index for emerging markets. This second index is intended to closely track the investment performance of its parent while its constituent firms provide a 24% reduced exposure to carbon emissions. Standard and Poor's is explicit in their rationale behind these index constructions:

> In our view, governments alone can't fight the battle against carbon emissions. The task is too large and the scope too wide. Thus, we think that a public private partnership is a must to make carbon reduction a reality. A process where stock market mechanisms reward companies that are more carbon efficient can be an effective way to deliver the eco-conscious message to the private sector.[9]

Investment banking houses, such as Goldman-Sachs, are ramping up risk-analysis associated with climate change. For example, in a document released in May 2009, Goldman-Sachs compares firm performance of 800 global firms in three firm categories: (i) *Abatement Leaders* in carbon intensive industries, (ii) *Adjustment Leaders* in less intensive industries, and (iii) *Solutions Providers* exposed to growth opportunities arising from climate change. Thus, their analytic framework captures both the risks and opportunities associated with the transition to a low-carbon economy. The Goldman Sachs position echoes the viewpoints of other capital market stakeholders as well as those of many policy-makers.

> Relative to either the value of current fossil fuel production or the earnings of listed companies globally, it is clear and logical that carbon (or its abatement) will become increasingly valuable and a far more important investment consideration. At U.S. $150/tonne, the total value of global carbon emissions represents more than five times the aggregate earnings of publically listed corporations around the globe and 15% of global GDP.[10]

Box 1 SEC Interpretive Guidelines

Impact of Legislation and Regulation: When assessing potential disclosure obligations, a company should consider whether the impact of certain existing laws and regulations regarding climate change is material. In certain circumstances, a company should also evaluate the potential impact of pending legislation and regulation related to this topic.

Impact of International Accords: A company should consider, and disclose when material, the risks or effects on its business of international accords and treaties relating to climate change.

(continued)

[9] http://www.ifc.org/ifcext/sustainability.nsf/AttachmentsByTitle/p_CarbonEfficientIndex/$FILE/Whitepaper_IFCI_Carbon_Efficient.pdf.

[10] GS Sustain, Goldman-Sachs Global Investment Research, May 2009, p.6.

Box 1 (continued)

Indirect Consequences of Regulation or Business Trends: Legal, technological, political and scientific developments regarding climate change may create new opportunities or risks for companies. For instance, a company may face decreased demand for goods that produce significant greenhouse gas emissions or increased demand for goods that result in lower emissions than competing products. As such, a company should consider, for disclosure purposes, the actual or potential indirect consequences it may face due to climate change related regulatory or business trends.

Physical Impacts of Climate Change; Companies should also evaluate for disclosure purposes the actual and potential material impacts of environmental matters on their business.

Case for Corporate Response to Climate Change

As indicated earlier, climate change influences both risks and opportunities for companies. As most corporate executives are not fully incentivized to take climate change mitigating actions, the corporate response is a strategic decision most appropriately taken at the Board level. Yet boards and managers might ask why they should undertake any expenses to support climate change mitigation. Indeed, by doing so, they may be wasting corporate resources that rightfully belong to their shareholders. Nevertheless, there are a number of forces compelling corporate action in this area.

First, reducing a company's carbon footprint may be associated with cost reductions and so lead to higher profits (Creyts et al. 2009). Indeed, research has shown that many actions to reduce carbon footprints have negative costs, i.e., they save money (e.g., better building insulation and other mechanisms to increase energy efficiency). The world's largest retailer, Wal-Mart, seems to be following this strategy as part of their response to potential regulatory changes governing GHG emissions. Wal-mart's disclosure to the Carbon Disclosure Project specifies the company strategy as follows:

> Retailers often have the greatest impact on consumer choice through promotion, display and, of course, pricing. The objective is not just the manufacture of clean technologies and products, but the sale and use of those items. If a retailer is able to demonstrate substantive efforts to increase the purchase and use of more energy efficient products, the law should allow for the aggregation of those emissions reductions and their exchange for marketable emissions reduction credits. The proceeds of the sale of those credits could then be used to further fund the discount and/or promotion of energy efficient consumer products. Obviously, rules would need to be developed to ensure additionality and accurate measurement.[11]

[11] Wal-Mart's disclosure to the Carbon Disclosure Project, 2009.

Second, many national, state, and local governments in the U.S. are rapidly introducing regulations and other mechanisms to reduce carbon footprints. While cap-and-trade markets currently provide a floor price for emissions abatement, corporate actions to mitigate climate change effects are likely to increase in cost the longer they are delayed. Thus, it is likely to be useful to take some mitigation actions in anticipation of regulatory requirements.

Third, consumers at least in the developed countries seem to want lower carbon footprints for the goods and services they buy. Indeed, there is some evidence that companies with wasteful carbon footprints are being valued less than companies with lower carbon footprints. While the exact amount consumers are willing to pay to reduce carbon footprints seems imprecise, it is clearly positive.

Fourth, there is great business opportunity in developing and implementing cost-effective climate change/global warming mitigating technologies (Lash and Wellington 2007). While, wind power and solar energy seem to have received the most attention so far, much greater opportunities lie in other areas such as smart grid, building insulation and energy efficiency, transportation, and insurance, among other areas (Popp 2010). Indeed, it is claimed that climate change/global warming mitigation is currently one of the more important forces for innovation (Nidumolu et al. 2009).

Fifth, capital market stakeholders, particularly large institutional investors, are exerting pressure for firms to be transparent in their disclosure of climate change risk. Given the importance of the institutional investors involved, it is clear that failure to respond effectively will reduce firm value. Indeed, firms that are inadequate in this regard are likely to see an increase in their cost of capital.

Thus, there are a number of reasons why businesses may want to take action to mitigate and reduce their carbon footprints. However, currently there does not seem to be strong and compelling empirical evidence showing that these reasons are firm value enhancing. Indeed, the empirical evidence of the impact of environmental risk on firm performance is quite limited. Findings provided in scholarly journals have mostly been part of a broader discussion of how corporate social responsibility (CSR) impacts firm profitability with attention to environmental strengths or concerns forming part of the measurement of social responsibility. The relationship between firm performance and overall CSR is ambiguous[12], and empirical studies

[12] Studies of the link between CSR and firm performance vary considerably in methodology. For example, some use the comparative performance of socially responsible mutual funds to conventional funds. Hamilton et al. (1993) and Statman (2000) do not detect performance differences between socially responsible funds and conventional funds. Screening for social responsibility is examined by Goldreyer and Ditz (1999). Their evidence does not suggest screening invokes better or poorer performance compared to conventional funds. Using meta-analysis, Orlitzky et al. (2003) draw broad conclusions based on examination of 52 CSR studies. They conclude that CSR programs are generally associated with higher or improved firm financial performance but the causality is unclear, suggesting that strong financial performance allows greater investment in CSR, which in turn leads to further enhancement of CSR policies. They also note that the benefits of CSR are reputational rather than being linked to concrete improvements in firm efficiency. However, recent work by Brammer et al. (2006) shows that CSR destroys shareholder value.

focusing upon environmental impact are sparse.[13] Further, the range of responses by U.S. corporate executives to climate change challenges so far has indeed been very wide.

Goldman Sachs (2009) reports that on average 68% of companies have acknowledged the importance of the issue to their business through public reporting of performance; and 60% have also assigned responsibility for climate change performance to members of their Board or senior management. However, Goldman Sachs (2009) also finds that the proportion of firms addressing climate change with follow-up action is low, particularly outside carbon-intensive sectors. One reason is the lack of clear relationship between expenditures on such activity and firm value maximization. Regulatory ambiguity especially in the U.S. further serves to obfuscate this relationship. Climate change/global warming mitigation technologies and policies will take time to deploy as they have to be developed and implemented. This longer horizon may conflict with management's shorter-term perspectives. Hence the Board's handling of the corporate response and the quality of its management oversight is a critical element in determining the effectiveness of the corporate response to climate change.

Corporate Governance and Responses to Environmental Risks

Corporate governance is the system of allocating decision rights to the various claimants in a corporation. These claimants generally include controlling and minority shareholders, creditors, and managers. In some countries other stakeholders such as employees may also be included in this group. As information is costly and has an asymmetric distribution among these claimants and optimal contracts are necessarily incomplete, there are residual agency costs and the nature and structure of corporate governance becomes important in practice.

Bebchuk and Stole (1993) examine managerial investment decisions in the presence of imperfect information and short-term managerial objectives. Prior research has argued that such an environment induces managers to under-invest in long-run projects. They show that when investors cannot observe the level of investment in a long-run project, suboptimal investment will be induced. However, when investors can observe investment but not its productivity, they contend that over-investment will occur. Given the uncertain cost-benefit analysis faced by

[13] Olsson (2007) examines the portfolio performance of a sample of U.S. firms from 2003 to 2006. He does not detect any significant difference in the risk-adjusted performance of low environmental risk compared to high environmental risk portfolios. Environmental risk rankings were based on summary statistics furnished by GES Investment Services. Derwall et al. (2005) study the link between environmental performance and Tobin's Q. They report that strong environmental performers do not enjoy higher market valuation relative to their peers, but weak environmental performers appear to be penalized in terms of Q, relative to peers. Brammer et al. (2006) find that social responsibility in environmental issues is negatively correlated with stock returns.

many companies with regard to climate change/global warming mitigation efforts, the decision to undertake any such efforts has to be strategic and to avoid over-investment, it should most likely be authorized by the corporate board of directors (Bebchuk and Stole 1993).

Corporate governance interfaces with "extra-financial" risks remain largely unexplored. McGuire et al. (2003) and Mahoney and Thorne (2006) find that executive compensation influences corporate social responsibility, including environmental responsibility. McGuire et al. (2003) find that in the U.S., base salary and long-term incentives are positively associated with weak social performance. Using Canadian data, Mahoney and Thorne (2006) report a positive relationship between salary and CSR weakness. Unlike the U.S. context, in their Canadian sample incentive pay forms are positively linked to CSR strengths. Board characteristics and the success of CSR strategies in general and environmental issues in particular, remain unstudied.

Academic studies have yet to adequately examine the risks and opportunities for firms that will have to operate in a low-carbon economy. Rather, studies in this area have typically originated with practitioners, and while they are very informative, they lack the necessary rigor to distil the most critical environmental risks faced by firms or the best methods to mitigate them.[14] Moreover, there seems to be no U.S. investigation of the corporate governance characteristics of a firm that would be compatible with environmental risk management. This issue is particularly important as environmental mitigation is strategic in nature and so the Board of Directors has a major role in formulating policy in this regard.

In this study, we test the hypothesis empirically that board governance in the U.S. influences environmental investments. We begin by assessing the impact that greenhouse gas emissions have on firm performance. Next, we assess the role of corporate governance on corporate efforts to mitigate climate change/global warming and other environmental hazards. Controlling for other relevant variables, data on the largest 500 companies are analyzed in a cross-sectional regression for 2008. We document significant influence of corporate governance measures on environmental actions.

Data Sources, Research Design, and Statistical Methodology

This section describes the data we analyze and the research design and statistical methodology used in our investigation. These sources and procedures are designed so that we can answer our research question with reasonable certainty.

[14] *Trucost* collaborated with Newsweek to produce a green ranking for 500 of the largest U.S. companies. Four summary environmental performance indicators were created from more than 700 environmental variables. *Trucost* has also produced a document "Carbon Risks and Opportunities in the S&P 500" (2009) that describes risk the risk exposure to carbon.

Sample and Data Sources

The sample we assess consists of 500 firms profiled by Newsweek in *Newsweek's Green Rankings 2009*.[15] This list, that provides us data on environmental performance and greenhouse gas emission levels, covers the largest U.S. companies as measured by revenue, market capitalization and number of employees. Data on the Newsweek 500 corporate environmental ratings are supplemented by 2008 *Value Line* ownership for financial performance data and data from Professor Lucien Bebchuk's website on board entrenchment (http://www.law.harvard.edu/faculty/bebchuk/data.shtml). As usual, missing observations reduce the final sample size somewhat. In particular, in assessing the impact of GHG emissions on firm performance, our sample size is significantly reduced due to non-reporting of GHG emissions. We report N for all regressions.

Research Design

Our first task is to establish whether firm performance metrics are affected by greenhouse gas emissions and firm actions aimed at mitigating such emissions. Since GHG reporting remains sparse (even in Europe where regulatory constraints on emissions and emissions abatement are strenuous in comparison) our sample size is constrained in this part of the analysis. Ideally we would like to compare emissions data over time but are unable to do so due to lack of availability. We also examine how the corporate governance characteristics of a firm influence the strategic response to climate change and broader environmental issues in a sample drawn from the 500 largest U.S. firms as identified by Newsweek (2009). In both the initial examination of GHG exposure and subsequent investigation of the link between environmental performance and corporate governance, we use OLS regression supplemented by two-stage least squares estimates to correct for any endogenous effects.

Firm Value and GHG Exposure

How does GHG exposure impact firm value? To address this question we examine the relationship between GHG exposure and long-term value as measured by Tobin's Q. Since Q can be highly industry dependent, we follow Bebchuk et al. (2009) and use an industry-adjusted measure of Q. We first use ordinary least squares regression to examine if greenhouse gas exposure impacts firm performance. We also check for

[15] Summary data were available at the Website. We purchased the full report to obtain greater detail.

endogeneity issues that may be present in our analyses. In effect, we are concerned that the direction of causality between environmental performance and firm performance could run both ways. To ascertain whether this is the case we use two-stage least squares regression and test for the presence of endogeneity using the Wu-Hausman test. We suspect that higher GHG emissions would lead to depressed Q. However, the impact on Q can be significantly attenuated by firm expenditures to manage such risk.

The OLS estimating equation is given by:

$$\begin{aligned}\text{Industry} - \text{Adjusted Q} = \text{b0} + \text{b1} \times \text{Main Independent Variable} + \text{b2} \times \text{Size} \\ + \text{b3} \times \text{Adjusted Leverage} + \text{b4} \times \text{Free Cashflow} + \varepsilon.\end{aligned} \tag{14.1}$$

Where:

(1) Industry-adjusted Q: We subtract average Q for the industry (using two-digit SIC codes) from the firm-level Q. Q is a proxy for Tobin's Q that is calculated as the ratio of the enterprise value of the firm plus cash to the book value of assets. Data are from Value Line.

Main independent variables in separate OLS regressions are as follows:

(2) Adjusted Greenhouse Gas Exposure: We subtract average exposure for the industry (using two-digit SIC codes) from the firm-level exposure. Exposure is defined as the natural log of the ratio of greenhouse gas emissions as reported by Newsweek (2009) to EBITDA as reported by Value Line.
(3) Adjusted environmental impact score: We subtract the average environmental impact score (EIS; using two-digit SIC codes) from the firm-level environmental impact score. The Environmental Impact Score (EIS) is summarized by Newsweek (2009) and is based on quantitative data supplied by *Trucost* and spanning over 700 variables. EIS *measures the total cost of all e*nvironmental impacts of the firm's global operations and is used by us as a proxy for the costs of mitigating GHG exposure. The EIS i*s* normalized against a company's annual revenues. Higher scores indicate better performance.

The control variables are:

(4) Size: the natural log of the book value of assets as reported by Value Line.
(5) Adjusted leverage: We subtract average leverage for the industry (using two-digit SIC codes) from the firm-level leverage. Leverage is defined as the market debt/equity ratio as reported by Value Line.
(6) Free cashflow: We use the ratio of free cash flow to sales as reported by Value Line.

We repeat the analysis and conjecture that the environmental impact score (EIS) and adjusted Q are likely endogenously determined. We investigate this by instrumenting EIS with our adjusted GHG exposure variable and performing two-stage least squares regression.

Corporate Governance and GHG Mitigation

We investigate whether corporate governance characteristics impact firm-level expenditures that may mitigate environmental exposure. We also examine whether governance influences the adoption of environmentally friendly policies.[16] Our methodological approach again rests on ordinary least squares, supplemented by two-stage least squares where appropriate, and applied to a year 2008 cross-sectional sample of the 500 largest firms surveyed by Newsweek (2009). Missing observations reduce the final sample and we report N for all regressions. The OLS estimating equation is given by:

$$\begin{aligned} Y = b0 + b1 \times \text{Entrenchment} + b2 \times \text{Governance} + b3 \\ \times \text{Control Variables} + \varepsilon \end{aligned} \tag{14.2}$$

The dependent variables (Y) for this stage of analysis are as follows:

(1) Environmental Impact Score as defined earlier.
(2) Green Policies Score: KLD data are reported as strengths representing best-in-class policies, programs and initiatives, and as weaknesses which focus upon such elements as regulatory infractions, community indicators etc. Newsweek reports a summary statistic that captures the firm's overall performance in KLD sourced data. Higher scores indicate better performance.

The explanatory variables that we hypothesize will influence environmental performance are grouped in two categories. The first set of variables capture the corporate governance context of the firm, while the second set contains control variables:

Corporate Governance Variables

We note here that the role of corporate governance can be negated by entrenched boards and management. However, while we suspect that entrenched boards and managers will pursue short-term objectives, it is possible that entrenchment could allow boards and managers to pursue long-term objectives. For example, Chemmanur and Tian (2011) show that anti-takeover measures can actually promote value-enhancing innovation. To pursue this investigation we need a reliable measure of corporate entrenchment. Fortunately, prior literature (Bebchuk et al. 2009) has developed such a measure and we use it in our study. Bebchuk et al. develop an entrenchment index and find that increases in the index level are monotonically

[16] While our impact measure is a proxy for environmental action requiring expenditure, the policy variable could represent "green-washing" attempts. Preliminary evidence supplied by Goldman-Sachs' GS Sustain Report (2009) suggests that firms seem far more willing to adopt policies rather than enact them, perhaps in an effort to enhance their green reputation.

associated with economically significant reductions in firm valuation as well as large negative abnormal returns during the 1990–2003 period. Other variables in this group reflect the ownership structure of the company – specifically the percentage of the outstanding shares owned by insiders and by institutional owners. Specifically we include the following variables:

(3) E-index: This measures the degree of board entrenchment. Bebchuk et al. (2009) identify six key indicators of board entrenchment from the 24 measures employed by the Investor Responsibility Research Center (IRRC). The summary E-index accounts for the following provisions: staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes, and supermajority requirements for mergers and charter amendments. The E-index is measured on a scale of 1 to 6 representing the number of entrenchment indicators recorded for the firm. Consequently, a higher value of the E-index is representative of a more entrenched board.
(4) Insider Holdings: Following prior literature (for example: Morck et al. 1988), we use the square of the percentage of the firm held by insiders to reflect non-linearity in the influence of this variable.
(5) Institutional Holdings: Following prior literature, we use the square of the percentage of the firm held by institutional investors to reflect non-linearity in the influence of this variable.

Control Variables

(6) Firm Size: The natural log of total assets obtained from Value Line.
(7) Profitability: Measured as ROA obtained from Value Line.
(8) Industry: *Measured as* industry placement obtained from Value Line.
(9) Free cashflow: We use the ratio of free cash flow to sales as reported by Value Line.
(10) Leverage: We use the market debt/equity ratio as reported by Value Line.

Empirical Results

Table 14.1 presents descriptive statistics for key variables in our study. We present the means, standard deviations, and number of observations for all variables used in this study. We include sample statistics for all firms (for which data are available) included in the *NewsWeek* 500 (2009) list. We also display descriptive statistics for "Small Sample" that report GHG emissions in the *NewsWeek* (2009) report. As the numbers presented in this table show, there seems to be considerable variation in our variables so we can expect regression results that are likely to be significant. We conducted (but do not tabulate) t-tests for differences in these samples. Notably, Impact and Policy differ significantly between the broader and smaller sample.

Table 14.1 Descriptive statistics

	Q	*Q Small Sample*	Impact	*Impact Small Sample*	Policy	*Policy Small Sample*	Leverage	*Leverage Small Sample*
Mean	1.45	*1.42*	50.22	*43.21*	39.89	*49.34*	0.6	*0.54*
Std. Dev.	1,07	*0.98*	28.8	*28.57*	18.28	*17.94*	1.97	*0.93*
N	477	*248*	499	*248*	499	*248*	477	*248*
	Entrenchment	*Entrenchment Small Sample*	Inside	*Inside Small Sample*	Instit.	*Instit. Small Sample*		
Mean	3.44	*3.39*	0.06	*0.05*	0.77	*0.74*		
Std. Dev.	1.24	*1.28*	0.1	*0.11*	0.15	*0.15*		
N	441	*234*	406	*195*	465	*241*		
	FCF/Sales	*FCF/Sales Small Sample*	ROA	*ROA Small Sample*	Size	*Size Small Sample*	GHG	
Mean	0.12	*0.13*	0.07	*0.07*	9.54	*9.93*	5.83	
Std. Dev.	0.16	*0.17*	0.06	*0.05*	1.3	*1.3*	1.96	
N	438	*234*	477	*248*	477	*248*	248	

For each variable we present the full sample descriptive statistics. We also present "Small Sample" descriptive statistics that show means and standard deviations for a sample of firms that report GHG emissions. Q is the ratio of the enterprise value of the firm plus cash to the book value of assets reported by Value Line. Impact is the environmental Impact score from Newsweek, Policy is the green policy score attributed by Newsweek. Leverage is the market value debt equity ratio reported by Value Line. GHG is the natural log of the ratio of GHG emissions to EBITDA as reported by Newsweek (GHG) and Value Line (EBITDA). Entrenchment is the Bebchuk et al. (2009) index of entrenchment. Inside Own is the % of the firm held by insiders and Instit. Own is the percentage of the firm held by institutions; both as reported by Value Line. ROA is return on assets as reported by Value Line. Size is the natural logarithm of the book value of assets as reported by Value Line. FCF/Sales is the ratio of free cashflow to sales as reported by Value Line

We note that the Environmental Impact Score is lower and the Policy Score is higher in the smaller sample. This might be due to the fact that firms that report GHG emissions to begin with have more environmental policies in place compared to those that do not report GHG emissions, although they seem to invest less in mitigation technologies. Interestingly, entrenchment is somewhat lower for firms that report emissions versus those that do not and this difference is also significant. Institutional investment is significantly greater among non-reporters and non-reporters are smaller in size. Correlations between variables are reported in Tables 14.2 and 14.3.

In Table 14.4 we present the results of OLS and 2SLS regressions with the dependent variable, Adjusted Q. Due primarily to non-reporting of greenhouse gas emissions the sample size varies between 230 firms and 426 firms. As indicated by the results contained in the first column, in our cross-section of firms higher greenhouse gas exposure significantly lowers Q. In the second column we report results for dependent variable Q, where GHG exposure is replaced by the adjusted environmental impact score. Recall that this variable represents the costs incurred by the firm to mitigate environmental exposure. Interestingly, greater expenditure seems to weakly enhance Q, although the coefficient is not significant at conventional levels.

We considered the possibility that the environmental impact score may be endogenous in the system. Reasonably, more profitable firms could expend resources to mitigate environmental issues and firms that expend resources in an effort to reduce exposure could experience higher Q. Accordingly, we specified a 2SLS model where the adjusted environmental impact score was instrumented by adjusted GHG exposure. The results of the Wu-Hausman test confirm our suspicion that impact and Q are endogenously determined. As reported in Column (3) adjusted environmental impact score is positively and significantly associated with higher Q.

One of the drawbacks of our study is the small sample resulting from lack of GHG disclosure. We examined whether GHG disclosure itself could proxy for GHG exposure by developing a dummy variable with a value of unity if GHG emissions are disclosed and zero otherwise. We repeated the OLS regressions on an enlarged sample of 426 observations and found that GHG disclosure itself is not a significant predictor of Q. We then tried substituting GHG disclosure to instrument adjusted EIS in the 2SLS regression. This again produced an enlarged sample of 426 firms, but the instrument is not valid and adjusted EIS is not significant. We do not tabulate these results but they are available upon request from the authors.

In brief, our results confirm that higher exposure to greenhouse gas emissions reduces Tobin's Q but greater expenditure on mitigation efforts significantly enhances Tobin's Q. Our results are economically significant. For firms that depart from average industry-adjusted greenhouse gas exposure by one standard deviation, Tobin's Q (industry adjusted) varies by almost 15%.[17] This conclusion is reinforced

[17] The sample of firms disclosing their greenhouse gas emissions is a subset of the larger sample of firms. We used the full set of firms to determine industry averages. Note that Q is not negative. We report industry-adjusted Q. Negative values reflect below industry average performance. Firms disclosing greenhouse gas exposure have below average industry-adjust Q.

Table 14.2 Correlation matrix full sample

	Q	Impact	Policy	Leverage	Entrenchment	Inside	Instit.	FCF/Sales	ROA	Size
Q	1.00									
Impact	0.17	1.00								
Policy	0.01	−0.10	1.00							
Leverage	−0.37	−0.11	0.02	1.00						
Entrenchment	−0.06	−0.17	−0.08	−0.04	1.00					
Inside	0.07	0.06	0.05	−0.08	−0.10	1.00				
Instit.	−0.01	0.19	−0.28	−0.12	0.14	−0.09	1.00			
FCF/Sales	0.19	0.17	0.07	0.15	−0.07	0.00	−0.10	1.00		
ROA	0.63	0.05	−0.01	−0.42	0.02	0.02	0.00	0.20	1.00	
Size	−0.32	−0.01	0.25	0.38	−0.16	−0.14	−0.37	0.17	−0.18	1.00
N = 325										

Sample size is smaller due to missing observations

Table 14.3 Correlation matrix small sample

	Q	Impact	Policy	Leverage	Entrenchment	Inside	Instit.	FCF/Sales	ROA	Size	GHG
Q	1.00										
Impact	0.13	1.00									
Policy	0.10	−0.04	1.00								
Leverage	−0.36	−0.03	−0.03	1.00							
Entrenchment	−0.04	−0.14	−0.08	−0.10	1.00						
Inside	0.08	0.09	0.15	−0.11	−0.07	1.00					
Instit.	−0.07	0.23	−0.18	−0.10	0.16	−0.15	1.00				
FCF/Sales	0.21	0.27	0.06	0.26	−0.13	0.01	−0.06	1.00			
ROA	0.63	0.04	0.06	−0.48	0.07	0.10	−0.06	0.08	1.00		
Size	−0.30	0.12	0.07	0.40	−0.26	−0.12	−0.28	0.21	−0.11	1.00	
GHG	−0.30	−0.73	−0.06	0.06	0.12	−0.02	−0.07	−0.44	−0.20	−0.10	1.00
N = 170											

Sample size is smaller due to missing observations

Table 14.4 Firm performance and greenhouse gas exposure

Adjusted Q								
OLS						2SLS		
	b	t		b	t		b	t
Adj. GHG exposure	−0.208**	−3.221	Adj. EIS	0.007+	1.877	Adj. EIS	0.023**	3.132
Size	−0.272**	−2.929	Size	−0.304***	−4.285	Size	−0.258**	−2.694
Adj. leverage	−0.154***	−11.646	Adj. leverage	−0.156***	−17.562	Adj. leverage	−0.155***	−11.367
FCF	0.435	0.734	FCF	0.646	1.341	FCF	0.461	0.759
Intercept	−2.464**	−2.658	Intercept	−2.293**	−3.309	Intercept	−2.574**	−2.695
N	230		N	426		N	230	
r2	0.417		r2	0.453		r2	0.369	
F	40.185		F	87.17		Chi-sq	151.94	
p	0		p	0		p	0	
						Wu-Hausman		
						F (1, 224)	8.129	
						P	0.0048	

We present results of OLS and 2SLS regressions of firm performance. Adjusted Q is a proxy for Tobin's Q that represents firm deviations from the two-digit SIC industry average. Q is calculated as the enterprise value of the firm plus cash divided by the book value of assets as reported by Value Line; Adj. GHG Exposure is measured by the deviation from the industry average GHG exposure where GHG exposure is measured by the natural log of the ratio of GHG emissions to EBITDA. GHG emissions are obtained from Newsweek (2009) and EBITDA is reported by Value Line. Adj. EIS is the industry adjusted environmental impact score as reported by Newsweek (2009). Size is the natural log of the book value of assets. Adj. Leverage is the deviation from the industry average leverage, where leverage is the market value debt equity ratio reported by Value Line. FCF measures the ratio of free cashflow to sales as reported by Value Line. In Column (3) the 2SLS regression specifies that adjusted EIS is endogenous and is instrumented by adjusted GHG exposure

*** Significant at 0.0001; ** Significant at 0.01; + Significant at 0.10

through examination of the link between investment in mitigation efforts and Tobin's Q. Using information from the 2SLS regression we find that firms that depart just one standard deviation from the industry-wide norm in mitigation efforts are penalized when under-investing (adjusted Tobin's Q falls to −2.5) and rewarded when industry adjusted investment levels exceed the norm (adjusted Tobin's Q rises to −1.595).

Interestingly, despite regulatory ambiguity, it appears that the market is beginning to penalize large emitters, while at the same time rewarding firms that undertake concrete mitigation efforts. Nevertheless a final caveat is worth noting: the level of GHG emissions is tied to the general level of economic activity and significant GHG emissions are influenced by sector and also by the relative prices of oil, natural gas, and coal. Hence, variations in GHG emissions (which we are unable to observe) will in part be due to these macro-level variables. Regardless of best efforts or no effort in regard to environmental policy, firms will adjust GHG emissions to the stage in the business cycle. Since we are unable to examine time-series data, these complexities are of less importance for our current study.

Our next set of results assesses the relationship between corporate governance and firm response to environmental issues. We examine only firms that do not have shares with multiple voting rights since Bebchuk et al. (2009) stress that the entrenchment index is not applicable to firms with dual class shares.

In Table 14.5 we present OLS regression results for the dependent variable Environmental Impact Score. The E-index is negative and significant and the degree of explanatory power as measured by R-squared is very high. The more entrenched the board, the lower is the score on Environmental Impact. In fact, for the least entrenched board with only 1 anti-shareholder measure (E-index = 1), the environmental impact score is estimated by the regression at 50.4; while the most entrenched board (E-index = 6) results in a decline in the estimated environmental impact score of almost 10 points.[18] Environmental Impact measures, for example, the mitigation costs of environmental impact. Firms with entrenched boards will devote fewer resources to this endeavor. To further analyze the role of the board, however, we would require a more finely grained measure of environmental impact than is portrayed by the summary environmental impact score. Nonetheless, our results suggest that management's preference for short-term investments is likely unconstrained when the board is entrenched. Environmental risks will be heightened when the corporate governance characteristics of the firm are ineffective in reducing agency costs.

Notably, institutional ownership promotes investment in environmental mitigation, although the coefficient is not significant at conventional levels (significance = 0.054) and the economic impact is relatively minor. This finding is generally consistent with the role that institutional investors have played in the U.S. in demanding greater environmental risk disclosure by firms to the SEC. From a governance standpoint, the presence of influential shareholders may

[18] We estimate this elasticity by assuming all other dependent variables are measured at their mean values except that E-index equals either "1" or "6."

Table 14.5 Environmental impact and corporate governance

Impact		
OLS (no multiple voting shares)		
	b	t
E index	−2.074*	−2.346
Inside own.	−50.58	−0.904
Instit. own.	13.661+	1.933
Size	0.753	0.649
ROA	−8.806	−0.41
FCF	17.023+	1.875
Leverage	−8.177**	−2.945
Significant industry effects present		
Intercept	36.995*	2.444
N	304	
r2	0.516	
F	20.458	
p	0	

We present results of OLS regressions for dependent variable Impact which is the environmental impact score as reported by Newsweek (2009). E Index is the entrenchment index available from Bebchuk et al. (2009). Inside Own. Is the square of the percentage of inside ownership and Instit. Own. Is the square of the percentage of ownership held by institutional investors; as reported by Value Line. Size is the natural log of the book value of assets from Value Line. ROA is return on assets reported by Value Line. FCF is the ratio of free cashflow to sales as reported by Value Line. Leverage is the market value debt equity ratio reported by Value Line. We control for two-digit SIC placement but do not report these coefficients

** Significant at 0.01; * Significant at 0.05, + Significant at 0.10

mitigate some of the undesirable properties of an entrenched board, although, as noted, support for this conjecture is weak. However varying institutional investment from one standard deviation below the mean level of investment to one standard deviation above the mean level, produces a range for the environmental impact score of from 43 to almost 49.[19] Among our control variables (free cashflow, leverage, and industry placement) only leverage is significant at conventional levels, while free cashflow exhibits weak significance. Notably, profitability as measured by ROA is not significant. We investigated whether ROA and Impact might be determined endogenously by carrying out two-stage least squares regression. ROA was instrumented by past growth in earnings per share. The Wu-Hausman test did not detect endogeneity problems and consequently we do not report results from the two-stage least squares analysis.

In Table 14.6 we present results for the relationship between governance and the adoption of green policies. The Green Policy data obtained by Newsweek from KLD, capture both environmental strengths as well as concerns. A higher summary score indicates greater strength in policy issues, for example. The degree of board

[19] Since we use the square of institutional ownership the effect of changing the value of this variable is not linear.

Table 14.6 Green policies and corporate governance

Policy					
OLS (no multiple voting shares)			2SLS (no multiple voting shares)		
	b	t		b	t
			ROA	−289.941**	−2.59
E index	0.017	0.019	E index	−1.058	−0.961
Inside own.	−40.579	−0.739	Inside own.	−90.523	−1.376
Instit own.	−26.703***	−3.852	Instit own.	−36.839***	−3.839
Size	4.027***	3.537	Size	2.112	1.389
ROA	−14.771	−0.702			
FCF	4.695	0.527	FCF	48.478**	2.694
Leverage	−3.414	−1.253	Leverage	−16.972**	−2.854
Significant Industry effects present			Significant industry effects present		
Intercept	15.384	1.036	Intercept	60.887*	2.377
N	304		N	268	
r2	0.199		r2	n/a	
F	4.765		Chi-square	56.75	
p	0		p	0	
			Wu-Hausman	10.321	
			p	0.0015	

We present results of OLS and 2SLS regressions for dependent variables: Environmental Policy. The Green Policy data obtained by Newsweek from KLD, capture both environmental strengths as well as concerns. A higher summary score indicates greater strength in policy issues. E Index is the entrenchment index available from Bebchuk et al. (2009). Inside Own. Is the square of the percentage of inside ownership and Instit. Own. Is the square of the percentage of ownership held by institutional investors; as reported by Value Line. Size is the natural log of the book value of assets from Value Line. ROA is return on assets reported by Value Line. FCF is the ratio of free cashflow to sales as reported by Value Line. Leverage is the market value debt equity ratio reported by Value Line. We control for two-digit SIC placement but do not report these coefficients. Column (1) contains results for OLS estimation and Column (4) contains 2SLS results. For 2SLS, ROA is endogenously determined and is instrumented by the past growth in EPS
*** Significant at 0.0001; ** Significant at 0.01; * Significant at 0.05

entrenchment does not bear on the firm ranking in this category. Curiously, the relationship between institutional ownership and environmental policy strength is negative. When institutional investment lies one standard deviation below its average level, the estimated policy score is 49.6. With institutional investment at one standard deviation above the mean the score falls substantially to 34.8.[20] Thus moving just one standard deviation away from the mean level of institutional investment causes the policy score to vary by 17%, holding all other variables constant at their mean values. While institutional investors have been successful in lobbying the SEC, for example, to mandate fuller environmental disclosure, their

[20] Regressions are estimated at mean values except institutional investment which varies from plus or minus one standard deviation (.21) from the average of .66. Recall that in the regressions the square of institutional investment is used.

impact at the firm level has been different. Anecdotal evidence gathered by *Trucost* (July Trucost 2009b) from interviews with UK equity fund managers suggests that institutional investors do not consider carbon exposure to be a pertinent criterion in firm/sector allocation decisions. The report finds that fund managers' reluctance is tied to short-term horizons and regulatory ambiguity regarding GHG emissions. Recent evidence provided by Khurshed et al. (2011) in a study of UK firms shows that institutional investors are attracted to firms with independent boards but as director ownership rises institutional investors seem to reduce their investment stakes. Their study indicates that UK institutional investors are quite specific in the types of investments considered and pay more attention to board characteristics, firm size, and length of time having listed on the stock exchange than perhaps the strategic decision *Trucost* is looking for.

We note also that for the Policy variable, ROA is endogenous as indicated by the Wu-Hausman test. While entrenchment remains non-significant, when the model is re-estimated with 2SLS, ROA is inversely related to policy performance. It might be that lack of action is anticipated when it comes to implementing policy and more profitable firms avoid undertaking policy initiatives that lead to little concrete actions. Institutional ownership retains the significant negative relationship detected earlier, while free cash flow positively favors policy initiatives and leverage seems to discourage this.

Conclusions

Strategic corporate responses to climate change and environmental challenges have not been the domain of corporate management. Such decisions are often still not seen as profit maximizing in the short run and are generally not consistent with executive incentives. Nevertheless, responses to climate change and its environmental impact may indeed be firm value maximizing. Consequently, these decisions are considered strategic and the responsibility of the corporate board. Thus, climate change and environmental impact decisions can be expected to reflect the nature of a firm's corporate governance.

Based on an analysis of 500 of the largest firms, we show empirically that this is indeed the case. This study documents the significant impact of corporate governance on corporate actions to mitigate adverse climate change and environmental impacts. In particular, our results document that higher exposure to greenhouse gas emissions reduces Tobin's Q but greater expenditure on mitigation efforts significantly enhances Tobin's Q. Interestingly, despite regulatory ambiguity, it appears that the market is beginning to penalize large emitters, while at the same time rewarding firms that undertake concrete mitigation efforts.

Board entrenchment seems to significantly influence environmental impact but not the adoption of environmentally friendly actions that are not backed up by concrete actions. Greater entrenchment coincides with less expenditure on projects that mitigate environmental risk. We find mixed results for the role of institutional

investors as monitors of environmental performance. While they appear somewhat significant in motivating the firm to expend resources on environmental risk mitigation projects (counter-acting the board entrenchment effect), institutional investors seem to detract from strong environmental policy implementation. Greater institutional ownership is consistent with firms having lower scores on environmental policy enactment.

As has been found in previous studies, firms with entrenched boards seem to pursue short-term objectives to the detriment of long-term value maximization. Given the long-term nature of environmental expenditures, our results point to a greater negative environmental impact by poorly governed firms The overall results of this study clearly show that the nature of corporate governance is a very significant factor in corporate responses to mitigate climate change and adverse environmental outcomes.

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Part IV
Ethics and Governance in China

Chapter 15
The Role of Mutual Funds in Deterring Corporate Fraud in China

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Introduction

Since the 1990s there has been a surge in the mutual fund industry across the world. For instance, the total assets of US mutual funds grew from US$1.6 trillion to US $5.5 trillion over the period from 1992 to 1998, while those of European mutual funds grew from US$1.6 trillion to US$2.6 trillion over the same period (Klapper et al. 2004). The mutual fund industry in China emerged in 2000 and has also experienced high growth. For instance, the total net value of Chinese mutual funds increased from US$58.6 billion in 2005 to US$236.3 billion in 2007 (Yuan et al. 2008). Mutual funds offer individual investors both the diversification of investment risk and the expertise to monitor corporate decisions. The latter aspect is especially beneficial to investors in the Chinese capital market, which is characterized by weaker legal enforcement and shareholder protection than in developed countries.

This study examines the effect of mutual fund ownership in reducing corporate fraud activities among listed firms in China. In a high growth and transitional economy like China's, important antecedents of fraudulent managerial behaviors, such as business environment changes and weak corporate governance (e.g. Zahra et al. 2005), are common. Corporate fraud hampers the economic development aspirations of China because they reduce investor confidence and undermine the efficient allocation of financial resources in the capital market. Existing studies of corporate fraud in China pay more attention to internal governance mechanisms (e.g. Chen et al. 2006; Jia et al. 2009). However, the effectiveness of external

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governance mechanisms reflects the degree to which China's capital market has been modernized. Thus, the effectiveness of external governance mechanisms achieved through the capital market, such as mutual fund ownership, in curbing fraudulent corporate behavior in China, is worth studying.

Mutual funds are affected by fraud instigated by the firms in which they invest in two ways. First, the value and performance of mutual funds are reduced by the decline in the share prices of such firms (Hou and Moore 2010). Second, the credibility and reputations of fund managers, in terms of their ability to select stocks, come under question, since individual investors count on their expertise at identifying trustworthy investments. Therefore, a mutual fund has a vested interested in the prevention of fraudulent behavior by the firms in its portfolio. In comparison to individual investors, mutual funds are more capable of monitoring firms as a result of their expertise, and more effective in disciplining firms as a result of the larger number of shares they trade. Studies in developed markets such as the US consistently show the corporate governance benefits of large shareholders. For instance, firms with large shareholders are associated with increased managerial turnover (e.g. Kaplan and Minton 1994) and tighter executive remuneration (e.g. Bertrand and Mullainathan 2001).

However, one possible hindrance to external governance through the capital market is the state control of listed firms in China. Over half of the firms listed on Chinese stock exchanges are controlled by shareholders who are affiliated either to central or local government. State control of listed firms enables the government to influence these firms to carry out social or political agendas. In return, listed firms under state control receive greater financial support, through favorable loans from state banks and government subsidies (e.g. Allen et al. 2005; Chen et al. 2010), than their privately-controlled counterparts. Greater financial support reduces the accountability of state-controlled firms to outside investors in the capital market. On the other hand, since privately-controlled listed firms are more dependent on the capital market for funding, they are more accountable to the scrutiny of outside investors. Empirical studies provide evidence that managerial remuneration is more sensitive to stock return performance (Firth et al. 2006), and the cost of equity is more sensitive to audit quality (Chen et al. 2011), among privately-controlled Chinese listed firms than their state-controlled counterparts. In other words, state control could reduce the effectiveness of mutual fund ownership in curbing corporate fraud in China.

In order to test our assertions, we carry out empirical analyses on a sample of Chinese listed firms, with 10,404 firm-year observations over the period from 2001 to 2008. We obtain enforcement actions against corporate fraud by Chinese listed firms from the China Center for Economic Research (CCER) database. We measure the influence of fund ownership using both open- and closed-end funds. In either case, we consistently observe a significantly negative relationship between corporate fraud propensity and mutual fund ownership. We also observe that this effect is more pronounced among non-state-owned enterprises (NSOEs) than state-owned enterprises (SOEs), which confirms our prediction. These results are robust to

controlling for firm characteristics, governance, and industry, year, and regional effects. Additional tests reveal that open-end funds reduce their ownership after firms are penalized by the regulatory authorities for corporate fraud. This confirms that fund managers utilize share prices to discipline firms for misdemeanors.

These findings have two implications. First, mutual funds contribute to fraud deterrence in transitional economies like China's. Their role as an external governance mechanism is especially crucial in an institutional environment with weaker legal enforcement and shareholder protection. Second, government support for listed firms has an adverse effect on minority shareholders, through the reduction of firms' sensitivity to external monitoring. Therefore, despite some studies suggesting that Chinese SOEs are adapting well to the new market-based economy (e.g. Lin and Germain 2003; Ralston et al. 2006), our findings suggest that state ownership impedes the external governance mechanism.

Our paper is organized as follows. Section "Literature Review and Hypotheses" provides a literature review, institutional background, and hypothesis development. Section "Sample and Methodology" describes our sample and explains our methodologies. Section "Empirical Findings" reports our empirical findings. Section "Conclusion" concludes.

Literature Review and Hypotheses

Corporate Governance Role of Large Shareholders

Corporate governance seeks to address the agency problem that arises from the separation of ownership and control. Due to this separation, the insiders in control of the firm have the opportunity and incentive to expropriate wealth at the expense of outsiders. On the one hand, dispersed ownership leads to a conflict of interest between managers and outside shareholders (e.g. Jensen and Meckling 1976). On the other hand, concentrated ownership induces a conflict between the controlling shareholder and minority shareholders (e.g. La Porta et al. 1999; Claessens et al. 2002). Ownership concentration leads to two opposing effects in corporate governance, namely the incentive alignment effect and the entrenchment effect.

The incentive alignment effect arises when large shareholders and minority shareholders are consistent in their objective of maximizing the market value of the firm. Large shareholders have more resources and expertise with which to monitor managers (e.g. Shleifer and Vishny 1986; Maug 1998; Noe 2002). The following empirical evidence confirms this. McConnell and Servaes (1990) and Del Guercio and Hawkins (1999) observe that institutional ownership is positively related to various measures of firm performance. Bertrand and Mullianathan (2001) and Hartzell and Starks (2003) show that managerial remunerations tend to be tighter among firms with larger shareholders. Kaplan and Minton (1994) and

Kang and Shivdasani (1995) also show that more managerial accountability exists among such firms. Gomes (2000) further argues that ownership concentration also signals reputation-building by controlling owners. Large shareholders in this context would lose more from their firm's decline in market value than they could gain by diverting their firm's cash flow to themselves.

The entrenchment effect of large shareholders is conceptually similar to that of managers with a high degree of ownership. Existing studies (e.g. Morck et al. 1998; Stulz 1998; McConnell and Servaes 1990) document that such managers have a greater incentive to expropriate the wealth of outside shareholders. Shleifer and Vishny (1997) suggest that large shareholders who gain effective control of a firm's management also have greater incentives to pursue their own interests against those of other investors. For instance, Claessens et al. (2002) find that firms' market values decline when the control rights of large shareholders exceed their cash-flow rights. Johnson et al. (2000) show that controlling shareholders engage in "tunneling", transferring both assets and profits out of the firm for their own benefit.

Existing literature documents that mutual funds exert an incentive alignment effect by effectively monitoring corporate management (e.g. Admati et al. 1994). Cornett et al. (2007) show that mutual funds have a positive impact on firm performance, and Morgan et al. (2009) confirm that mutual funds vote more affirmatively for wealth-increasing proposals. Meanwhile, the literature documents that Chinese state shareholders tend to exert an entrenchment effect. Empirical studies have documented the adverse impact of state ownership of Chinese listed firms on share price informativeness (Gul et al. 2010), CEO turnover-to-performance sensitivity (Conyon and He 2008), and CEO pay-to-performance sensitivity (Firth et al. 2006, 2007). Chen et al. (2008) also find improved performance among Chinese listed firms that switch from state to private control. Thus, mutual fund ownership and state ownership of listed firms in China are expected to have opposing effects on curbing fraudulent corporate behavior.

Corporate Fraud in China

The primary regulator of the Chinese stock market is the China Securities Regulatory Commission (CSRC), which serves a similar function to that of the Securities and Exchange Commission (SEC) in the US. Investigations and disciplinary action against corporate fraud are part of the responsibilities of the CSRC. Common corporate fraud instigated by Chinese listed firms includes delayed disclosure, false statements, and embezzlement (e.g. Chen et al. 2005). The CSRC conducts regular reviews, random inspections, and also responds to information and fraud allegations from whistleblowers, such as investors, employees, and the media. If misconduct is confirmed, the enforcement action carried out by the CSRC could range from internal and public criticism to formal criminal prosecution. Although Hou and Moore (2010) show that the severity of regulatory

conditions has increased, the CSRC is still criticized for being influenced by political pressure, since it is a ministry-level commission that answers to the state (e.g. Chen et al. 2005; Liebman and Milhaupt 2008) and is thus ineffective in identifying and prosecuting fraud. However, such issues also arise in the US since the SEC is funded by the US Government; studies (e.g. Correia 2009) have shown that it too is susceptible to political pressure.

The literature on corporate fraud suggests both external and internal antecedents. The former group includes industry culture (e.g. Baucus and Near 1991), industry concentration (e.g. McKendall and Wanger 1997), environmental hostility (e.g. Baucus and Baucus 1997), and environmental dynamism (e.g. Hansen et al. 1996). The latter group includes top management (e.g. Baucus 1994; Ashforth and Anand 2003), board composition (e.g. Dunn 2004) and organizational culture (e.g. McKendall and Wanger 1997). Black (2005) classifies corporate fraud into reactive and opportunistic categories. The former occurs when executives respond to declining firm performance by window dressing financial statements; the latter occurs when they seize an opportunity for further gain by manipulating disclosure.

Szwajkowski (1985) argues that corporate fraud can also be motivated by regulatory pressure and financial need, which seems to be especially relevant in the case of China. Despite the intention of the Chinese authorities to guide equity capital toward well-performing firms, stock exchange listing rules give listed firms the motivation to carry out managerial misconduct. For instance, listing on stock exchanges is only allowed for firms making at least two consecutive years of profit (e.g. Aharony et al. 2000). To stay listed, firms must not make two consecutive years of losses (e.g. Jiang and Wang 2008). Existing listed firms are required to make a minimum of 10% return on equity (ROE) for three consecutive years before they can issue additional shares (e.g. Chen and Yuan 2004). Baucus and Near (1991) also argue that corporate fraud is more likely to exist in a dynamic and rapidly evolving environment. This explanation also applies to China as a transitional economy, characterized by high economic growth and weak legal enforcement and investor protection, which enables managers to exploit the situation opportunistically.

The effect of internal corporate governance in curbing corporate fraud in China has been the focus of the existing literature. Chen et al. (2006) document a lower propensity for corporate fraud among firms with separate persons serving as CEO and chairperson, and those with a higher proportion of non-executive directors. They suggest this implies that CEO duality encourages abuse of managerial power and that independent directors provide a more effective monitoring role. Jia et al. (2009) provide further evidence that the CSRC imposes more severe sanctions for fraud on firms with larger and more active supervisory boards. Hou and Moore (2010) show that residual state ownership in privatized firms holds back corporate governance and permits opportunities for fraudulent conduct. As China seeks to develop and modernize its economy, there is also a need to examine whether corporate fraud can be deterred by external governance mechanisms provided through the capital market, such as mutual fund ownership.

Hypothesis Development

The literature review above highlights two core issues related to our study. First, although the external monitoring effect provided by mutual fund ownership is expected to improve corporate governance among Chinese listed firms, this effect is likely to be offset by state ownership. Second, the antecedents of corporate fraud in China stem largely from institutional factors, and existing studies pay more attention to the impact of internal corporate governance mechanisms. We intersect these issues to examine whether the propensity for corporate fraud among Chinese listed firms is reduced by mutual fund ownership, and whether this effect is moderated by state ownership.

Mutual fund ownership is expected to reduce corporate fraud propensity for many reasons. First, firms associated with corporate fraud are expected to experience a reduction in stock market value, which in turn has a negative impact on the performances of mutual funds that invest in them. Fraud-committing firms also indirectly have a negative impact on the reputations of funds and fund managers that invest in them. As a result of these vested interests, mutual funds have an incentive to scrutinize firms and exert pressure against opportunistic behaviors, such as corporate fraud, that could be destructive to shareholders' wealth. Second, fund managers are sophisticated investors with more expertise and experience than individual investors. As a result, they are more capable of detecting misdemeanors and expropriation by the managers of firms they invest in. Third, as block shareholders, mutual funds have greater voting power and are more effective in influencing share prices than dispersed individual investors. Thus, they are more capable of disciplining firms and deterring them from engaging in fraudulent behavior. Given the aforementioned greater incentives, expertise, and power of mutual funds than those of individual investors, we hypothesize that:

H1: Chinese listed firms with a higher proportion of mutual fund ownership are associated with a lower corporate fraud propensity

The influence of mutual funds in deterring corporate fraud is expected to be more pronounced among firms that are more concerned about the opinions of external investors. The reduction in share value due to the decline in future cash flow expectations and the rise in the discount rate, following corporate fraud, has more of an effect on firms that are more dependent on external capital. Due to less government financial support, Chinese NSOE listed firms are more reliant on the stock market to acquire funding for investment projects and growth opportunities than are their SOE counterparts. As a result, we expect that mutual fund ownership will be more effective in curbing corporate fraud among NSOEs than SOEs and hypothesize that:

H2: The negative relationship between mutual fund ownership and corporate fraud propensity is more pronounced among NSOEs than SOEs in China

Sample and Methodology

Hypothesis Tests

We apply logistic regression analyses based on Eq. 15.1 below to test our predictions in hypotheses H1 and H2:

$$\begin{aligned} Fraud_{i,t} =& \alpha_0 + \alpha_1 Fund_{i,t-1} + \alpha_2 Size_{i,t-1} + \alpha_3 Growth_{i,t-1} \\ &+ \alpha_4 ST_{i,t-1} + \alpha_5 Analyst_{i,t-1} + \alpha_6 OwnCon_{i,t-1} \\ &+ a_7 Duality_{i,t-1} + a_8 Bmeet_{i,t-1} + a_9 Bsize_{i,t-1} \\ &+ \alpha_{10} BIndep_{i,t-1} + a_{11} SBsize_{i,t-1} \\ &+ Industry + Year + Area + \varepsilon_{i,t} \end{aligned} \tag{15.1}$$

$$\begin{aligned} Fraud_{i,t} =& \beta_0 + \beta_1 Fund_{i,t-1} + \beta_2 SOE_{i,t-1} + \beta_3 Fund_{i,t-1} \times SOE_{i,t-1} \\ &+ \beta_4 Size_{i,t-1} + \beta_5 Growth_{i,t-1} + \beta_6 ST_{i,t-1} + \beta_7 Analyst_{i,t-1} \\ &+ \beta_8 OwnCon_{i,t-1} + \beta_9 Duality_{i,t-1} + \beta_{10} Bmeet_{i,t-1} \\ &+ \beta_{11} Bsize_{i,t-1} + \beta_{12} BIndep_{i,t-1} + \beta_{13} SBsize_{i,t-1} \\ &+ Industry + Year + Area + \varepsilon_{i,t} \end{aligned} \tag{15.2}$$

The dependent variable *Fraud* is 1 if the CSRC invoked enforcement actions against the firm for corporate fraud in the current fiscal year and 0 otherwise. All independent variables are measured from the previous fiscal year end. *Fund* is 1 for firms whose ownership by mutual funds is above the 75th percentile of our sample, and 0 otherwise. We proxy *Fund* in three ways: open-end funds, closed-end funds, and the sum of both. *SOE* equals 1 if the firm is state-controlled and 0 otherwise. *Size* is the log of market capitalization which measures firm size. *Growth* is price-to-book ratio, which captures the growth prospects of the firm. *ST* is 1 for firms with two consecutive years of losses, that is those on the verge of special treatment, and 0 otherwise. *Analyst* is the natural logarithm of one plus the number of following analysts. *OwnCon* is the Herfindahl index of the ten largest shareholders in the firm. *Duality* is 1 if the CEO of the firm is also serving as board chairman and 0 otherwise. *Bmeet* is 1 for firms who have more board meetings than the yearly cross-sectional median and 0 otherwise. *Bsize* is 1 for firms whose board size is above the yearly cross-sectional median and 0 otherwise. *Bindep* is 1 for firms whose independent directors as a proportion of the total number of directors is above the yearly cross-sectional median and 0 otherwise. *SBsize* is 1 for firms whose supervisory board is larger than the yearly cross-sectional median and 0 otherwise.

The coefficient α_1 in Eq. 15.1 indicates the relationship between fraud propensity and mutual fund ownership. If $\alpha_1 < 0$ and is statistically significant, this will indicate a negative relationship between the likelihood of corporate fraud in the

Table 15.1 Mutual fund ownership of Chinese listed firms

	Full sample		SOE = 1		SOE = 0	
	Open (%)	Close (%)	Open (%)	Close (%)	Open (%)	Close (%)
2001	0.25	1.03	0.23	0.98	0.38	1.32
2002	0.66	1.16	0.63	1.11	0.80	1.44
2003	1.18	2.27	1.22	2.26	0.98	2.31
2004	2.82	0.80	2.98	0.82	2.37	0.73
2005	3.32	0.99	3.37	1.03	3.18	0.90
2006	4.58	1.02	4.58	1.04	4.57	0.97
2007	7.70	1.18	8.31	1.08	6.53	1.36
2008	8.01	0.90	8.35	0.85	7.43	1.01
Total	4.62	1.05	4.54	1.05	4.84	1.05
Obs.	4,703	6,264	3,379	4,612	1,324	1,652

This table presents the yearly average percentages of shares held by either open- or closed-end funds, among Chinese listed firms with some ownership by these two types of mutual fund over the period 2001–2008. Firms without any ownership by funds are not included. SOE = 1 and SOE = 0 indicate state and privately-controlled listed firms respectively. The data is taken from CSMAR

current year, and the degree of mutual fund influence in the past year, supporting our hypothesis H1. In Eq. 15.2, coefficient β_1 indicates the relationship between fraud propensity and mutual fund ownership among the NSOEs, while the coefficient β_3 indicates the incremental effect among SOEs. If $\beta_1 < 0$ and $\beta_3 > 0$, and both are statistically significant, this will indicate that the negative relationship between the likelihood of corporate fraud in the current year and the degree of mutual fund influence in the past year is more pronounced in NSOEs than SOEs, supporting H2.

Sample Description, Summary Statistics, and Correlation Analyses

To carry out our empirical analyses, we obtain the required archival data from either the China Stock Market and Accounting Research (CSMAR) or the CCER. We identify 409 cases of CSRC enforcement actions against corporate fraud over the 8-year sample period of 2001–2008, for which valid data are available for all of the variables required in our empirical analysis. Firms with and without fund ownership are included in our sample. In total, we end up with 10,404 firm-year observations. This includes 7,296 SOE firm-years and 3,108 NSOE firm-years.

Table 15.1 presents the yearly average percentage of shares held by funds among Chinese listed firms with mutual fund ownership. Prior to 2004, the average ownership level by closed-end funds is greater than that by open-end funds. The data are taken from the mutual fund section of the CSMAR; firms without fund ownership are not included in this table. From 2004 onward, the average ownership level by open-end funds surged and surpassed that by their closed-end counterparts.

Table 15.2 Summary statistics

	Full sample (Obs = 10,404)		*SOE* = 1 (Obs = 7,296)		*SOE* = 0 (Obs = 3,108)			
	Mean	Median	Mean	Median	Mean	Median	Mean difference	
Fraud	0.039	0.000	0.032	0.000	0.057	0.000	−0.025	(6.052)
OpenFund	0.021	0.000	0.021	0.000	0.021	0.000	0.000	(−0.355)
CloseFund	0.006	0.000	0.007	0.000	0.006	0.000	0.001	(−3.192)
TotalFund	0.027	0.001	0.028	0.001	0.026	0.000	0.001	(−1.114)
Size	20.564	20.446	20.654	20.531	20.353	20.249	0.301	(−14.174)
Growth	3.692	2.610	3.496	2.561	4.151	2.758	−0.655	(7.725)
ST	0.082	0.000	0.062	0.000	0.127	0.000	−0.065	(11.176)
Analyst	0.634	0.000	0.632	0.000	0.641	0.000	−0.009	(0.468)
OwnCon	0.207	0.171	0.231	0.206	0.148	0.121	0.083	(−29.544)
Duality	0.010	0.000	0.008	0.000	0.014	0.000	−0.006	(2.785)
BMeet	0.581	1.000	0.602	1.000	0.532	1.000	0.070	(−6.639)
BSize	0.372	0.000	0.407	0.000	0.291	0.000	0.115	(−11.206)
BIndep	0.777	1.000	0.740	1.000	0.865	1.000	−0.125	(14.158)
SBSize	0.899	1.000	0.923	1.000	0.840	1.000	0.083	(−12.907)

This table presents the summary statistics of the variables used in our analysis. Our sample period covers 2001–2008. Firms with and without fund ownership are included in our sample. *SOE* is 1 for firms under state control and 0 for those under private control. *Fraud* equals 1 if enforcement actions against corporate fraud have occurred in the current fiscal year and 0 otherwise. *OpenFund* is 1 for firms with open-end fund ownership above the 75th percentile of our sample, and 0 otherwise. *CloseFund* is 1 for firms with closed-end fund ownership above the 75th percentile of our sample, and 0 otherwise. *TotalFund* is 1 for firms with the sum of open- and closed-end fund ownership above the 75th percentile of our sample, and 0 otherwise. *Size* is firm size measured as log market capitalization. *Growth* is firm growth measured as price-to-book ratio. *ST* equals 1 for firms on the verge of special treatment (i.e. those with 2 consecutive years of losses) and 0 otherwise. *Analyst* is 1 for firms with more analyst reports than the cross-sectional median and 0 otherwise. *OwnCon* is the Herfindahl index of the ten largest shareholders in the firm. *Duality* equals 1 for firms whose CEO also serves as board chairman and 0 otherwise. *BMeet* equals 1 for firms with an above-median number of board meetings and 0 otherwise. *BSize* equals 1 for firms whose board size is above the cross-sectional median and 0 otherwise. *BIndep* equals 1 for firms whose proportion of independent directors is above the cross-sectional median and 0 otherwise. *SBSize* equals 1 for firms whose supervisory board is greater than the cross-sectional median and 0 otherwise

While open-end funds are associated with an upward trend in average ownership level, the proportion of shares held by closed-end funds remains broadly similar across time. Over the entire sample period, the average ownership level by open-end funds is 4.62%, while that of closed-end funds is 1.05%.

Table 15.2 provides the descriptive statistics of the variables used in our empirical analyses. Firms with CSRC enforcement actions against them for corporate fraud (*Fraud*) account for 3.9% of all firm-year observations. In this table, and for all remaining analyses in the paper, our sample includes firms with and without fund ownership. The means that the ownership levels by open- and closed-end funds drop to 2.1 and 0.6% respectively. The average firm size based on market capitalization (*Size*) is over 485 million RMB. On average, the market value of the

firms in our sample is 3.6 times the book value, as indicated by the market-to-book ratio (*Growth*). Around 8% of the observations have made 2 years of consecutive losses and are classified as being on the verge of special treatment (*ST*). Notice that more of the privately-controlled firms are making losses, as indicated by their higher value of *ST*. Loss-making firms have more incentive to window dress their performance to avoid delisting, and this could be a potential explanation of why in our sample there are also more CSRC enforcement actions against privately-controlled firms. By comparing the number of observations in Table 15.2 (10,404) with those in Table 15.1 (4,703), we infer that more than 45% of listed firms in China are owned to some extent by funds.

Table 15.3 provides the correlation analyses of the variables used in our study. *Fraud* has significantly negative correlation with the three fund ownership dummy variables, *OpenFund*, *CloseFund*, and *TotalFund,* which equal 1 for firms with open/close/total fund ownership above the 75th percentile of our sample, and 0 otherwise. Smaller, higher growth, or loss-making firms tend to have more information asymmetry and incentives to instigate corporate fraud. Firms with higher ownership concentration are associated with less corporate fraud, possibly because large block shareholders are more able to discipline firms. The propensity for fraud is lower when the board of directors meets more frequently and when the supervisory board is larger, which is consistent with the idea that the board has an internal governance function. Mutual funds tend to invest in larger, higher growth, or less loss-making firms. They also prefer firms with better internal governance, achieved through more independent boards.

Empirical Findings

Test of Hypotheses H1 and H2

Table 15.4 presents the logistic regression analysis of the relationship between corporate fraud propensity and mutual fund ownership, which is proxied by *OpenFund*. Based on the analysis of the full sample, the coefficient of *OpenFund* in Regression 1 is significantly negative (-0.2323, t-statistic $= -2.64$). This suggests that the likelihood of Chinese listed firms committing fraud in the current year is significantly lower if a greater proportion of their shares were owned by open-end funds in the previous year, which confirms our prediction in hypothesis H1. Turning to Regression 2, notice that the coefficient for *OpenFund* is significantly negative (-0.4341, t-statistic $= -3.13$) while the coefficient of *OpenFund* $\times$ *SOE* is significantly positive (0.2862, t-statistic $= 2.02$). This indicates that the negative relationship between fraud and fund ownership shown in Regression 1 is mainly concentrated in privately-controlled listed firms and is less pronounced in state-controlled listed firms, which confirms our prediction in hypothesis H2. This is further confirmed when we split our sample into state- and

Table 15.3 Correlation analysis

	Fraud	OpenFund	CloseFund	TotalFund	Size	Growth	ST	Analyst	OwnCon	Duality	BMeet	BSize	BIndep	SBSize
Fraud	1													
OpenFund	−0.0646*	1												
CloseFund	−0.0540*	0.4164*	1											
TotalFund	−0.0701*	0.9735*	0.6132*	1										
Size	−0.0809*	0.4778*	0.2694*	0.4816*	1									
Growth	0.0465*	0.1128*	0.0417*	0.1013*	0.1248*	1								
ST	0.1048*	−0.1111*	−0.1217*	−0.1267*	−0.2173*	0.1643*	1							
Analyst	−0.0733*	0.6050*	0.2720*	0.6071*	0.5478*	−0.0544*	−0.1511*	1						
OwnCon	−0.0659*	−0.0577*	0.0233*	−0.0447*	−0.0095	−0.0327*	−0.1146*	−0.0155	1					
Duality	−0.0056	0.0081	0.0074	0.0066	0.0013	0.0292*	0.0219*	−0.0353*	−0.0356*	1				
BMeet	−0.0484*	−0.0309*	0.0018	−0.0251*	−0.0507*	−0.0470*	−0.0500*	−0.0246*	0.0456*	−0.0124	1			
BSize	−0.0091	0.005	0.0269*	0.01	0.0617*	−0.0338*	−0.0440*	−0.1055*	0.0300*	0.0351*	0.0502*	1		
BIndep	−0.0062	0.1304*	−0.0386*	0.1182*	0.0541*	−0.1518*	0.0463*	0.1992*	−0.1307*	−0.0374*	−0.0279*	0.0538*	1	
SBSize	−0.0219*	−0.0013	0.0166	0.0029	0.0637*	−0.0124	−0.0404*	−0.0386*	0.0345*	−0.1354*	−0.0141	0.0539*	0.0227*	1

This table presents the correlation analysis of the variables used in our study. Our sample period covers 2001–2008. Firms with and without fund ownership are included in our sample. *Fraud* equals 1 if enforcement actions against corporate fraud occurred in the current fiscal year and 0 otherwise. *OpenFund* is 1 for firms with open-end fund ownership above the 75th percentile of our sample, and 0 otherwise. *CloseFund* is 1 for firms with closed-end fund ownership above the 75th percentile of our sample, and 0 otherwise. *TotalFund* is 1 for firms with the sum of open- and closed-end fund ownership above the 75th percentile of our sample, and 0 otherwise. *Size* is firm size, measured as log market capitalization. *Growth* is firm growth, measured as price-to-book ratio. *ST* equals 1 for firms on the verge of special treatment (i.e. those with 2 consecutive years of losses) and 0 otherwise. *Analyst* is 1 for firms whose number of analyst reports is above the cross-sectional median and 0 otherwise. *OwnCon* is the Herfindahl index of the ten largest shareholders in the firm. *Duality* equals 1 for firms whose CEO also serves as board chairman and 0 otherwise. *BMeet* equals 1 for firms with an above-median number of board meetings and 0 otherwise. *BSize* equals to 1 for firms whose board size is above the cross-sectional median and 0 otherwise. *BIndep* equals 1 for firms whose proportion of independent directors is above the cross-sectional median and 0 otherwise. *SBSize* equals 1 for firms whose supervisory board is greater than the cross-sectional median and 0 otherwise

*Indicates statistical significance at the 5% level

Table 15.4 Effects of open-end funds on fraud

	Full sample (Obs = 10,404)						*SOE* = 1 (Obs = 7,296)			*SOE* = 0 (Obs = 3,108)		
	Regression 1			Regression 2								
OpenFund	−0.2323	(−2.64)	***	−0.4341	(−3.13)	***	−0.2003	(−1.80)	*	−0.3097	(−1.88)	*
SOE				−0.1859	(−2.78)	***						
OpenFund × *SOE*				0.2862	(2.02)	**						
Size	−0.0767	(−1.57)		−0.0681	(−1.37)		−0.1163	(−1.74)	*	−0.0252	(−0.34)	
Growth	0.0129	(2.21)	**	0.0092	(1.59)		0.0174	(2.06)	**	0.0018	(0.24)	
ST	0.3500	(4.92)	***	0.3519	(4.95)	***	0.3338	(3.42)	***	0.3053	(2.84)	***
Analyst	−0.3170	(−5.79)	***	−0.3218	(−5.77)	***	−0.2317	(−3.20)	***	−0.4522	(−5.10)	***
OwnCon	−1.2597	(−4.87)	***	−1.0770	(−4.09)	***	−0.9732	(−3.22)	***	−1.5068	(−2.56)	***
Duality	−0.1237	(−0.54)		−0.1312	(−0.58)		−0.5364	(−1.46)		0.0812	(0.27)	
BMeet	−0.2353	(−4.82)	***	−0.2287	(−4.64)	***	−0.2170	(−3.40)	***	−0.2726	(−3.27)	***
BSize	−0.0225	(−0.37)		−0.0185	(−0.31)		−0.0111	(−0.14)		−0.1083	(−1.09)	
BIndep	−0.0492	(−0.74)		−0.0599	(−0.89)		−0.0502	(−0.61)		−0.1296	(−1.13)	
SBSize	−0.0845	(−1.06)		−0.0702	(−0.87)		−0.1145	(−1.02)		−0.0420	(−0.37)	
Intercept	1.8478	(1.92)	*	0.9892	(0.95)		2.3236	(1.64)		0.8283	(0.51)	
Year effect	Yes			Yes			Yes			Yes		
Industry effect	Yes			Yes			Yes			Yes		
Region effect	Yes			Yes			Yes			Yes		
Pseudo R^2	0.1269			0.1293			0.1173			0.1724		

This table presents the logistic regression analysis of the relationship between corporate fraud propensity and open-end fund ownership. Our sample period covers 2001–2008. Firms with and without fund ownership are included in our sample. The dependent variable *Fraud* equals 1 if enforcement actions against corporate fraud occurred in the current fiscal year and 0 otherwise. *OpenFund* is 1 for firms with open-end fund ownership above the 75th percentile of our sample, and 0 otherwise. *SOE* is 1 for state-controlled firms and 0 for privately-controlled firms. *Size* is firm size, measured as log market capitalization. *Growth* is firm growth, measured as price-to-book ratio. *ST* equals 1 for firms on the verge of special treatment (i.e. those with 2 consecutive years of losses) and 0 otherwise. *Analyst* is 1 for firms with more analyst reports than the cross-sectional median and 0 otherwise. *OwnCon* is the Herfindahl index of the ten largest shareholders in the firm. *Duality* equals 1 for firms whose CEO also serves as board chairman and 0 otherwise. *BMeet* equals 1 for firms with an above-median number of board meetings and 0 otherwise. *BSize* equals 1 for firms with board size above the cross-sectional median and 0 otherwise. *BIndep* equals 1 for firms whose proportion of independent directors is above the cross-sectional median and 0 otherwise. *SBSize* equals 1 for firms whose supervisory boards are larger than the cross-sectional median and 0 otherwise. Our t-statistics are adjusted for heteroskedasticity

*, **, *** indicate 10, 5, and 1 % levels of significance respectively

privately-controlled listed firms and conduct the analyses separately. We obtain a significantly negative coefficient for *OpenFund* in both groups but with a greater magnitude in the latter (−0.3097, t-statistic = −1.88) than the former (−0.2003, t-statistic = −1.08). Our findings in Table 15.4 are robust to controls for firm characteristics, analyst following, corporate governance, and year, industry, and region effects.

To provide further robustness to our findings, Tables 15.5 and 15.6 replicate the analyses in Table 15.4 by proxying mutual fund ownership with closed-end funds (*CloseFund*) and total funds (*TotalFund*) respectively. In Regression 1 of the full sample analysis, the coefficient of *CloseFund* (−0.2529, t-statistic = −3.28) in Table 15.5 and that of *TotalFund* (−0.2396, t-statistic = −3.23) in Table 15.6 are both significantly negative. This suggests a negative relationship between current-year fraud and previous-year fund ownership, which is consistent with the findings in Table 15.4 and supports our prediction in hypothesis H1. In Regression 2 of the full sample analysis shown in Table 15.5, the coefficient of *CloseFund* is significantly negative (−0.4722, t-statistic = −3.13), while that of *CloseFund* × *SOE* is significantly positive (0.2912, t-statistic = 1.66). In Regression 2 of the full sample analysis shown in Table 15.6, the coefficient of *TotalFund* is significantly negative (−0.2396, t-statistic = −3.23), while that of *TotalFund* × *SOE* is significantly positive (0.3387, t-statistic = 1.85). These findings consistently show that the deterrence of fraud by mutual funds is more effective among NSOEs than SOEs, which is in line with the result in Table 15.4 and supports our prediction in hypothesis H2. In the split sample analyses shown in Table 15.5, the coefficient of *CloseFund* is significantly negative among both state-controlled (−0.2154, t-statistic = −2.25) and privately-controlled (−0.4260, t-statistic = −2.77) firms. In the split sample analyses shown in Table 15.6, the coefficient of *TotalFund* is also significantly negative for both groups (state-controlled: –0.1823, t-statistic = −2.03; privately-controlled: –0.4780, t-statistic = −2.98). Thus, in the split sample analyses of both Tables 15.5 and 15.6, we observe that the magnitude of the coefficient of the mutual fund variable is nearly twice as large in the privately-controlled group than the state-controlled group.

Additional Tests

As we mentioned in earlier, mutual funds are block shareholders with greater power than dispersed individual shareholders in terms of voting rights and the ability to use the share price to discipline firms. If mutual funds indeed seek to discipline firms against fraudulent behavior through the share price, then we would expect to observe a reduction in ownership by funds after firms have committed corporate fraud. Table 15.7 shows the results of such analysis. We regress the change in mutual fund ownership on a dummy variable *LagFraud*, which is 1 if the firm is associated with CSRC enforcement actions in the last year and 0 otherwise. Notice that we obtain a negative coefficient for this variable, for both open- and closed-end funds, although it is significant only in the former type. Thus, we have evidence that

Table 15.5 Effects of closed-end funds on fraud

	Full Sample (Obs = 10,404)											
	Regression 1			Regression 2			*SOE* = 1 (Obs = 7,296)			*SOE* = 0 (Obs = 3,108)		
CloseFund	−0.2529	(−3.28)	***	−0.4722	(−3.13)	***	−0.2154	(−2.25)	**	−0.4260	(−2.77)	***
SOE				−0.1685	(−2.60)	***						
CloseFund × *SOE*				0.2912	(1.660)	*						
Size	−0.0744	(−1.52)		−0.0663	(−1.32)		−0.1154	(−1.71)	*	−0.0159	(−0.22)	
Growth	0.0129	(2.19)	**	0.0089	(1.54)		0.0174	(2.06)	**	0.0016	(0.22)	
ST	0.3450	(4.84)	***	0.3484	(4.89)	***	0.3299	(3.39)	***	0.3011	(2.79)	***
Analyst	−0.3171	(−5.86)	***	−0.3195	(−5.82)	***	−0.2325	(−3.28)	***	−0.4394	(−5.00)	***
OwnCon	−1.2690	(−4.90)	***	−1.0766	(−4.09)	***	−0.9790	(−3.23)	***	−1.4980	(−2.57)	**
Duality	−0.1216	(−0.53)		−0.1219	(−0.53)		−0.5355	(−1.45)		0.0895	(0.29)	
BMeet	−0.2365	(−4.84)	***	−0.2298	(−4.67)	***	−0.2181	(−3.42)	***	−0.2728	(−3.25)	***
BSize	−0.0202	(−0.34)		−0.0183	(−0.30)		−0.0078	(−0.10)		−0.1037	(−1.04)	
BIndep	−0.0496	(−0.75)		−0.0642	(−0.95)		−0.0484	(−0.59)		−0.1349	(−1.19)	
SBSize	−0.0842	(−1.05)		−0.0730	(−0.91)		−0.1110	(−0.99)		−0.0548	(−0.48)	
Intercept	1.4922	(1.58)		1.0172	(0.93)		1.9573	(1.37)		0.4231	(0.26)	
Year effect	Yes			Yes			Yes			Yes		
Industry effect	Yes			Yes			Yes			Yes		
Region effect	Yes			Yes			Yes			Yes		
Pseudo R^2	0.1278			0.1301			0.118			0.1751		

This table presents the logistic regression analysis of the relationship between corporate fraud propensity and closed-end fund ownership. Our sample period covers 2001–2008. Firms with and without fund ownership are included in our sample. The dependent variable *Fraud* equals 1 if enforcement actions against corporate fraud occurred in the current fiscal year and 0 otherwise. *CloseFund* is 1 for firms with close-end fund ownership above the 75th percentile of our sample, and 0 otherwise. *SOE* is 1 for state-controlled firms and 0 for privately-controlled firms. *Size* is firm size, measured as log market capitalization. *Growth* is firm growth, measured as price-to-book ratio. *ST* equals 1 for firms on the verge of special treatment (i.e. those with 2 consecutive years of losses) and 0 otherwise. *Analyst* is 1 for firms with more analyst reports than the cross-sectional median and 0 otherwise. *OwnCon* is the Herfindahl index of the ten largest shareholders in the firm. *Duality* equals 1 for firms whose CEO also serves as board chairman and 0 otherwise. *BMeet* equals 1 for firms with an above-median number of board meetings and 0 otherwise. *Bsize* equals to 1 for firms whose board is larger than the cross-sectional median and 0 otherwise. *Bindep* equals 1 for firms whose proportion of independent directors is above the cross-sectional median and 0 otherwise. *SBSize* equals 1 for firms whose supervisory board is larger than the cross-sectional median and 0 otherwise. Our t-statistics are adjusted for heteroskedasticity

*, **, *** indicate 10, 5, and 1 % levels of significance respectively

Table 15.6 Effects of total mutual funds on fraud

	Full Sample (Obs = 10,404)											
	Regression 1			Regression 2			SOE (Obs = 7,296)			NSOE (Obs = 3,108)		
TotalFund	−0.2396	(−3.23)	***	−0.4363	(−2.77)	***	−0.1823	(−2.03)	**	−0.4780	(−2.98)	***
SOE				−0.1569	(−2.39)	***						
TotalFund × *SOE*				0.3387	(1.85)	*						
Size	−0.0725	(−1.50)		−0.1408	(−3.75)	***	−0.1153	(−1.74)	*	−0.0110	(−0.15)	
Growth	0.0129	(2.19)	**	0.0063	(1.16)		0.0174	(2.05)	**	0.0015	(0.21)	
ST	0.3480	(4.89)	***	0.3008	(4.40)	***	0.3318	(3.40)	***	0.3060	(2.84)	***
Analyst	−0.3154	(−5.84)	***	−0.3284	(−6.10)	***	−0.2345	(−3.30)	***	−0.4238	(−4.90)	***
OwnCon	−1.2652	(−4.89)	***	−1.0341	(−4.06)	***	−0.9767	(−3.23)	***	−1.5225	(−2.60)	***
Duality	−0.1191	(−0.52)		−0.1222	(−0.54)		−0.5311	(−1.45)		0.0848	(0.28)	
BMeet	−0.2368	(−4.84)	***	−0.2393	(−4.83)	***	−0.2190	(−3.42)	***	−0.2712	(−3.23)	***
BSize	−0.0232	(−0.39)		−0.0057	(−0.09)		−0.0116	(−0.15)		−0.1041	(−1.05)	
BIndep	−0.0497	(−0.75)		−0.0843	(−1.38)		−0.0492	(−0.60)		−0.1308	(−1.14)	
SBSize	−0.0846	(−1.06)		−0.0459	(−0.57)		−0.1143	(−1.01)		−0.0501	(−0.44)	
Year effect	1.4560	(1.57)		2.6629	(3.47)	***	1.5493	(1.05)		0.3349	(0.21)	
Industry effect	Yes			Yes			Yes			Yes		
Region effect	Yes			Yes			Yes			Yes		
Region	Yes			Yes			Yes			Yes		
Pseudo R^2	0.1275			0.1261			0.1174			0.176		

This table presents the logistic regression analysis of the relationship between corporate fraud propensity and total mutual fund ownership. Our sample period covers 2001–2008. Firms with and without fund ownership are included in our sample. The dependent variable *Fraud* equals 1 if enforcement actions against corporate fraud occurred in the current fiscal year and 0 otherwise. *TotalFund* is 1 for firms with total mutual fund ownership (i.e. sum of both open- and closed-end funds) above the 75th percentile of our sample, and 0 otherwise. *SOE* is 1 for state-controlled firms and 0 for privately-controlled firms. *Size* is firm size, measured as log market capitalization. *Growth* is firm growth, measured as price-to-book ratio. *ST* equals 1 for firms on the verge of special treatment (i.e. those with 2 consecutive years of losses) and 0 otherwise. *Analyst* is 1 for firms with more analyst reports than the cross-sectional median and 0 otherwise. *OwnCon* is the Herfindahl index of the ten largest shareholders in the firm. *Duality* equals 1 for firms whose CEO also serves as board chairman and 0 otherwise. *BMeet* equals 1 for firms with an above-median number of board meetings and 0 otherwise. *Bsize* equals to 1 for firms whose boards are larger than the cross-sectional median and 0 otherwise. *Bindep* equals 1 for firms whose proportion of independent directors is above the cross-sectional median and 0 otherwise. *SBSize* equals 1 for firms whose supervisory boards are larger than the cross-sectional median and 0 otherwise. Our t-statistics are adjusted for heteroskedasticity

*, **, *** indicate 10, 5, and 1 % levels of significance respectively

Table 15.7 Changes in mutual fund ownership following fraud

	Open fund			Closed fund			Total fund		
LagFraud	−0.0015	(−1.69)	*	−0.0003	(−0.77)		−0.0018	(−1.67)	*
SOE	0.0014	(1.80)	*	0.0001	(0.53)		0.0016	(1.72)	*
Size	−0.0014	(−2.95)	***	−0.0005	(−3.36)	***	−0.0019	(−3.62)	***
Growth	−0.0004	(−4.7)	***	−0.0001	(−3.83)	***	−0.0004	(−5.11)	***
ST	−0.0022	(−3.44)	***	−0.0002	(−1.13)		−0.0024	(−3.24)	***
Analyst	0.0086	(10.15)	***	−0.0030	(−11.4)	***	0.0057	(6.08)	***
OwnCon	−0.0091	(−3.59)	***	0.0040	(5.61)	***	−0.0050	(−1.78)	*
Duality	−0.0019	(−0.80)		0.0002	(0.21)		−0.0017	(−0.7)	
BMeet	−0.0016	(−2.01)	**	0.0003	(0.99)		−0.0013	(−1.45)	
BSize	−0.0002	(−0.29)		0.0003	(1.4)		0.0001	(0.14)	
BIndep	0.0007	(1.04)		0.0008	(2.38)	***	0.0014	(1.81)	*
SBSize	−0.0012	(−1.01)		0.0005	(1.11)		−0.0008	(−0.56)	
Intercept	0.0355	(3.60)	***	0.0094	(3.07)	***	0.0448	(4.08)	***
Adj R^2	0.0316			0.0304			0.0116		
Obs.	8,982			8982			8,982		

This table presents the regression analysis of the relationship between changes in fund ownership and lagged corporate fraud propensity. Our sample period covers 2001–2008. Firms with and without fund ownership are included in our sample. The dependent variable is the percentage change in mutual fund ownership compared to the previous year. *LagFraud* equals 1 if enforcement actions against corporate fraud occurred in the current fiscal year and 0 otherwise. *SOE* is 1 for state-controlled firms and 0 for privately-controlled firms. *Size* is firm size, measured as log market capitalization. *Growth* is firm growth, measured as price-to-book ratio. *ST* equals 1 for firms on the verge of special treatment (i.e. those with 2 consecutive years of losses) and 0 otherwise. *Analyst* is 1 for firms with more analyst reports than the cross-sectional median and 0 otherwise. *OwnCon* is ownership concentration, measured by the Herfindahl index and based on the ownership held by the ten largest shareholders in the firm. *Duality* equals 1 for firms whose CEOs also serve as board chairmen and 0 otherwise. *BMeet* equals 1 for firms with an above-median number of board meetings and 0 otherwise. *Bsize* equals to 1 for firms whose board size is above the cross-sectional median and 0 otherwise. *Bindep* equals 1 for firms whose proportion of independent directors is above the cross-sectional median and 0 otherwise. *SBSize* equals 1 for firms whose supervisory boards are larger than the cross-sectional median and 0 otherwise. Our t-statistics are adjusted for heteroskedasticity

*, **, *** indicate 10, 5, and 1 % levels of significance respectively

open-end funds significantly reduce their ownership of firms after they have committed corporate fraud. As indicated in Table 15.1, the average percentage of ownership by open-end funds (4.62%) is higher than that by closed-end funds (1.05%). This higher level of ownership may be the reason why open-end funds are more active in adjusting their shareholdings after corporate fraud.

Conclusion

Political connections and government support have been portrayed by the existing literature as beneficial to Chinese listed firms in several ways, namely through giving competitive advantages (e.g. Tsang 1998), market benefits (e.g. Davies et al.

1995), and improving firm performance (e.g. Nee 1992; Peng and Luo 2000). These benefits exist because political connections facilitate business in an uncertain environment (Atuanene-Gima and Li 2002), are a substitute for insufficient institutional infrastructure (Xin and Pearce 1996), and provide flexible resource allocation in a factor-mobility-constrained environment (Lou 2003).

However, our study reveals that there is a negative side to government support of listed firms. We show that it reduces the external monitoring effects exerted by mutual funds to deter corporate fraud. Since state-controlled listed firms receive government financial support, they are less dependent on the capital market and therefore more insulated from monitoring by external stakeholders. Thus, although managerial political connections could benefit firms in a transitional economy, they incur agency costs for minority shareholders.

Corporate fraud undermines the confidence of external investors in the capital market, which serves economic development and growth by providing the efficient allocation of financial resources. Over the past decade, experiences in developed countries have confirmed the importance of corporate governance to the well-being of the capital market and the wider economy. Improving external governance mechanisms through sources such as mutual funds could encourage investors and improve financial market liquidity. Our study seeks to identify a potential problem, so as to enable regulators to develop remedies that are suitable for China's capital market development.

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Chapter 16
Institutional Shareholders and Executive Compensation: An Ethical View

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Introduction

Mr. Levitt, the former Chairman of the SEC, commented that executive compensation in publicly listed companies could be the only issue that "engages the public today about the business community" (Levitt 2005, p. 41). A typical CEO's compensation was more than 400 times the compensation of an ordinary worker at the beginning of the twenty-first century (Lansing and Knoedgen 2007). The perception that executives are over-paid has attracted both academics and regulators to search for an effective and efficient way of curbing executive compensation (e.g. Hartzell and Starks 2003; Perel 2003; Ashley and Yang 2004; Persons 2006; Angel and McCabe 2008), and corporate governance mechanisms have been singled out as an effective tool for combating excessive executive compensation. For example, prior studies have found that board independence and ownership structure, among other factors, are able to curb executive compensation (e.g., Boyd 1994; Elston and Goldberg 2003). Matsumura and Shin (2005) suggested that increasing institutional investor involvement in corporate governance and expensing stock options in firms' income statements could be used to constrain executive compensation. This study continues to examine the effect of corporate governance on executive compensation in one of the major emerging markets, the Chinese market. Different from prior studies of similar nature, however, this

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study focuses on the governance role that mutual funds play in affecting executive compensation. As mutual funds are newly flourishing in China and becoming one of the largest institutional shareholders, their role in corporate governance in such a market receives little attention.

Corporate governance concerns both mature markets as well as emerging ones and China is no exception. The establishment of capital markets at the beginning of 1990s in China was a milestone event in its economic reform. Since then, the Chinese government and its governing agency, the China Security Regulatory Commission (CSRC), have implemented various governance mechanisms, including a two-tier board system (the board of directors and supervisory boards) and independent directorship. Both governance elements are claimed to be the best governance practice around the world (Shleifer and Vishny 1997), but their ability to effectively function in China's capital markets is open to doubt. Prior studies and surveys indicate that supervisory boards are dysfunctional and that independent directors in some companies are "vase directors" in that they only serve as a decoration in the board room (Xiao et al. 2004; Xi 2006).

As a result, searching for effective governance elements has continued. Supporting the flourishing mutual funds reflects one of CSRC's many efforts in this regard. High profile officials, including the former president of the CSRC, are frequently quoted supporting "unprecedented development of mutual funds" (e.g. Chen 2000; Shen 2000; Yuan et al. 2008). Thanks to the strong regulatory support, the total net value of mutual funds in China exceeded 3,276,232 Million RMB (about US $448.5 billion) as of 2007, accounting for roughly 10% of the total stock market capitalization and 35% of tradable market capitalization in China.[1] Mutual funds were among the top ten tradable shareholders for 45% of Chinese listed companies as of 2006; for those firms, mutual funds held, on average, 13% of the company's total tradable shares.

Chinese authorities hope that by pooling together money from individual investors, mutual funds act as "guardians" of small investors (Davis and Kim 2007). The high expectations that the CSRC has of mutual funds seem well founded, as numerous studies have confirmed that institutional investors, including mutual funds, play a positive governance role in mature markets (Gillan and Starks 2003; Hartzell and Starks 2003; Matsumura and Shin 2005). As the Chinese authorities over-emphasize the positive governance role of mutual funds and acclaim their regulatory effort, however, they seem to neglect the mixed evidence regarding institutional investors' governance role, and downplay the stringent conditions that mutual funds have to meet in order to be effective monitors. Prior research has found that only "independent institutional investors that have maintained large stakes in a firm for at least 1 year (long-term)" will be effective monitors (Chen et al. 2007, p. 281). Our study therefore is the first to shed light on the governance function of China's newly flourishing mutual funds, and examine whether mutual funds do play a constructive governance role as prescribed by the CSRC.

[1] Common stocks in China consist of both tradable shares and non-tradable shares. This is one of the typical features of Chinese markets, and will be further discussed in the next section.

We first analyze the mutual fund industry in general, and our examination leads us to the following observations. First, mutual funds in China are anything but independent. Evidence is increasingly available that mutual fund managers and top management of listed companies have close business ties to each other, and are frequently found to collude for the purpose of manipulating stock prices (Ping and Li 2000; Shi 2008). Second, individual investors, mutual funds, and other tradable shareholders in China are known to have very active trading behaviors and their average holding period is short, possibly shorter than the necessary time frame that mutual funds need to become the effective monitor Finally, despite the fact that mutual funds now are an essential part of Chinese capital markets and the ownership held by mutual funds is ever growing, the existence of dominant shareholders, which is a typical feature of Chinese stock markets, may still make the stake held by mutual funds relatively small, meaning the mutual funds might not have stakes large enough to be the effective monitor. Our analysis leads us to conclude that in China, the mutual fund industry in general fails to meet the three conditions (independence, long term investment, and large enough stakes) to be effective monitors identified in Chen et al. (2007), and therefore, the role played by the mutual fund industry in corporate governance is open to scrutiny.

We then further analyze a particular group of mutual funds, bank-affiliated funds. In China, banks are not permitted to hold equities of listed companies, but they recently established mutual funds, which in turn hold equities. Bank-affiliated funds show different characteristics from mutual funds without bank affiliation. They enjoy informational advantage which results in lower monitoring costs (Almazan et al. 2005), and may have a longer investment horizon than their counterparts without bank affiliation. Banks in Japan are both equity holders and lenders, and prior studies examining this setting provide empirical evidence that banks play a positive governance role, especially in terms of monitoring (e.g. Kaplan and Minton 1994). Therefore, relative to non-bank-affiliated ones, bank-affiliated mutual funds are expected to be a better monitor of executive compensation due to their informational advantage and long-term investment horizons.

Within the group of bank-affiliated mutual funds, we go one step further by differentiating mutual funds affiliated with state-owned banks from those affiliated with joint-equity banks. The government ownership of banks suggests that state-owned banks may pursue their own social and political objectives (Bai et al. 2000), and lack incentives of monitoring (La Porta et al. 2002). Therefore, it is open to doubt that mutual funds affiliated with state-owned banks have as much incentive to monitor portfolio firms as those affiliated with joint-equity banks. Evidence on Chinese banking reform indicates that state-owned banks are the least efficient and less prudential than joint-equity banks (Jia 2009). Therefore, we predict that compared to those affiliated with joint-equity banks, mutual funds controlled by state-owned banks are less effective monitors of executive compensation.

We examine our hypotheses by employing a sample of Chinese listed companies. Accounting and market data are from GTA (GuoTaiAn), and all data regarding mutual funds are hand collected by coding more than 7,000 annual reports. After solving the endogeneity issue of fund involvement and controlling for a variety of

factors, our four-stage models show results consistent with our hypotheses. Hartzell and Starks (2003) document a significantly negative association between mutual fund involvement and executive compensation in the U.S., suggesting a positive governance role of mutual funds. In sharp contrast, we show that mutual fund involvement in China significantly increases executive compensation. Furthermore, we failed to find any difference between mutual funds affiliated with banks and their counterparts without any bank affiliation; among bank-affiliated mutual funds, however, those affiliated with joint-equity banks are better monitors relative to their counterparts controlled by the *Big Four* state-owned banks.

Developing healthy capital markets and reforming economic systems including financial systems are two major challenges faced by less-developed countries. China's unfolding governance reform, in terms of learning and/or borrowing successful governance practices from industrialized countries, reflects the effort of emerging markets as a whole. Our findings that the less-developed macro governance environment (Li et al. 2006), which is the case in almost all emerging economies, may motivate institutional investors to collude with top management of listed companies, rather than to serve as an element of corporate governance, offer important insights to other emerging markets. We also pinpoint the importance of looking into the interaction of institutional environment, governance reform, and business ethics.

Our findings also provide policy implications for jurisdictions where state-owned banks and joint-equity banks co-exist. The lack of governance role played by bank-controlled mutual funds in our study contributes to the existing debate of whether banks, acting as both shareholders and lenders, are better monitors than those institutional investors acting as shareholders only (Gillan and Starks 2003). Furthermore, we find that mutual funds affiliated with joint-equity banks are more likely to curb executive compensation than their counterparts controlled by the Big 4 state-owned banks. This seems to indicate that the recent IPOs of state-owned banks are good signs of the unfolding financial reform in China.

This chapter proceeds as follows. The next section explains corporate governance reform in China, followed by prior studies examining the governance role of institutional investors; hypotheses are then developed. Section "Research Design" presents our research designs, section "Empirical Results" presents empirical tests and results, and the final section concludes.

Governance Reform, Relevant Literature, and Hypothesis Development

Governance Reform in China

The Chinese capital markets were established at the beginning of the 1990s. The relatively short history of Chinese capital markets has seen serious agency problems, including the one between shareholders and management, and the one

between controlling shareholders and small shareholders. The latter problem is one of the major issues, and is associated with the history of Chinese capital markets. Most Chinese listed companies were converted from state-owned enterprises (SOE) under certain conditions, and as a result, several typical features exist. First, most listed firms have dominant shareholders, but their common shares are non-tradable due to historical reasons. The recent reform has touched this non-tradable issue, but lock-up provisions still apply. Second, investors of tradable shares, such as individual investors and mutual funds, used to have little power when it came to firm-level decision making, since the controlling shareholder maintains a dominant stake. The recent regulation by the CSRC has granted significant decision making power to tradable shareholders, as it is ordered that significant decision making at firm level must also obtain approval from tradable shareholders. Thus, mutual funds, which frequently appear among the top ten tradable shareholders of listed companies, have a stage to exert their governance influences. Third, management and employees are allowed to hold common shares, but their stake is minor.

The conflict between management and shareholders has been increasingly serious. Compensation for top management of Chinese listed companies used to be low in the 1990s, but has soared with the progression of compensation reform. For example, the CEO of Ping'An Insurance earned over RMB 66 million in 2007, which is more than $9 million USD. Compared to compensation of ordinary Chinese workers,[2] this is an astonishing number, and has stirred public outcry on curbing excessive executive compensations. Corporate governance reforms are proposed to fulfill this duty.

Listed Chinese companies adopted and implemented two-tier board system when the capital markets were established. Board of directors is the same as those in the North America, while the supervisory board is designed loosely on the German model, and resembles its counterpart in Japan. Different from supervisory board in Germany, supervisory board in China is not responsible for appointing or evaluating top management; instead, it serves as a monitor, as prescribed by the 1993 Corporate Law. The monitoring role played by the supervisory board, however, is not satisfactory (Xiao et al. 2004; Xi 2006).

Independent directorship was then imposed to enhance corporate governance. On December 16, 1997, the CSRC indicated that listed companies may establish independent directors (Clarke 2006). On August 16, 2001, the CSRC issued its guidance on establishing independent directors. According to the guidance, Listed Chinese companies must have at least two independent directors by June 30, 2002, and at least one third of the board of directors by June 30, 2003; among independent directors, at least one should be an accounting professional (Clarke 2006). Despite the effort, the public generally perceives independent directors as "vase directors" (Xi 2006). The recent corporate governance survey conducted by CFA Hong Kong also indicated that respondents perceive little change regarding the effectiveness of independent directors.

[2] According to the People Daily, employees in Chinese urban areas earn, on average, RMB24,932 in 2007. Source: politics.people.com.cn/GB/1027/8375733.html

The development of institutional investors could be considered as another major effort by Chinese authorities to boost corporate governance. The then president of the CSRC, Mr. Xiaochuan Zhou, was quoted as calling for "an unprecedented development of institutional investors" (Chen 2000). Mr. Siwei Cheng, the then vice-chairman of the Standing Committee of National People's Congress, also pointed out that the Chinese authorities would give priority to developing open-end mutual funds (Shen 2000). Articles on successful governance role played by institutional investors in mature markets frequently appear on media, which often have governmental background. The high expectation that Chinese authorities put on institutional investors, especially mutual funds, seems well founded: if institutional investors play a positive governance role in developed countries, they should also be able to act as effective monitors in China's emerging markets, thus improving corporate governance. As explained below, however, Chinese authorities seem to over-emphasize the positive governance role institutional investors play. When authorities try to promote their regulatory efforts, they seem to either deliberately or inadvertently, neglect the fact that not all institutional investors are able or willing to be effective monitors. Furthermore, they seems to neglect the fact that the Chinese capital market is notorious for its fraudulent activities (Jia et al. 2009), and business ethics is a serious concern when the economy is transformed. The collusion between fund managers and top management of the listed companies, as well as the recent case of the toxic milk, which was produced by the biggest companies in the industry, provides supporting evidence that ethical behavior is given little emphasis when business is conducted in China.

Prior Literature on Institutional Investors

Institutional investors are more likely to monitor, since "the large shareholder's increased return from monitoring is sufficient to cover the associated monitoring costs" (Gillan and Starks 2000, p. 279). That is, due to the existence of free riding, small investors are not motivated to monitor, but institutional investors have more incentives to monitor since it is more likely for them to do so in a cost-beneficial way. Prior studies also document that institutional investors are well equipped to exert their influences. As sophisticated investors, institutional investors have superior capacity to collect and process information. For example, institutional investors are found to receive or seek private information and high quality reports from management and analysts, respectively (e.g. Bushee and Goodman 2007; Frankel et al. 2006).

However, institutional investors' willingness and/or ability to serve as monitors depend on several factors, as confirmed by numerous prior studies. First, it seems that only independent institutional investors are able to effectively monitor management. Hartzell and Starks (2003), for example, show that institutional investors curb the level of executive compensation, but Almazan et al. (2005) further elaborate that only independent institutional investors are able to achieve this

goal. Institutional investors that have business ties with management are pressure sensitive (Brickley et al. 1988) and are less likely to vote against management. Second, investment-horizons also affect whether institutional investors are willing to act as monitors. Institutional investors with short-term horizon tend to trade securities to gain personal benefits (e.g. Bushee 1998), rather than to voice. Third, the stake held by institutional investors also influences the effectiveness of monitoring (Chen et al. 2007); those with large stake are more likely to be monitors. Therefore, only "independent institutional investors that have maintained large stakes in a firm for at least 1 year (long-term)" will be effective monitors (Chen et al. 2007, p. 281).

Hypothesis Development

Since prior literature has offered convincing evidence that independence, long-term orientation, and relatively large stake are three conditions that institutional investors have to meet to be effective monitors, we carefully examine the Chinese mutual fund industry to see if the three conditions are met. First, it is an open secret that mutual funds managers have close business ties with top management in Chinese listed companies. It is reported that fund and business managers frequently socialize together, and have a common goal, to manipulate stock prices (Ping and Li 2000; Shi 2008). Second, mutual funds in China usually do not have long-term investment horizons. Poon et al. (1998) show that tradable shareholders in China are frequent traders; the average holding period is as short as 2 months. Ping and Li (2000) provide convincing evidence on the trading behavior of mutual funds. They argue that mutual funds systematically engage in speculative trading, and only trade for short-term gains. Third, as previously mentioned, mutual funds now are playing a crucial role in Chinese stock markets; as of year 2007, the total net value of mutual funds represented 35% of the total market capitalization of tradable shares in China. Compared to controlling shareholders, who hold a dominant stake of non-tradable shares, mutual funds hold a relatively small stake. When combined, we can conclude that mutual funds in China are neither independent nor long-term oriented; their stake is substantial, but is relatively small compared to the dominant shareholders. Thus, we predict that mutual funds in China increase, rather than reduce (e.g. Hartzell and Starks 2003), executive compensation. Our first hypothesis is as follows:

H1: The involvement of mutual funds in listed companies increases executive compensations.

We then examine a particular group of mutual funds, banks. Banks in China are precluded to hold equities, but they recently established mutual funds, which in turn hold equities. Banks are the dominant players in the lending markets, since corporate bonds are not widely adopted. As a result, mutual funds affiliated with banks are direct shareholders yet indirect lenders. Prior literature indicates that mutual

funds affiliated with banks may enjoy informational advantage. This informational advantage is believed to lead to lower monitoring costs if mutual funds decide to voice, rather than speculate (Almazan et al. 2005). Furthermore, the lending activities in China between banks and firms are usually a relationship lending, which usually has a longer-term horizon. Therefore, compared to mutual funds without bank affiliation, those affiliated with banks may have longer-term investment goals. This leads us to believe that compared to mutual funds without bank affiliation, bank-affiliated mutual funds may be a better monitor of executive compensation. Prior studies examining the role of banks in Japan also lend us support; Kaplan and Minton (1994), for example, show that banks acting as both lenders and equity holders serve a positive governance role. Our second hypothesis is developed as follows:

H2: Compared to mutual funds without bank affiliation, the involvement of bank-affiliated mutual funds in listed companies decreases executive compensations.

Within the bank-affiliated mutual funds, we differentiate mutual funds associated with joint-equity banks and those affiliated with state-owned banks; both types of banks co-exist in China. Compared to joint-equity banks, state-owned banks present two distinguishing features. First, they are the least efficient and are less prudential than joint-equity banks (Jia 2009). This feature is also shared by many SOEs. Second, compared to joint-equity banks, state-owned banks pursue a collection of objectives; profit is just one of them. Bai et al. (2000) document that SOEs in China, including state-owned banks, also burden obligations of political and social welfare; when the two objectives conflict, the political and social objective may prevail. As a result, we argue that mutual funds affiliated with state-owned banks may share similar features with their parent banks. Put differently, we believe that compared with mutual funds affiliated with joint-equity banks, those affiliated with state-owned banks are less effective monitors. Our third hypothesis is developed as follows:

H3: Compared to mutual funds affiliated with joint-equity banks, the involvement of state-owned-bank-affiliated mutual funds in listed companies increases executive compensations.

Research Design

Sample

To test the hypotheses proposed above, we adopt a sample which covers the public companies listed in the two stock markets in China from 2001 to 2006. Besides the accounting information, market information, executive compensation information, and general corporate governance information extracted from the datasets formed by GuoTaiAn (GTA), we also include information about the fund involvement

among the ten largest shareholders. The fund-involvement information is published on the annual reports of these publicly listed companies, but is not included in any datasets available from GTA, SINOFIN, or WIND, the three major data providers in China. Therefore, we hand-collected the fund-involvement information and carefully checked the accuracy of the data. In the meantime, we also double check the corporate governance and executive compensation information from the GTA datasets, and corrected it if it was inconsistent with the information published on the annual reports.

There are three major reasons for us to believe the underlying sample is appropriate for testing these hypotheses. First, the sample includes a rich set of information considered by prior research on relevant topics (e.g., Hartzell and Starks 2003; Yuan et al. 2008) with and without Chinese data. Furthermore, compared to those used in previous studies on various aspects on Chinese public companies and Chinese stock markets, this sample covers more updated information from 2001 to 2006. This helps capture the recent changes and improvement in the corporate governance mechanism and the market transparency in China. Second, the information included in this sample is from GTA, whose datasets, together with those available from SINOFIN and WIND, have been widely adopted by previous studies (e.g. Sun and Tong 2003; Jia 2009). Therefore, the quality of these datasets is extensively trusted. With some corrections made by us during the hand-collection process so as to match the information provided by the published annual reports, the accuracy of the information is enhanced. Third, with including the hand-collected information regarding fund involvement, we have built a unique dataset to test the effects of mutual funds on executive compensation, and the paths of these effects as well, after taking into account the interactions among corporate governance characteristics, firm performance, and the activism of institutional shareholders.

Variables and Descriptive Statistics

Dependent Variables

While the sample includes information about executive compensations received by various executive groups and individuals, we focus on two categories of executive compensation information, the total pay received by all members on the board of directors (BoDPay) and the pay received by the Chief Executive Officer (CEOPay). This is mainly because in the Chinese corporate governance system, the board of directors and the CEO are the most powerful ones in making both long-term and short-term decisions. Prior to 2004, the reporting of these two figures was optional, but became a mandatory requirement thereafter. Thus, choosing these two variables also provides us with updated information about executive compensation in detail. Following measures adopted in previous studies, we also use the logarithm of these two variables as the dependent variables.

Independent Variables

We adopt three categories of independent variables, mutual fund-related ones, bank-affiliated mutual fund-related ones, and state-owned-bank-affiliated mutual fund-related ones, and they have step-wise relationship. There are two independent variables in the layer of mutual fund-related variables; the first one is a dummy variable measuring whether there is at least one mutual fund among the ten largest shareholders (Fund), and the second one is a continuous variable measuring the percentage of ownership held by mutual fund(s) among the ten largest shareholders, if there is at least one among them (Fund%).

The two independent variables in the second layer are conditional on the variable Fund in the first layer. If there is at least one mutual fund among the ten largest shareholders, we construct a variable, BankFund, to measure whether the mutual fund(s) is(are) bank-affiliated, and this is also a dummy variable. Another independent variable, BankFund%, measures the percentage of ownership held by bank-affiliated mutual fund(s), if there is at least one bank-affiliated mutual fund(s) among the ten largest shareholders. Similarly, the two independent variables in the third layer are conditional on the variable BankFund in Layer 2. The first of the two variables in Layer 3 is SOBFund, which indicates whether at least one of bank-affiliated mutual fund(s) among the ten largest shareholders is state-owned-bank-affiliated, if the value of BankFund is one. The other variable in third layer, SOBFund%, measures the percentage of ownership held by state-owned-bank-affiliated mutual fund(s) if there is at least one among the ten largest shareholders.

One issue which is worth noting is that all the results about the three dummy variables, Fund, BankFund, and SOBFund, presented in this study are based on tradable shareholders. However, the three continuous variables, Fund%, BankFund%, and SOBFund%, are subject to the number of all common shares so as to reflect the voting rights held by mutual funds. As discussed above, this is mainly due to the special share classes in publicly listed Chinese companies.

Control Variables

Five groups of control variables are taken into consideration by following previous studies, and they are firm performance, ownership structure, corporate governance characteristics, other financial information, and industry and year dummies.

Four variables are included to measure accounting and market performance, and they are return on assets (ROA), earnings (Earn) measured by the net income divided by the total market value of equity at the beginning of a year, annual market return (MR) from changes in stock prices and dividend payments, and Tobin's Q which is the ratio between market and book values.

The ownership structure is characterized by three variables, the percentage of ownership held by the largest shareholder (Largest), the portion of common shares

that are tradable in the stock markets (Tradable), and the percentage of ownership held by government and/or by government-owned organizations (SOE).

Both characteristics of board of directors and features of supervisory board are taken into account in the corporate governance group. These variables include board meeting frequency (BMF), board size (BSize), supervisory board meeting frequency (SBMF), size of supervisory board (SBSize), the portion of board directors who are independent directors (ID), and a dummy variable with a value of one if the board chair and the CEO are the same person and zero otherwise (Duality).

Other financial information includes financial leverage measured by debt-asset ratio (DTA), firm size by the logarithm of firm's total assets (LnTA), total risk taken by shareholders measured by the standard deviation of stock returns (Sigma), and the auditing fee paid by a firm in a year (Audit). According to the industries categorized by the CSRC, we have 12 dummy variables to measure industry effects since there are 13 industries in total. We have also included five dummy variables to measure year effects since our sample covers data from 2001 to 2006.

Methodologies

The main issue addressed in this study is the influence of fund involvement on executive compensation. Due to the interaction among corporate governance, firm performance, and fund involvement, however, we adopt a four-stage model to take into account the influence of corporate governance characteristics on the involvement of mutual funds (Stage 1) and the effects of fund involvement on firm performance (Stage 2 and Stage3).

The first stage is the Logit model for dummy variables (e.g., Fund, BankFund, and SOBFund), or the OLS model for continuous variables (e.g., Fund%, BankFund%, and SOBFund%):

$$\begin{aligned}\text{Fund Variable} = {} & \alpha_0 + \alpha_1 * \text{Firm Performance Variables} \\ & + \alpha_2 * \text{Ownership Structure Variables} \\ & + \alpha_3 * \text{Corporate Governance Variables} \\ & + \alpha_4 * \text{Other Financial Variables} \\ & + \alpha_5 * \text{Industry Dummies} \\ & + \alpha_6 * \text{Year Dummies} + \varepsilon_1. \end{aligned} \tag{16.1}$$

The residual variables, Fund Variable_res, are generated by estimating ε_1.

The second stage is the OLS model with the dependent variable Earn, and it is

$$\begin{aligned}\text{Earn} = {} & \beta_0 + \beta_1 * \text{Fund Variable\_res} \\ & + \beta_2 * \text{Firm Performance Variables} \\ & + \beta_3 * \text{Ownership Structure Variables} \\ & + \beta_4 * \text{Corporate Governance Variables} \\ & + \beta_5 * \text{Other Financial Variables} \\ & + \beta_6 * \text{Industry Dummies} \\ & + \beta_7 * \text{Year Dummies} + \varepsilon_2. \end{aligned} \tag{16.2}$$

The residual variable, Earn_res, is generated by estimating ε_2.

The third stage is the OLS model with the dependent variable Tobin's Q, and it is

$$\begin{aligned}\text{Tobin's Q} = {} & \gamma_0 + \gamma_1 * \text{Earn\_res} \\ & + \gamma_2 * \text{Fund Variable\_res} \\ & + \gamma_3 * \text{Firm Performance Variables} \\ & + \gamma_4 * \text{Ownership Structure Variables} \\ & + \gamma_5 * \text{Corporate Governance Variables} \\ & + \gamma_6 * \text{Other Financial Variables} \\ & + \gamma_7 * \text{Industry Dummies} \\ & + \gamma_8 * \text{Year Dummies} + \varepsilon_3. \end{aligned} \tag{16.3}$$

The residual variable, Tobin's Q_res, is generated by estimating ε_3, and the fitted value, Tobin's Q_fitted, is also estimated.

The main test is conducted by Stage 4 as the following:

$$\begin{aligned}\text{Executive Compensation} = {} & \delta_0 + \delta_1 * \text{Tobin's Q\_res} \\ & + \delta_2 * \text{Earn\_res} + \delta_3 * \text{Fund Variable\_res} \\ & + \delta_4 * \text{Firm Performance Variables} \\ & + \delta_5 * \text{Ownership Structure Variables} \\ & + \delta_6 * \text{Corporate Governance Variables} \\ & + \delta_7 * \text{Other Financial Variables} \\ & + \delta_8 * \text{Industry Dummies} \\ & + \delta_9 * \text{Year Dummies} + \varepsilon_4. \end{aligned} \tag{16.4}$$

The above four-stage model enables us to investigate the fund involvement effect on executive compensation after solving potential endogeneity issues, and we use instrumental variables to stabilize the model. When we study the effects of mutual funds, we use SBSsize, BMF, and ROA as the instrumental variables in the first three stages, respectively. BSize (for BankFund) or Duality (for BankFund%), SBMF, and DTA are the instrumental variables adopted in the first three stages,

respectively. As for the effects of state-owned-bank-affiliated mutual funds on executive compensation, we only consider Stages 2–4 documented above, since no variables, except MR, are found to affect the involvement of state-owned-bank-affiliated mutual funds significantly. MR and Sigma are chosen to be the instrumental variables in Stages 2 and 3, respectively.

To investigate whether fund involvement affects executive compensation through influencing market performance measured by Tobin's Q, in addition, we run additional tests using the following model

$$\begin{aligned}\text{Executive Compensation} &= \theta_0 + \theta_1 * \text{Tobin's Q\_fitted} \\ &+ \theta_2 * \text{Tobin's Q\_res} \\ &+ \theta_3 * \text{Firm Performance Variables} \\ &+ \theta_4 * \text{Ownership Structure Variables} \\ &+ \theta_5 * \text{Corporate Governance Variables} \\ &+ \theta_6 * \text{Other Financial Variables} \\ &+ \theta_7 * \text{Industry Dummies} \\ &+ \theta_8 * \text{Year Dummies} + \varepsilon_5. \end{aligned} \tag{16.5}$$

If the coefficient on the variable Tobin's Q_fitted is significant, it indicates that fund involvement influences executive compensation through affecting firm's market performance. Otherwise, the link between fund involvement and executive compensation is the monitoring function of the former.

Empirical Results

Descriptive Statistics

According to the descriptive statistics presented in Table 16.1, the average total pay received by members on the board of directors was about 774,000 Renminbi, and that of the CEO was about 265,000 Renminbi. 42.9% of the publicly listed companies had at least one mutual fund among their ten largest tradable shareholders, and they held an average of 3.9% of common shares. Among these 42.9% of the companies, 42% of them had at least one bank-affiliated fund among their ten largest tradable shareholders, and they held an average of 1.7% of common shares. Among the companies with bank-affiliated fund(s), 23.2% of them had at least one state-owned-bank-affiliated fund, and they held an average of 1.8% of the common shares. To spare space, we do not repeat the descriptive statistics of control variables, and they are presented at the bottom of Table 16.1.

Table 16.1 Descriptive statistics

Variable	Mean	S.D.	N	Variable	Mean	S.D.	N
Executive compensation variables (in Million Renminbi)							
BoDPay	0.774	1.517	2,679	CEOPay	0.265	0.502	2,667
Fund involvement variables							
Fund	0.429	0.495	5,734	BankFund%	0.017	0.028	794
Fund%	0.039	0.053	2,208	SOBFund	0.232	0.425	801
BankFund	0.420	2.148	2,222	SOBFund%	0.018	0.019	176
Control variables							
ROA	−0.253	21.091	7,654	Earn	0.006	0.123	6,211
MR	−0.167	0.488	7,358	Tobin's Q	2.522	34.381	7,650
DTA	0.069	0.137	7,654	LnTA	21.140	1.015	7,654
Sigma	0.024	0.006	6,987	Audit	0.085	0.278	7,224
Largest	0.413	0.169	7,725	BMF	7.553	3.210	7,683
Tradable	0.415	0.129	7,755	SBMF	3.587	1.690	7,686
SOE	0.606	0.489	7,725	ID	0.283	0.119	7,717
BSize	9.699	2.249	7,724	Duality	0.088	0.283	9,824
SBSize	4.240	1.439	7,724				

The variable BoDPay measures the total pay received by all members on the board of directors, and the variable CEOPay indicates the pay received by the CEO. The variable Fund is a dummy variable measuring whether there is at least one mutual fund among the ten largest shareholders, and Fund% measures the percentage of ownership held by mutual fund(s) among the ten largest shareholders, if there is at least one among them. If there is at least one mutual fund among the ten largest shareholders, the variable BankFund, a dummy variable, measures whether the mutual fund(s) is (are) bank-affiliated. BankFund%, measures the percentage of ownership held by bank-affiliated mutual fund(s), if there is at least one bank-affiliated mutual fund(s) among the ten largest shareholders. The dummy variable SOBFund indicates whether at least one of bank-affiliated mutual fund(s) among the ten largest shareholders is state-owned-bank-affiliated, if the value of BankFund is one. SOBFund%, measures the percentage of ownership held by state-owned-bank-affiliated mutual fund(s) if there is at least one among the ten largest shareholders. Control variables measuring accounting and market performance are return on assets (ROA), earnings (Earn) measured by the net income divided by the total market value of equity at the beginning of a year, annual market return (MR) from changes in stock prices and dividend payments, and Tobin's Q which is the ratio between market and book values. Other financial information includes financial leverage measured by debt-asset ratio (DTA), firm size by the logarithm of firm's total assets (LnTA), total risk taken by shareholders measured by the standard deviation of stock returns (Sigma), and the auditing fee paid by a firm in a year (Audit). The ownership structure is characterized by three variables, the percentage of ownership held by the largest shareholder (Largest), the portion of common shares that are tradable in the stock markets (Tradable), and the percentage of ownership held by government and/or by government-owned organizations (SOE). Features of board of directors and supervisory board are measured by board meeting frequency (BMF), board size (BSize), supervisory board meeting frequency (SBMF), size of supervisory board (SBSize), the portion of board directors who are independent directors (ID), and a dummy variable with a value of one if the board chair and the CEO are the same person and zero otherwise (Duality).

Effects of Fund Involvement on Executive Compensation

According to the empirical results from the four-stage models for testing the effects of fund involvement presented in Tables 16.2 and 16.3, we find that the involvement of mutual funds, as well as the percentage of ownership held by mutual funds among

Table 16.2 Effects of fund involvement on executive compensation: fund

Dep. var.	Fund		Earn		Tobin's Q		Ln(BoDPay)		Ln(CEOPay)	
	Coef.	z	Coef.	t	Coef.	t	Coef.	t	Coef.	t
Tobin's Q_res							0.063***	2.98	0.095***	4.77
Earn_res					0.935***	11.67	0.330***	4.78	0.432***	6.42
Fund_res			0.000***	−5.01	0.000***	−3.02	0.113***	5.99	0.042***	3.60
Largest	1.193***	4.23	0.084***	2.81	0.237	1.64	−0.587***	−3.80	−0.510***	−3.47
Tradable	1.216***	3.34	−0.142***	−3.77	−0.936***	−5.11	0.258	1.41	−0.112	−0.64
SOE	−0.147*	−1.78	0.005	0.57	−0.073*	−1.74	−0.167***	−4.01	−0.143**	−3.61
BSize	−0.016	−0.84	0.002	1.23	0.012	1.28	0.072***	6.94	0.041***	4.16
SBSize	0.062**	2.21								
BMF	−0.017	−1.35	−0.004***	−2.71						
SBMF	0.019	0.81	0.003	1.42	0.016	1.40	0.005	0.45	−0.004	−0.36
ID	−0.532	−0.76	0.032	0.41	−0.535	−1.43	0.289	0.68	0.870**	2.12
Duality	0.060	0.51	−0.008	−0.67	0.138**	2.31	0.244***	3.98	0.208***	3.55
DTA	−0.677*	−1.65	−0.021	−0.67	1.708***	11.18	−0.218	−0.98	−0.428**	−2.04
LnTA	1.196***	19.31	0.064***	12.40	−0.636***	−24.86	0.269***	10.29	0.256***	10.21
Sigma	8.545	1.02	−4.713***	−5.66	−5.060	−1.25	−14.020***	−3.66	−8.205**	−2.28
Audit	−0.002**	−2.19	0.000	−0.18	0.004***	9.29	0.001***	3.94	0.001***	3.86
ROA	10.128***	10.46			−2.069***	−38.98				
MR	1.321***	9.38	0.145***	16.01	0.484***	10.86	0.155**	2.42	0.225***	3.62
Industry Dummies	Yes		Yes		Yes		Yes		Yes	
Year Dummies	Yes		Yes		Yes		Yes		Yes	
Constant	−26.071***	−19.54	−1.143***	−10.20	16.128***	29.16	−2.557***	−4.42	−3.018***	−5.24
N	4,525		4,322		4,322		1,807		1,780	
LR Chi2/*F*-Value	1686.07***		36.77***		105.68***		22.35***		19.95***	
Pseudo/Adjusted R^2	0.272		0.199		0.429		0.268		0.248	

*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$

Table 16.3 Effects of fund involvement on executive compensation: fund%

Dep. var.	Fund%		Earn		Tobin's Q		Ln(BoDPay)		Ln(CEOPay)	
	Coef.	t	Coef.	t	Coef.	t	Coef.	t	Coef.	t
Tobin's Q_res							0.043**	2.00	0.074**	3.57
Earn_res					0.865***	10.75	0.294***	4.27	0.394***	5.85
Fund%_res			0.622***	5.53	5.778***	10.70	3.440***	7.20	3.089***	6.86
Largest	−0.005	−1.31	0.087***	2.83	0.271*	1.84	−0.616***	−3.99	−0.503***	−3.41
Tradable	0.019***	3.69	−0.143***	−3.73	−0.877***	−4.75	0.273	1.49	−0.103	−0.59
SOE	−0.001	−0.54	0.005	0.53	−0.077*	−1.84	−0.176***	−4.20	−0.152***	−3.80
BSize	0.000	1.52	0.002	1.20	0.017*	1.80	0.073***	6.96	0.042***	4.22
SBSize	0.000	−0.78								
BMF	0.000**	2.04	−0.004***	−2.83						
SBMF	0.000	0.81	0.004	1.46	0.012	1.05	0.003	0.26	−0.005	−0.41
ID	0.000	0.64	0.000	0.92	−0.001	−0.45	0.365	0.86	0.968**	2.35
Duality	0.004**	2.22	−0.008	−0.62	0.150**	2.45	0.239***	3.90	0.210***	3.57
DTA	−0.003	−0.59	−0.019	−0.60	1.768***	11.50	−0.227	−1.02	−0.475**	−2.25
LnTA	0.006***	8.29	0.065***	12.22	−0.650***	−24.96	0.267***	10.16	0.258***	10.18
Sigma	−0.037	−0.32	−4.749***	−5.57	−5.178	−1.27	−14.855***	−3.88	−8.466**	−2.35
Audit	0.000***	−3.64	0.000	−0.28	0.004***	9.45	0.001***	4.02	0.001***	3.73
ROA	0.000	−0.33			−2.037***	−38.71				
MR	0.017***	13.20	0.145***	15.73	0.470***	10.51	0.108*	1.68	0.177***	2.81
Industry Dummies	Yes		Yes		Yes		Yes		Yes	
Year Dummies	Yes		Yes		Yes		Yes		Yes	
Constant	−0.135***	−8.72	−1.182***	−10.13	15.635***	27.56	−2.541***	−4.38	−3.074***	−5.29
N	4,312		4,178		4,178		1,784		1,754	
F Value	20.26***		35.59***		108.74***		22.13***		19.94***	
Adjusted R^2	0.125		0.199		0.444		0.269		0.251	

*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$

the ten largest tradable shareholders, significantly increases the earning measured by the ratio between net income and market capitalization, Tobin's Q, and two categories of executive compensation. These results are robust since Stage 1 has taken into account the effects of firm's corporate governance characteristics and financial features on fund involvement.

Tables 16.4 and 16.5 present the empirical results from the four-stage models using independent variables BankFund and BankFund%, respectively. We find that, compared to non-bank-affiliated funds, bank-affiliated funds, as well as the percentage of ownership held by them, tend to significantly decrease the earning, but significantly increase Tobin's Q. More interestingly, they do not affect those two categories of executive compensation received by all members on the board of directors and by the CEO.

Similarly, empirical results presented in Tables 16.6 and 16.7 show that, compared to non-state-owned-bank-affiliated funds, state-owned-bank-affiliated funds, as well the percentage of ownership held by them, tend to increase Tobin's Q without affecting the earning significantly, and increase the executive compensation received by all members on the board of directors and that received by the CEO.

In conclusion, having mutual fund(s) among the ten largest tradable shareholders sends a positive signal to the market, and a higher percentage of ownership held by these funds helps enhance the market performance measured by Tobin's Q. Compared to non-bank-affiliated funds, having bank-affiliated fund(s) among the ten largest tradable shareholders sends a more positive signal to the market, and a higher percentage of ownership held by them also helps further enhance the market performance. Similarly, compared to joint-equity-bank-affiliated ones, the involvement of state-owned-bank-affiliated funds is an even more positive signal which increases market performance. In all three layers of institutional ownership, thus, fund involvement, bank-affiliated fund involvement, and state-owned-bank-affiliated fund involvement improve the market performance.

As for the effects of fund involvement on executive compensation, there are two potential routes for institutional owners to be active; one is to enhance the market performance so as to increase executive compensation, and the other is to monitor the behaviors of executives so as to curb their incomes. To differentiate the former from the latter, we conduct the analysis using Model (5) and present the results in Table 16.8.

Results indicate that when we consider the involvement of all types of mutual funds among the ten largest tradable shareholders, the coefficients on the variable Tobin's Q_fitted are insignificant, which means that fund involvement does not affect executive compensation through influencing firm's market performance. Keep in mind that the coefficients on the variable Fund_res are significantly positive as presented in Table 16.2. Combining these two sets of empirical results, we conclude that fund involvement affects executive compensation through its monitoring function, but unfortunately, this monitoring function is in the favor of executives and majority shareholders since fund involvement does not stop executives from overpaying themselves. In other words, the findings provide indirect evidence

Table 16.4 Effects of bank-affiliated fund involvement on executive compensation: BankFund

Dep. var.	BankFund		Earn		Tobin's Q		Ln(BoDPay)		Ln(CEOPay)	
	Coef.	z	Coef.	t	Coef.	t	Coef.	t	Coef.	t
Tobin's Q_res							0.083*	1.74	0.127***	2.94
Earn_res					−0.228*	−1.85	−0.148	−0.55	−0.359	−1.48
BankFund_res			−0.007**	−2.13	0.047***	3.03	−0.018	−0.62	−0.029	−1.13
Largest	0.451	1.08	0.063**	2.24	0.142	1.14	−0.779***	−3.30	−0.617***	−2.92
Tradable	−0.483	−0.93	−0.301***	−8.77	−1.114***	−7.29	0.431	1.52	−0.084	0.74
SOE	0.004	0.03	−0.007	−0.84	−0.025	−0.70	−0.161**	−2.44	−0.126**	−2.14
BSize	0.059**	2.20								
SBSize	−0.006	−0.16	−0.001	−0.24	0.011	1.02	0.010	0.49	0.015	0.79
BMF	−0.056***	−2.90	−0.001	−0.95	−0.002	−0.40	0.029***	2.87	0.022***	2.68
SBMF	0.007	0.23	0.007***	3.06						
ID	0.077	0.07	0.000	1.35	0.000	0.33	−0.014	−0.02	0.476	0.74
Duality	−0.065	−0.37	0.005	0.38	0.055	1.04	0.163	1.65	0.149*	1.67
DTA	−0.709	−1.20	−0.024	−0.62	−0.924***	−5.29				
LnTA	−0.006	−0.08	0.051***	10.01	−0.269***	−11.83	0.214***	5.31	0.227***	6.26
Sigma	−18.247	−1.62	−3.994***	−5.30	17.058***	5.06	−13.636**	−2.38	−5.738	−1.13
Audit	0.002*	1.84	0.000	0.57	0.001***	3.72	0.001**	2.48	0.001*	1.91
ROA	0.907	0.80			0.253	1.36	3.370***	2.94	3.311***	3.24
MR	0.304	1.60	0.174***	14.67	0.876***	16.32	−0.010	−0.08	0.014	0.13
Industry Dummies	Yes		Yes		Yes		Yes		Yes	
Year Dummies	Yes		Yes		Yes		Yes		Yes	
Constant	−0.691	−0.40	−0.803***	−6.91	7.613***	14.72	−0.505	−0.49	−2.594***	−2.79
N	1,756		1,722		1,722		795		800	
LR Chi2/*F*-Value	110.45***		28.78***		32.96***		6.81***		7.47***	
Pseudo/Adjusted R^2	0.048		0.326		0.365		0.180		0.201	

*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$

Table 16.5 Effects of bank-affiliated fund involvement on executive compensation: BankFund%

Dep. Var.	BankFund%		Earn		Tobin's Q		Ln(BoDPay)		Ln(CEOPay)	
	Coef.	t	Coef.	t	Coef.	t	Coef.	t	Coef.	t
Tobin's Q_res							0.062	1.26	0.115***	2.58
Earn_res					−0.240**	−1.96	−0.134	−0.50	−0.376	−1.54
BankFund%_res			−0.136	−0.73	2.795***	3.41	0.793	0.41	1.130	0.64
Largest	−0.004	−1.06	0.061**	2.17	0.124	1.00	−0.782***	−3.32	−0.603***	−2.85
Tradable	0.001	0.17	−0.301***	−8.71	−1.114***	−7.35	0.466	1.65	−0.062	−0.25
SOE	−0.001	−0.70	−0.007	−0.80	−0.031	−0.85	−0.162**	−2.46	−0.124**	−2.10
BSize	0.000	0.36	0.001	0.76	0.008	1.06	0.065***	4.05	0.032**	2.23
SBSize	−0.001*	−1.79	−0.002	−0.60	0.005	0.42	−0.019	−0.88	−0.002	−0.12
BMF	0.000	−1.36	−0.001	−0.98	−0.003	−0.56	0.028***	2.85	0.022***	2.66
SBMF	0.000	0.86	0.007***	3.04						
ID	0.000	0.12	0.000	1.29	0.000	0.20	0.277	0.39	0.578	0.89
Duality	0.003**	2.03								
DTA	−0.012**	−2.36	−0.021	−0.53	−0.902***	−5.19				
LnTA	−0.001	−1.16	0.050***	9.73	−0.275***	−12.12	0.190***	4.71	0.223***	6.08
Sigma	−0.190*	−1.92	−4.044***	−5.32	16.449***	4.92	−14.402**	−2.51	−6.162	−1.21
Audit	0.000	−0.68	0.000	0.55	0.001***	3.80	0.001**	2.20	0.001	1.64
ROA	0.004	0.76			0.234	1.27	3.387***	2.92	3.462***	3.33
MR	0.004**	2.53	0.174***	14.57	0.862***	16.18	−0.043	−0.35	−0.020	−0.18
Industry Dummies	Yes		Yes		Yes		Yes		Yes	
Year Dummies	Yes		Yes		Yes		Yes		Yes	
Constant	0.023	1.56	−0.872***	−7.58	8.427***	16.74	−1.090	−1.15	−2.689***	−3.09
N	1,727		1,701		1,701		787		790	
F Value	3.60***		27.96***		32.74***		7.30***		7.29***	
Adjusted R^2	0.046		0.322		0.367		0.194		0.198	

*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$

Table 16.6 Effects of SOB-affiliated fund involvement on executive compensation: SOBFund

Dep. Var.	SOBFund		E-L		Tobin's Q		Ln(BoDPay)		Ln(CEOPay)	
	Coef.	z	Coef.	t	Coef.	t	Coef.	t	Coef.	t
Tobin's Q_res							0.019	0.28	0.022	0.35
Earn_res					−3.553***	−13.72	−0.245	−0.55	−0.893**	−2.12
SOBFund_res			−0.014	−1.08	0.197***	3.13	0.227**	2.33	0.178**	1.97
Largest	−0.935	−1.03	0.036	0.87	0.140	0.69	−1.093***	−2.76	−0.755**	−2.05
Tradable	0.125	0.12	−0.319***	−6.28	−0.505**	−2.01	0.338	0.74	−0.234	−0.57
SOE	0.169	0.68	−0.004	−0.30	−0.041	−0.71	−0.157	−1.53	−0.119	−1.24
BSize	−0.009	−0.15	−0.004*	−1.73	0.027**	2.10	0.049**	1.97	0.020	0.87
SBSize	0.012	0.14	0.003	0.95	−0.006	−0.36	0.013	0.35	0.013	0.38
BMF	−0.013	−0.34	−0.002	−1.08	−0.003	−0.32	0.037**	2.07	0.024*	1.65
SBMF	−0.064	−0.88	0.005*	1.66	−0.006	−0.43	−0.025	−0.86	−0.019	−0.69
ID	1.948	0.75	0.113	0.99	−0.856	−1.53	−0.750	−0.66	−0.314	−0.29
Duality	0.201	0.57	−0.008	−0.46	0.092	1.05	0.119	0.78	0.169	1.19
DTA	−0.418	−0.31	0.044	0.73	−0.465	−1.56	−1.239**	−2.18	−0.054	−0.10
LnTA	−0.078	−0.53	0.049***	7.11	−0.171***	−5.09	0.288***	4.81	0.245***	4.40
Sigma	−30.507	−1.32	−2.227**	−2.08	37.731***	7.04				
Audit	0.001	0.45	0.000	0.08	0.000	−1.16	0.000	−0.85	−0.000	−0.78
ROA	−2.110	−0.73	0.185***	10.97	15.158***	21.53	4.321***	3.34	5.084***	4.14
MR	1.461***	2.99								
Industry Dummies	Yes		Yes		Yes		Yes		Yes	
Year Dummies	Yes		Yes		Yes		Yes		Yes	
Constant	1.504	0.43	−0.884***	−5.41	4.817***	6.02	−3.048**	−2.27	−2.765**	−2.16
N	609		614		614		340		339	
LR Chi2/*F*-Value	109.86***		14.66***		25.91***		3.74***		2.89***	
Pseudo/Adjusted R^2	0.171		0.409		0.565		0.195		0.148	

*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$

Table 16.7 Effects of SOB-affiliated fund involvement on executive compensation: SOBFund%

Dep. Var.	SOBFund %		E-L		Tobin's Q		Ln(BoDPay)		Ln(CEOPay)	
	Coef.	t	Coef.	t	Coef.	t	Coef.	t	Coef.	t
Tobin's Q_res							0.023	0.33	0.016	0.24
Earn_res					−3.528***	−13.60	−0.322	−0.72	−0.897**	−2.12
SOBFund%_res			−0.284	−0.60	7.995***	3.49	4.435	1.28	6.271*	1.95
Largest	−0.006*	−1.77	0.035	0.84	0.175	0.87	−0.984**	−2.46	−0.644*	−1.77
Tradable	0.001	0.31	−0.317***	−6.26	−0.528**	−2.12	0.372	0.80	−0.260	−0.63
SOE	0.000	0.34	−0.004	−0.32	−0.039	−0.68	−0.153	−1.48	−0.117	−1.22
BSize	0.000	0.10	−0.004*	−1.69	0.025**	2.01	0.049*	1.92	0.021	0.89
SBSize	0.000	−0.20	0.003	0.96	−0.006	−0.34	0.011	0.30	0.009	0.27
BMF	0.000	−0.12	−0.002	−1.02	−0.004	−0.40	0.035*	1.95	0.023	1.57
SBMF	0.000	−0.52	0.005	1.62	−0.006	−0.38	−0.023	−0.76	−0.013	−0.47
ID	0.005	0.53	0.111	0.97	−0.843	−1.51	−0.696	−0.61	−0.274	−0.26
Duality	0.000	0.29	−0.013	−0.72	0.118	1.33	0.129	0.83	0.210	1.43
DTA	−0.001	−0.21	0.056	0.92	−0.537*	−1.79	−1.205**	−2.09	−0.139	−0.26
LnTA	−0.001	−1.51	0.048***	6.88	−0.160***	−4.73	0.286***	4.73	0.260***	4.57
Sigma	−0.143	−1.50	−2.150**	−2.01	38.020***	7.13				
Audit	0.000	0.10	0.000	0.21	0.000	−1.29	0.000	−0.86	−0.001	−0.93
ROA	0.002	0.23			15.064***	21.40	4.422***	3.37	5.072***	4.12
MR	0.004**	2.56	0.186***	11.00						
Industry Dummies	Yes		Yes		Yes		Yes		Yes	
Year Dummies	Yes		Yes		Yes		Yes		Yes	
Constant	0.024*	1.69	−0.859***	−5.23	4.578***	5.70	−2.454*	−1.74	−3.134**	−2.40
N	616		611		611		339		337	
F Value	3.11***		14.47***		26.06***		3.52***		2.81***	
Adjusted R^2	0.099		0.406		0.568		0.183		0.143	

*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$

Table 16.8 Results from model (5)

	Fund		Fund%		BankFund		BankFund%		SOBFund		SOBFund%	
	Ln (BoDPay)	Ln (CEOPay)	Ln (BoDPay)	Ln (CEOPay)	Ln (BoDPay)	Ln (CEOPay)	Ln (BoDPay)	Ln (CEOPay)	Ln (BoDPay)	Ln (CEOPay)	Ln (BoDPay)	Ln (CEOPay)
Tobin's Q_fitted	0.062	0.046	0.158***	0.133***	0.081	−0.002	0.253	0.240	0.111	0.281***	0.097	0.278***
	(1.42)	(1.10)	(3.99)	(3.52)	(0.28)	(-0.01)	(0.81)	(0.85)	(0.96)	(2.62)	(0.85)	(2.61)
Tobin's Q_res	0.069***	0.087***	0.040*	0.064***	0.092**	0.150***	0.070	0.140***	0.018	0.016	0.021	0.010
	(3.27)	(4.32)	(1.81)	(3.07)	(2.08)	(3.77)	(1.54)	(3.42)	(0.26)	(0.25)	(0.31)	(0.15)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	−3.504***	−3.767***	−5.272***	−5.363***	−1.129	−2.305	−3.199	−4.470*	−3.738**	−4.643***	−2.945*	−4.758***
	(−3.67)	(−4.12)	(−5.84)	(−6.15)	(−0.40)	(−0.90)	(−1.10)	(−1.69)	(−2.35)	(−3.10)	(−1.81)	(−3.16)
N	1,807	1,780	1,784	1,754	795	800	787	790	340	339	339	337
F	20.48***	18.31***	20.51***	17.73***	7.03***	7.57***	7.57***	7.45***	3.65***	2.92***	3.58***	2.83***
Adjusted R^2	0.245	0.226	0.247	0.223	0.181	0.198	0.195	0.197	0.185	0.145	0.181	0.140

*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$

which supports the existence of the collusion between institutional shareholders and executives/major shareholders, and Hypothesis 1 is supported.

When we use the percentage of ownership held by mutual funds among the ten largest tradable shareholders as the measure of fund involvement, however, we find that the coefficients on the variable Tobin's Q_fitted are significantly positive, which means that a higher percentage of ownership held by mutual funds does enhance the executive compensation through increases firm's market performance. As indicated in Table 16.3, percentage of ownership held by mutual funds increases executive compensation, and therefore we cannot differentiate whether this increase is caused by better market performance, by fund's voting with executives, or by both.

If we only consider the involvement of bank-affiliated mutual funds, including that measured by the percentage of ownership held by them, we find that they do not affect executive compensation through market performance since the coefficients on the variable Tobin's Q_fitted are insignificantly. However, recall that, as shown in Tables 16.4 and 16.5, the involvement of these bank-affiliated mutual funds does not affect executive compensation in general, either. The combination of these results tells that compared to other types of mutual funds among the ten largest tradable shareholders, bank-affiliated ones are not better monitors. Thus, Hypothesis 2 is not supported.

Table 16.6 also presents the results from Model (5) by considering the state-owned-bank-affiliated mutual funds only; the results show that while the involvement of state-owned-bank-affiliated funds does not affect the total pay received by all the members on the board of directors through market performance, it does affect the pay received by the CEO. Thus, we are at least able to conclude that the state-owned-bank-affiliated mutual funds do not curb the compensation paid to the board of directors as effectively as their counterparts affiliated with joint equity banks. On the contrary, joint-equity-bank-affiliated funds have done a better job to curb the executives' pay than their counterparts affiliated with state-owned banks have, and therefore, Hypothesis 3 is supported.

Conclusions

Executive compensation has attracted increasing attention from academic researchers and practitioners, especially under the current market environment and financial crisis, and monitoring rooting in board independence and shareholder activism plays an important role in curbing it. In emerging markets, unfortunately, these two factors are not realistic yet, and whether corporate governance mechanisms in these markets are sufficiently efficient in monitoring executive compensation is questionable. While the involvement of institutional shareholders in mature markets has been shown to be able to improve the monitoring role of their corporate governance mechanisms, the effects of increasing ownership held by mutual funds in emerging markets have not been extensively addressed.

This study helps fill in this gap by investigating the monitoring role played by mutual funds in curbing executive compensation using recent data from Chinese stock markets. Employing a four-stage model, we conclude that mutual funds collude with executives and therefore do not behave as monitors, and this confirms the ideas presented in prior research such as Ping and Li (2000) and Shi (2008). However, we find that bank-affiliated mutual funds does not behave better in monitoring and curbing executive compensation than non-bank-affiliated ones, although their parent banks tend to be creditors of the publicly listed companies bank-affiliated mutual funds invest in. Among these bank-affiliated mutual funds, however, joint-equity-bank-affiliated ones perform better in monitoring than state-owned-bank-affiliated ones.

Findings of this study not only add to the literature on the ethical view of monitoring effects of institutional shareholders on executive compensation in emerging markets, but also provide important policy implications for government agents which supervise behaviors of financial institutions, including both banks and mutual funds. They also uncover the dysfuncationality of mutual funds in Chinese capital markets, which in other words, show the collusion between institutional shareholders and executives.

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Chapter 17
Management Buyouts and Board Transformation in China's Transition Economy

Mike Wright, Yao Li, and Louise Scholes

Introduction

Management buyouts (MBOs) involving the acquisition of firms by incumbent managers by who take on financial leverage, often with the involvement of private equity firms (Gilligan and Wright 2010), have become an international phenomenon. Over three decades they have diffused from the US, to Europe and to Asia (Wright et al. 2007). From OECD countries they have also played an important role in the transformation of Central and Eastern Europe (Wright et al. 1994) and more recently have emerged in China (Sun et al. 2010).

This international development has been accompanied by considerable debate about their impact. Evidence from developed economies generally indicates they have a positive economic and social impact, particularly in the first wave of the 1980s although the evidence from the second wave is more mixed (Cumming et al. 2007; Wood and Wright 2010). Yet, the ethics of buyouts have been widely debated (Lowenstein 1985; Bruner and Paine 1988; Houston and Howe 1987; Harris and Brown 1990; Jones and Hunt 1991; Lee 1992). In particular, MBOs may be undertaken to advantage particular groups of stakeholders, notably managers, at the expense of others.

In emerging economies, and especially those transitioning from central planning, MBOs raise serious and controversial ethical issues in contexts where the legal and

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regulatory framework is often weak, enabling management to benefit from short-term income distribution by acquiring assets at undervalued prices (Filatotchev et al. 1994). Rawlsian justice regards justice for the individual as paramount and thus endorses decisions which lead to egalitarian outcomes. Decisions or actions which result in unequal benefits are deemed morally acceptable only if everyone benefits in some way (Rawls 1971). In the case of management buyouts Rawls' standard could be violated if shareholders and stakeholders (e.g. employees) do not benefit from the transaction. Kant also offers a proposition for judging business standards (Velasquez 1982) that focuses on the reasons behind a decision rather than the consequences of it. Of concern here is the willingness to be done to as you would do to others. As Kant states people should not be "manipulated, deceived or otherwise unwillingly exploited to satisfy the self-interest of another." If they are, such as if buyout managers exploit shareholders and stakeholders (e.g. employees) as a result of the buyout, then the reversibility principal has been violated.

In contrast to MBOs in western, developed economies that involve mechanisms to control agency costs (Jensen 1993), MBOs of listed corporations in transition economies rarely involve the pressure to service debt or the role of active private equity investors. Rather they raise distinctive principal-principal-agency problems that arise where dominant shareholders may act against the interests of minority shareholders (Young et al. 2008). In particular, related-party transactions concerning managers as shareholders may involve tunneling, that is the transfer of assets and profits out of firms for the benefit of their controlling shareholders (Chen et al. 2005; Djankov et al. 2008). This has been demonstrated by recent empirical research in the Chinese settings (Jiang et al. 2010; Peng et al. 2011). Related-party transactions in the form of earnings manipulation has been shown to be reduced by improved firm governance (Lo et al. 2010).

Indeed, MBOs became a very controversial issue in 2004 in China and the Ministry of Finance (MOF) stopped the approval of the transfer of shares to management for all state-owned enterprises (SOE). In 2005, the State-owned Assets Supervision and Administration Committee (SASAC), a newly established authority and the owner of state-owned assets, prohibited MBOs of listed SOEs.

There are major countervailing points to these arguments. First, MBOs may be necessary to ensure that restructuring occurs in order to avoid firm failure. Second, specifically in the context of transition economies, the challenge is to enhance enterprise efficiency and performance in areas of the economy that have experienced a persistent dearth of entrepreneurship. Buyouts undertaken by entrepreneurial managers may in these circumstances lead to longer-term personal and systemic benefits. Hence, the problem for transition economies is to balance the economic gains of a move to a more free-market system with the agency risks associated with the behavior of agents in those markets (Filatotchev et al. 1994).

Absent the pressure of debt and the role of private equity firms, boards assume an important place in MBOs in China in achieving this balance. There is therefore a need to assess the extent to which boards in MBOs enable a balance to be achieved between facilitating development of the business while maintaining the interests of other (minority) shareholders. Examining the role of boards in MBOs in China also

provides potentially interesting insights into the general role of this important governance mechanism in a context removed from the developed Western markets where buyouts emerged that help in understanding the applicability of this concept. Specifically, we examine the following research questions:

Q1: What are the general characteristics of boards after the buyout?
Q2: To what extent are boards of directors in Chinese MBOs changed to bring in outside directors with the skills to grow and restructure a business as well as monitoring management?
Q3: What changes occur in the functioning of boards after an MBO in terms of meeting frequency, the issues addressed by outside directors and the extent to which they challenge executives?

We examine these research questions through a detailed analysis of the nature and behavior of boards in 19 MBOs of listed Chinese corporations compared with a matched sample of 19 non-MBOs and with the population of listed corporations.

The Context of Chinese MBOs

Unlike the big-bang mass/voucher privatization approach adopted by a number of CEE countries (Wright et al. 2005), the Chinese government, consistent with its gradualist and evolutionary reform strategy, has explicitly pursued a '2-R' policy since 1999 (Liu and Sun 2005), that is *retain* government control of large and medium-sized SOEs that operate in strategic industries and *retreat* from state control of small and medium sized enterprises that operate in highly competitive markets.

With regard to large SOEs, corporatization and stock market flotation are the key measures used to transform these firms into modern businesses while maintaining controlling state shares. The stock market is operated, regulated and legislated by the state, and raises funds for the benefit of the state by selling shares in enterprises owned by the state (Walter and Howie 2003). This government-controlled regulatory framework contrasts markedly with the administratively independent regulatory bodies in the US and UK. The state monopolizes access to equity finance since it has the final say in which firm is qualified to raise equity funds through initial public offerings (IPO). Another distinct feature of Chinese public corporations is the significant constraint on the tradability of corporate stocks, among which nearly two-thirds, mostly in government hands, cannot be freely traded on the equity market.

Non-tradable does not necessarily mean non-transferable but, crucially, after transfer these shares still remain non-tradable on the market. Various state agencies that act as owners of state and legal person shares can elect to dilute their non-tradable shareholdings through the off-stock-exchange avenue, subject to approval by their government departments and final endorsement at the central government level. This can be a very time-consuming process taking about 1 year, and there is

no guarantee that the initial share block transaction would not be overturned by the higher layers of governments.

From September 2005 the administration and supervision authorities formally started 'the non-tradable share reform', completed by the end of 2007. Non-tradable shareholders were thus required to pay a compensation package to those holding tradable shares after active communication with them.

Since all MBOs involving listed companies happened before the end of 2003, mostly in 2001 or 2002, management received non-tradable shares. As there is no market price for these non-tradable shares, the transfer price is determined by a bargaining process between sellers and potential buyers. Whether these MBO attempts succeeded or failed has been characterized as a bargaining and alliance process between entrepreneurs and politicians (Sun et al. 2010). In practice, the price is far lower than that of the tradable counterpart, and at or only a little higher than the net assets per share. For the state-owned shares, the net asset per share is the base valuation. However, for some township-village-owned shares, the price is below the net asset per share. In the buyout process there are virtually no other potential buyers except management. The incumbent management is both the buyer and the representative of the sellers.

For some MBO companies, in their early stages of development, subject to the institutional barriers, the firms have taken on the collective form of ownership, as township-village collective-owned, TVE (such as Midea Electrics, Hongdou Clothing, Yongding Cable etc.) or as urban-street collective-owned enterprises, USE (such as Shanshan Clothing, Tebian Electric Apparatus). In both types one or several core entrepreneurs essentially founded the enterprises. They invested their money as capital (or borrowed money from the local government and repaid it later), possessed managerial or technical capabilities (in several MBO companies the founders owned critical technical patents and know-how), which were vital for the survival and later prosperity of the enterprises.

However, these founders were not the owners in the legal sense. When these firms went public on the stock market, the largest shareholder was the local government (the firms were TVE, or USE) or even the state (the firms were SOE). These firms were referred to as "wearing the Red Hat". With this Red Hat, the enterprises received protection from political harassment; otherwise they could not have survived. Apart from the primary and essential political protection, the Red Hat also provided many practical, scarce and precious resources and privileges. They acquired, mostly freely or cheaply, natural monopoly resources, land, "soft" loans from state-owned banks, independent export–import rights and foreign exchange quotas. The enterprises would have lost all of these privileges without their Red Hat status. These companies had good relationships with the local government or town-village government without whose powerful support it would not have been possible to obtain access to the equity markets.

In addition to collective-owned TVEs and USEs the other kind of MBO companies were state-owned before the buyout i.e. SOEs. These SOEs are not in traditionally monopolized strategic industries and are peripheral for the government and received little support, before the powerful and enterprising management entered. At this point

the incumbent management team saved the SOEs on the verge of bankruptcy and operated the firms for many years in the early stage of China's reform. These firms were turned around and became relatively competitive. However, management did not receive any shares as compensation, and their salaries and bonuses were only at moderate levels.

In these competitive, mainly manufacturing industries, a large number of other state-owned or collective-owned enterprises, which enjoyed the same or even more exclusive privileges, were less profitable or even eventually went bankrupt. Therefore, in the early 20 years of reform the core management teams' capabilities and creativities were central to the enterprises' success. In the early twenty-first century, with the progress of the Chinese reform program, the privilege rights of state-owned or collective-owned enterprises have gradually disappeared. In competitive industries all factors of production can be traded on the market and have prices determined by the market. The state-owned, collective-owned or the private enterprises in these industries can compete almost equally to get bank loans, have the independent import/export rights and obtain resources such as land.

By the end of the 1990s the Red Hat was no longer a stimulus but rather an obstacle to the further development of enterprises. Decision-making mechanisms, corporate strategy, salary and incentive mechanisms, and so on were all market-oriented in their private counterparts in the same industries. The public nature of the firms was accompanied by the local or town-village government's bureaucratic decision making system and its intervention in daily operations which constrained efficient decision-making. At this stage all these companies were frustrated by a lack of incentives, organizational inefficiency, declines in profit margin because of competition, technical upgrading and other problems. The incentive problem has been most important. There were no stock options in Chinese listed companies until 2006 and managerial shareholdings were negligible. The annual salary and bonus plan were the most prevalent incentives, which create well-known myopic behavioral problems.

These firms had typically reached a critical turning point where they must decide between innovation or dissolution. Windows of opportunity can emerge where a firm finds a new way towards growth and renewal, frequently facilitated by a new ownership structure. Buyouts in such circumstances can facilitate strategic innovation (Wright et al. 2000).

As noted above, MBOs were typically purchased at a price based on the net assets per share or even at a discount, far below the price of tradable shares. Typically management did not buy all of the equity and take the companies private as MBO in western buyouts. Usually management buy less than 30% of the total equity through a newly established holding company wholly owned by management or with employees. Further, management typically paid only part (around 10%) of the total price when concluding the deal, with the remainder paid in installments. The management obtain finance from their personal contacts (their relatives or wealthy individuals doing business with the listed companies) and in some cases also from local financial institutions using the shares as collateral. Banks were strictly forbidden from providing loans for buyouts or even mergers

and acquisitions until November 2008. However, in some TVE buyout cases the management obtained finance from local credit unions or from other undisclosed sources.

The Role of the Board in Buyouts

In the Western LBO literature, private equity firms are acknowledged to align the interests of managers and investors by applying three sets of changes to the firms in which they invest, which are categorized by scholars as financial, governance, and operational engineering (Cumming et al. 2007).

Financial leverage creates pressure on managers not to waste money. This pressure reduces the "free cash flow" problems (Jensen 1986), in which management teams in mature industries with weak corporate governance could dissipate cash flows rather than returning them to investors.

Governance engineering refers to two aspects. First, private equity firms pay careful attention to management incentives in their portfolio companies. They typically give the management team a large equity upside through stock and options. Also they require management to make a meaningful investment in the company, which means the management also has a significant downside potential. Second, the private equity investors control the boards of their portfolios companies and are more actively involved in monitoring than public company boards. Financial and governance engineering have traditionally been viewed as the two main value sources brought by PE firms in buyouts. But success in private equity transactions is also associated with operational improvements including the introduction of new products and other routine innovations (Meuleman et al. 2009).

As such, the board in a Western PE backed buyout assumes an important and distinctive role. According to corporate governance life-cycle theory, at different stages of their development, firms require different board structures and processes (Lynall et al. 2003). Changes in board composition reflect the strategic challenges and contingencies firms face at different phases in their life-cycle (Zahra et al. 2009). The balance of the monitoring and wealth creation roles of the board may change over this life-cycle. There may be important differences between the structure and functioning of a board designed to minimize agency costs through greater monitoring, and a board designed to maximize a firm's rent generating potential through bringing in skills and capabilities that are absent from the internal management team (Barney et al. 2001). In the West, the shift from a listed corporation to an MBO represents an important threshold in a firm's life-cycle that typically involves either restructuring to improve efficiencies and/or the introduction of new growth strategies.

Studies of the role of boards in Western private equity backed buyouts are limited but have examined three broad areas: the size and composition of the board; the role of independent directors; and the functioning of the board. We follow this approach here.

The boards of PE backed firms that were formerly listed corporations in the UK become smaller with fewer outside directors but more active involvement in driving strategy (Acharya et al. 2009). Representatives from the private equity backers are introduced and non-executive chairs are likely, even though evidence suggests greater duality prior to buyout (Weir and Wright 2006).

The composition and functioning of boards of public-to-private buyout transactions may not be homogeneous but vary according to whether the buyout was aimed at improving efficiencies or exploiting growth opportunities (Wright et al. 2000, 2001). In contrast to efficiency oriented buyouts, those that involve scope for entrepreneurial activity and innovation, require management with an entrepreneurial mindset, and private equity investors that possess more specific industry skills. Hence, in addition to hiring dealmakers with financial engineering skills, private equity firms now often hire professionals with operating backgrounds and an industry focus who can adopt a hands-on role in the strategic planning and supervision of portfolio companies. Often operating as board members, they apply their industry knowledge and analytical skills to the most important issues facing a company from a high-level strategic perspective. Directors from private equity firms also do not hesitate to replace poorly performing management.

There is no direct pressure of financial leverage or governance engineering by PE firms in Chinese MBOs since they play little part in these deals. The board of directors thus assumes a key role in these companies. This role faces distinctive challenges in the context of principal-principal-agent problems arising from the creation of a dominant group of shareholders whose interests may not be closely aligned with other minority shareholders. As a result, we would expect board size to fall following MBO in China and for there to be less pressure to avoid duality of the roles of CEO and Chair compared to listed corporations. As a result of this insider dominance, we also expect less pressure to remove executives.

There is also the simultaneous need for added value contributions in an environment of entrepreneurial deficits. Thus, we also anticipate an increase in the number of independent directors. We anticipate that boards will become more active in assisting management as the entrepreneurial executives noted in the previous section perceive a need to recruit independent directors with expertise in developing businesses. Correspondingly, we would expect there to be an increase in the frequency of board meetings and a high incidence of boards discussing issues relating to business development following MBO. However, insider dominated buyouts may involve potential for tunneling activities, that is appropriating assets by dominant shareholders at the expense of minority shareholders, as well as propping or supporting corporations (Cheung et al. 2006; Peng et al. 2011). We may expect that executives in buyouts may be in a stronger position to engage in both tunneling and propping activities than in listed corporations generally. In the absence of outside investors such as private equity firms and the presence of independent directors owing their appointment to the executives, we expect to find little incidence of executives being challenged formally by independent directors.

Data and Sample

Sample Selection

We focus on a sample of 19 firms identified as follows:

1. We define an MBO to involve the incumbent management of listed companies acquiring the control right and becoming the largest shareholder of the company, directly or indirectly, through equity transfer activities.
2. The MBOs should be completed before 31 December 2003. Following the controversy in 2004 MBOs could not obtain approval from MOF and later SASAC. In practice, there were several cases of MBO involving the state-owned companies after 2004 (due to time delay of government approval). The management has also taken a variety of initiatives to gain control of listed companies. Nevertheless we do not include these companies in our sample. By taking end 2003 as our cut-off point we observe at least 7 years of subsequent changes in corporate governance of the samples after MBO.
3. The listed companies published their announcement of completion of the MBO before 2003. Some companies (e.g. Tianmu Pharmaceutical) released an intention to implement MBO in 2003, but eventually they were not approved by the government. We also exclude those companies (like ZTE) where management was the largest shareholder since inception.
4. We include EMBOs (employee and management buyout). For some companies, the incumbents control the company through an ESOP (employee stock-ownership plan). But the largest shareholder of the ESOP and the company's actual controller belongs to the enterprise's internal management. So an EMBO results in a management buyout.
5. Some cases fit the above categories, but the annual report specifically states that de facto control belongs to the state or the state-owned holding companies. In all cases the management appear to be the controllers of the listed companies from the ownership structure, but in their 2005 or 2006 annual report these companies disclose that "the local government or local SASAC is the de facto controller through equity trust or as custodian, etc.", or claim that "the management shareholding is just equity incentive behavior (management is not the ultimate controller)" and so on. So these companies cannot be counted as MBO companies.
6. Finally, we exclude a large number of private capital acquisitions of listed companies.

The 19 companies all belong to traditional industries such as manufacturing, public transport and aquaculture (the farming of aquatic organisms). One company, Shanghai Pudong Dazhong Taxi Co., completely changed its main line of business from the taxi industry to a public utility (gas). Another company, Wuchangyu, changed from aquaculture farming to two major lines of business, aquaculture and real estate. For consistency, we use the total equity market capitalization whether shares are freely tradable or not. Market capitalization 1 in Table 17.1 is at 31

Table 17.1 The main features of 19 Chinese MBO companies

Type pre BO	Company name	Industry	C (%)	O (%)	C/O	MCap 1 (US$/ million)	MCap 2 (US$/ million)	MCap2/ MCap1
SOE	Shenzhen Universe Group Co., Ltd.	Construct and building material	40	29.68	1.35	106	77	0.73
USE	China Fangda Group Co., Ltd.	Conglomerate	27.36	24.32	1.12	129	128	0.99
SOE	Shenzhen Huaqiang Industry Co., Ltd.	Audio-visual material	45	15.01	3.0	260	187	0.72
SOE	Shandong Shengli Co., Ltd.	Chemical industry (plastic materials)	18.12	18.12	1.0	153	290	1.90
TVE	Guangdong Midea Electric Appliances Co., Ltd.	Household electric appliance (white goods)	30.68	15.82	1.94	340	2,291	6.74
SOE	Zhengzhou Yutong Bus Co., Ltd.	Bus and coach manufacturing	17.19	17.19	1.0	225	685	3.04
SOE	Wuhan Humanwell Hi-tech Industry Company Ltd.	Medical apparatus and instruments;	29.76	22.08	1.35	116	239	2.06
USE	TeBian Electric Apparatus Stock Co., Ltd. (TBEA)	Electric transmission and transformation equipment	21.11	21.11	1.0	339	4,187	12.35
TVE	JiangSu YongDing Company Ltd.	Manufacture of communication equipment	47.8	47.8	1.0	215	139	0.65
TVE	Xiamen Prosolar Technology Co., Ltd.	Conglomerate	49.59	26.58	1.87	108	173	1.60
SOE	Hunan Dongting Aquaculture Co., Ltd.	Aquaculture	29.9	23.57	1.27	87	199	2.29
SOE	Hubei Wuchangyu Co., Ltd.	Aquaculture	68.69	68.69	1.0	207	135	0.65
SOE	Inner Monglia Eerduosi Cashmere Products Co., Ltd.	Clothing	43.8	43.36	1.01	386	724	1.88
TVE	Jiangsu Hongdou Industry Co., Ltd.	Clothing	27.48	19.31	1.42	163	202	1.24
SOE	Shanghai Dazhong Transportation (Group) Co., Ltd.	Public transportation	21.61	5.35	4.04	388	857	2.21

(continued)

Table 17.1 (continued)

Type pre BO	Company name	Industry	C (%)	O (%)	C/O	MCap 1 (US$/ million)	MCap 2 (US$/ million)	MCap2/ MCap1
SOE	Shanghai Qiangsheng Holding Co., Ltd.	Public transportation	21.51	19.36	1.11	439	1,267	2.89
SOE	Shanghai Pudong Dazhong Taxi Co., Ltd.	Public transportation	32.87	11.5	2.86	271	431	1.59
SOE	Sichuan Quanxing Co., Ltd.	Foods and beverage	48.44	32.79	1.48	261	801	3.07
USE	Ningbo Shanshan Co., Ltd.	Clothing	45.77	45.77	1.0	233	299	1.28
Median			30.68	22.08	1.27	225	290	1.88
Mean			35.09	26.71	1.57	233	701	2.52

Note: MCap1 = market capitalization at 31 December 2003. MCap2 = market capitalization at 31 December 2008. Exchange rates used are 1 US dollar = 8.2767 RMB (at 31 December 2003) and 1 US dollar = 6.8346 RMB (at 31 December 2008). RMB appreciated 17.4% against US dollar during the 5 years, but the market capitalization of the 19 MBO companies grew 88% (median), or 1.52 times (mean). O represents ownership rights (cash flow rights), C represents control rights (voting rights). C/O indicates the separation of cash flow rights and control rights where the greater the value, the greater the degree of separation of the two share rights. The C and O data are from the year of the MBO. Type pre BO = SOE, state-owned enterprise; TVE, township-village collective owned enterprise; USE, urban-street collective-owned enterprise

December 2003. Market capitalization 2 is at 31 December 2008. After adjusting for appreciation in the RMB exchange rate, the highest growth rates are 12 times for TBEA followed by 6.7 times for Midea. The median compound annual growth rate over this period is 9.33%, with a mean of 18.6%. However, in four companies, the market capitalization fell over the period.

We conducted a manual search of annual reports to trace the pyramid ownership structure of the sample companies. In six companies, the ultimate controller was one person. The ultimate controllers of three companies are 3–5 core management members. In the other ten companies, the ultimate controllers are the management teams or they are ESOP owned companies.

Board Information

As these companies remain publicly quoted, information on their boards is publicly available. We obtained data on the following measures.

Directors

It is difficult to define clearly the executive directors in Chinese listed companies. Many companies are called 'carve-out' listings (Liu and Sun 2005), i.e. the creation of a separate listing of a subsidiary with the holding/parent company often becoming the largest, if not the majority, shareholder of the listed subsidiary. The group (parent company) and the listed company are therefore not actually separated. So many directors are affiliated to the holding companies. For the MBO companies in this study, some are 'carve-out' listings while some are not. We define an executive director as someone acting as an executive in the listed company (not the group/holding company). Where the director also acts as an executive or director of a subsidiary, if the subsidiary is consolidated with the listed company in the accounting sense, we consider the person as an executive director of the listed company too. Chinese listed companies' annual reports disclose their directors' affiliation with group/holding companies from 2001 and their directors' biographies from 2004 in their annual reports. Background information on directors was collected from IPO prospectuses, annual reports, press releases and other news media.

Frequency of Meetings

We obtained data on the frequency of meetings from the CSMAR (china stock market accounting research) database which was developed by GTA IT Co. in 1999

in order to meet the demands of the Chinese financial market information from financial institutions, researchers, and academic scholars.

Issues Discussed by Directors

We also collected information on the issues discussed by the independent directors from the CSMAR database. In the database disclosures of the issues discussed by the independent directors are categorized as follows:

1. Personnel changes (directors, executives);
2. Remuneration and stock incentives of senior management and directors;
3. Annual report proceedings (financial reports, profit distribution, report supplements and modifications, specific account adjustment, etc.);
4. Related-party transactions (including purchases of raw materials, sales, financing, trade mark renting, and a large number of asset acquisitions or asset sales with the group/holding company;
5. Guarantee items;
6. Acquisitions (including acquisition of a company's equity, asset acquisition, joint ventures, increase in capital of an investee company);
7. Audit items;
8. Divestment;
9. Equity financing (rights offering, seasoned offering, and the allocation of financing);
10. Other (such as corporate governance self-examination etc.);
11. The non-tradable share reform plan and its adjustment.

Data on the Matching Pairs and the Population of Chinese Listed Firms

We chose 19 matching pair companies for comparison with the 19 MBO sample. That is firms that were listed but had not undergone an MBO. Amongst these firms the selection principle is firstly based on the industry code of the China Securities Regulatory Commission (similar to US the four-digit SIC code), then secondly according to the closest total assets size.

We chose all the Chinese listed A-share companies on the Shanghai and Shenzhen Stock Exchanges. The board data are from CSMAR. We obtained the characteristics of independent directors of the population of listed companies from the Shanghai Stock Exchange, 2010 Annual Report on China Corporate Governance: Independent director system and practice (SSERC 2010). The report contains data for 2,817 independent directors of 760 listed companies on the Shanghai stock market.

Results: Evidence on the Role of Boards in Chinese MBOs

General Board Characteristics (Q1)

Characteristics of Senior Management

We identified 26 core people from the 19 enterprises, according to whether they were chairman of the board or general manager at the time of MBO and present in the enterprise for at least 5 years from 2 years before MBO. From analysis of their biographies and the annual reports, these people are the most important leaders in developing their enterprises.

The 26 leaders had a mean age of 45 years (median 44 years) in the year of MBO. These individuals are very young given that they have led the enterprises for a long time before the MBO. All these enterprises were floated on the stock market in the 1990s. Thus these individuals had developed these enterprises from the beginning of China's reform. We can assert that these leaders are innovative entrepreneurs, rather than traditional SOE management who are mostly officials assigned by the government.

Board Size

The size of the board decreases gradually and almost yearly, from an average of 10.8 directors 2 years before the MBO, to 10.1 in the year of the MBO, to 8.4 by year 8 after the MBO (Fig. 17.1). This decline at the time of buyout is consistent with evidence from Western MBOs (where buyouts lose between one and two directors), although evidence suggests that boards in MBOs in the West are smaller than in China at around five members (Wright and Coyne 1985).

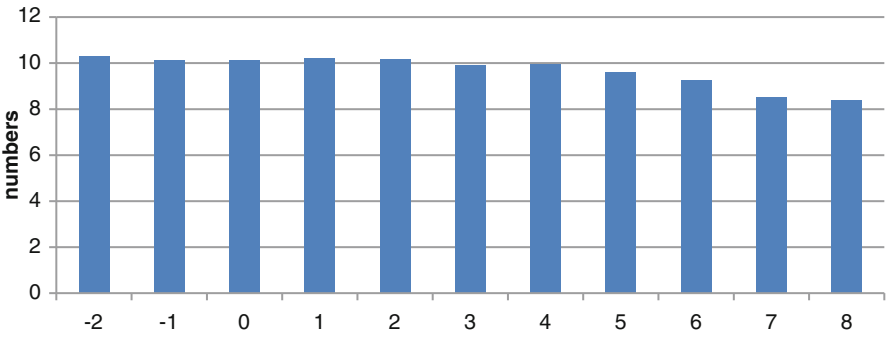

Fig. 17.1 The average numbers of directors of the 19 Chinese MBO companies. Note: 0 = the year of the MBO, –2 = 2 years before the MBO and so on. We define the MBO year as when the listed company firstly discloses its buyout. However a lot of preparation work has been virtually undertaken before the disclosure

Table 17.2 Comparisons of the mean numbers of directors

Year	The number of directors (MBO)	The number of directors (non MBO)	The number of directors (population)
1999	10.57	9.43	9.60
2000	10.65	9.18	9.42
2001	9.68	9.63	9.37
2002	10.11	10.16	9.86
2003	9.84	10.58	9.86
2004	9.63	9.95	9.70
2005	9.16	10.11	9.57
2006	9.05	9.39	9.42
2007	8.79	9.16	9.36
2008	8.53	9.11	9.26
2009	8.63	8.68	9.16
2010	8.37	8.79	9.09
Mean	9.38	9.53	9.44

MBO-non MBO matched pairs: Mann–Whitney test, $z = -0.349$ (n.s.)
MBO-population: Mann–Whitney test, $z = -0.866$ (n.s.)

Note: To enable comparisons we present data for the three groups of companies as reported in each calendar year. We compare the sample means over the period. Testing MBO-non MBO matched pairs for each year we find no significant differences. Testing MBO-Population for each year we find a weakly significant difference in year 2000 ($p < 0.10$)

Compared with the matched pairs and the population of listed corporations, the size of the boards of directors in MBOs is not statistically significantly different. But the average size of MBO boards declines faster over time than in non-MBO companies (Table 17.2).

The Number and Proportion of Executive Directors

The average number of executive directors drops from 3.4 people 2 years before MBO to 2.3 people 8 years after MBO, in other words a fall of just over one person on average (Fig. 17.2). However, the proportion of the executive directors in the board as a whole is almost unchanged. Excluding the period 2 years before MBO, executive directors accounted on average for 28–30% of board members over the period to 8 years post-MBO. This compares with Western MBOs where the number of executives similarly falls by around one person on average but where they account for 47–61% of the board after the buyout (Cornelli and Karakas 2008).

Duality

The separation of chairman and the CEO (usually called the 'general manager' in China), regarded as a feature of good governance in the West, was common in companies before and after MBO. Among the 19 companies, only two maintained

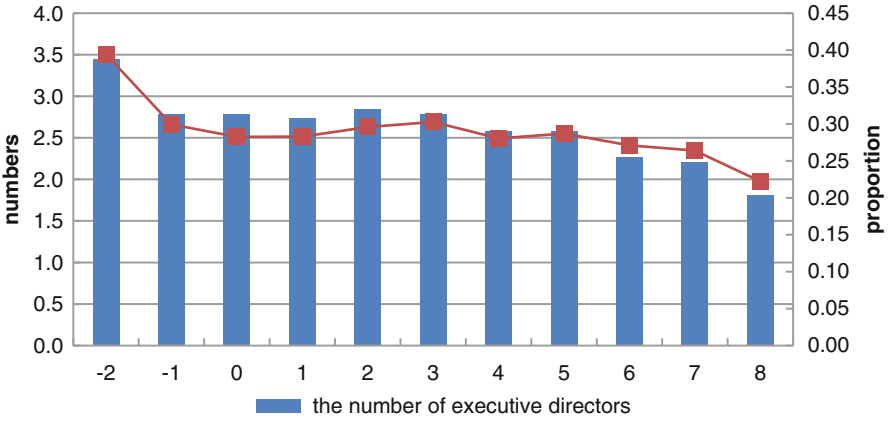

Fig. 17.2 The average number and proportion of executive directors of the 19 Chinese MBO companies

duality throughout the period. Duality existed in only five companies before MBO. There are four cases of duality in the year of the MBO, and three cases at year 5 after MBO. Two of these three companies had duality throughout the period, while one company initially had separation but subsequently restored duality.

The MBO sample, matching companies and the population generally adopt separation of the two functions and we find significant (at 10% significance level) difference between the MBO and non-MBO groups where the former are more likely to have duality (Table 17.3). In comparison, public to private buyouts in the UK show a higher incidence of duality before the buyout than listed corporations generally (Weir and Wright 2006).

Independent Director Characteristics (Q2)

The Number and Proportion of Independent Directors

Good corporate governance in the West requires that a significant proportion of directors should be independent, in other words not affiliated to incumbent management (e.g. Combined Code 2003). While the definition of independence of non-executive directors continues to be the subject of debate, it is a relatively clear issue in Chinese listed companies. The China Securities Regulatory Commission (CSRC) issued a decree in June 2001 that recommended that the board of a listed company should include at least two independent directors by June 2002 and the independent directors should compromise not less than a third of the board from June 2003. This approach imitates the 1998 Combined Code in the UK. The definition of independence adopted in the decree encompasses many of the characteristics adopted in the US and

Table 17.3 Comparison of duality

Year	The duality of chairman and CEO (MBO)	The duality of chairman and CEO (non MBO)	The duality of chairman and CEO (the population)
1999	1.64	2.00	1.78
2000	1.75	1.94	1.84
2001	1.79	1.95	1.88
2002	1.84	1.89	1.89
2003	1.89	1.74	1.89
2004	1.89	1.79	1.88
2005	1.89	1.84	1.88
2006	1.79	1.79	1.87
2007	1.79	1.95	1.84
2008	1.84	1.89	1.84
2009	1.84	1.89	1.81
2010	1.83	1.89	1.78
Mean	1.82	1.88	1.85

1 = duality, 2 = non-duality

MBO-non MBO matched pairs: Mann–Whitney test, $z = -1.736$ ($p = 0.083$)

MBO-population: Mann–Whitney test, $z = -0.918$ (n.s.)

Note: To enable comparisons we present data for the three groups of companies as reported in each calendar year. We compare the sample means over the period. Testing MBO-non MBO matched pairs for each year we find a significant difference for the year 1999 ($p < 0.05$). Testing MBO-Population for each year we find no significant differences

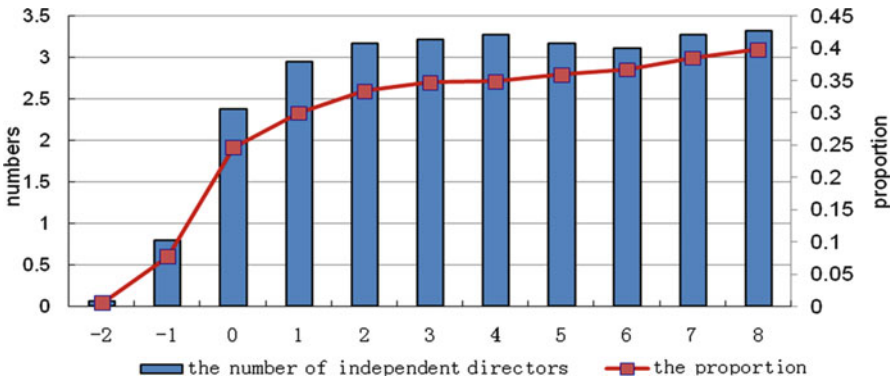

Fig. 17.3 The average number and proportion of independent directors of the 19 Chinese MBO companies

UK. Most Chinese MBOs were completed in 2001 and 2002, before this legislation came into force.

The average number of independent directors increased dramatically from 0.05 2 years before the MBO to 2.4 in the year of the MBO (Fig. 17.3). The average then slowly rose to 3.3 8 years after the buyout. Also notable is the increase in the proportion of the board accounted for independent directors from 0.5% 2 years before the MBO to 24.6% in the year of the MBO. The proportion rose further to

Table 17.4 Proportions of independent directors (IDs)

Year	The proportion of IDs (MBO) (%)	The proportion of IDs (non-MBO) (%)	The proportion of IDs (population) (%)
1999	0.65	0.00	0.81
2000	1.44	0.65	1.74
2001	8.51	5.33	6.29
2002	27.08	21.86	24.14
2003	34.75	32.50	32.77
2004	35.69	36.10	34.20
2005	36.47	34.16	34.81
2006	36.54	35.52	35.23
2007	37.86	36.54	35.82
2008	37.80	37.26	36.20
2009	37.42	37.30	36.45
2010	38.58	36.86	36.65
Mean	28.45	26.26	28.53
MBO-non MBO matched pairs: Mann–Whitney test, $z = -1.931$ ($p = 0.053$)			
MBO-population: Mann–Whitney test, $z = -1.074$ (n.s.)			

Note: To enable comparisons we present data for the three groups of companies as reported in each calendar year. We compare the sample means over the period. Testing MBO-non MBO matched pairs for each year we find significant differences for 2002, 2003, 2005 and 2010 ($p < 0.05$). Testing MBO-Population for each year we find significant differences in 2003, 2004, 2005 and 2010 ($p < 0.05$)

30% 1 year after the MBO and continued to rise to 40% by year 8. Interestingly, the average proportion of independent directors is above the recommended one third prescribed by the CSRC.

The proportion of independent directors on the board of the MBO sample is significantly (at 10% significance level) higher than that of the matched companies but is overall not significantly different from that in the population of listed companies (Table 17.4). The significantly different years in the matched sample were 2002, 2003 and 2005.

The Characteristics of the Independent Directors

Over the period 1999–2010 we identified a total of 138 people who served as independent directors of the 19 MBO companies examined, amounting to 238 person-terms. A term is usually 3 years. Among the 138 people, 2 (1.4%) served four terms, 17 (12%) served three terms, 60 (43.5%) served two terms, and 59 (42.8%) served one term. According to the CSRC decree of 2001, independent directors can be re-elected for another term, but cannot exceeding a continuous 6 year period. In the UK, directors submit themselves for re-election at least every 3 years.

The characteristics and background of the independent directors can be divided into the following categories: (a) incumbent management of industrial companies,

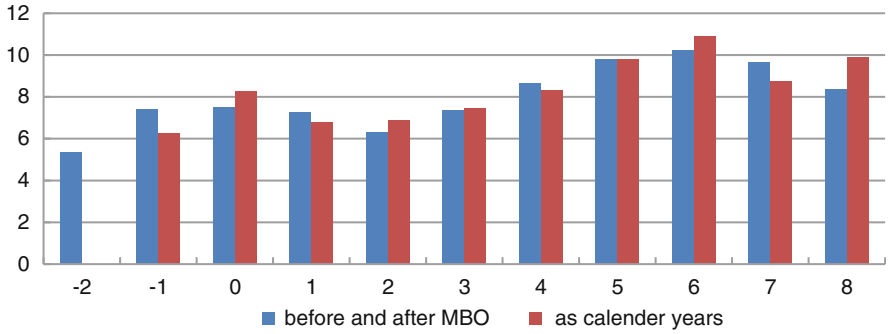

Fig. 17.4 The average number of board meetings held each year by the 19 Chinese MBO companies. Note: The calendar years are from 2001 to 2010. The numbers of board meetings are from the annual reports, collected form CSMAR database. The CSMAR database on board meetings starts from 2001

(b) incumbent management of financial institutions, (c) incumbent government officials; (d) retired management of industrial companies and financial institutions, and retired government officials; (e) scholars; (f) accountants, lawyers, and asset valuers; (g) experts with industrial or international backgrounds.

The composition of the board seems to be constructed according to the skills and experience of the individuals concerned. Incumbent management in other companies or government officials can bring management experience or provide resources relating to network contacts with government. Scholars are affiliated with scientific research institutions and universities. Lawyers, accountants and valuers, with their professional qualifications, are employed in law firms, accounting firms, and asset valuation companies/partnerships. Industry experts work for some research institutions with industrial relations or supported by industrial association.

Scholars provide the most common background of independent directors at 37.7% of the 138 individuals**.** The second most frequent category (18.1%) is individuals who are incumbent management of industrial companies. The third group is accountants (including asset valuers) and lawyers with 11.6% of the total. The fourth group is professionals, notably those with an industrial or international background who account for the 10.9 and 9.4% of independent directors. The fifth group is retired persons, with retired management accounting for 2.9%, while the retired government officials account for 7.3%. Of the five independent directors from financial institutions, one is from a securities company, one from a bank, one from a mutual fund management company, one from a life insurance company, and one from a VC/PE firm. All five are their respective firms' chairman or general manager.

There are significant differences in the backgrounds of the independent directors between MBO and the population of listed companies (at 1% significance level, Pearson Chi-Square test, $p = 0.000$, however there are no significant differences between MBO and the matched non-MBO companies.). Specifically, the MBO sample includes more independent directors with an international background and

Table 17.5 Comparison of frequency of board meetings

Year	The frequency of board meetings (MBO)	The frequency of board meetings (non-MBO)	The frequency of board meetings (population)
2001	6.28	6.05	6.23
2002	8.26	7.50	8.42
2003	6.79	6.42	7.53
2004	6.89	6.84	7.33
2005	7.47	6.53	7.50
2006	8.32	7.42	8.04
2007	9.79	8.58	9.59
2008	10.89	7.84	9.60
2009	8.74	7.53	8.34
2010	9.89	8.42	8.72
Mean	8.34	7.31	8.25
MBO-non MBO matched pairs: Mann–Whitney test, $z = -2.428$ ($p = 0.015$)			
MBO-population: Mann–Whitney test, $z = -1.004$ (n.s.)			

Note: To enable comparisons we present data for the three groups of companies as reported in each calendar year. CSMAR database only provides the number of meetings of the board of directors since 2001. We compare the sample means over the period. Testing MBO-non MBO matched pairs for each year we find a significant difference for 2008 ($p < 0.01$). Testing MBO-Population for each year we find no significant differences except 2010 ($p < 0.01$)

who are incumbent managers in other companies than the overall population. MBOs also have fewer independent directors who are scholars compared to the overall population of companies.

The Functioning of the Board (Q3)

We examine three aspects of the functioning of the boards in MBOs: the frequency of board meetings, the nature of the issues addressed by independent directors and the extent to which independent directors challenge management.

The Frequency of Board Meetings

The number of board meetings increases annually from 5.3 times in the year before the buyout to 7.5 times in the year of the MBO. It then fell slightly up to year 3 after the buyout before rising again to 10.2 times 6 years after the buyout. The increase in the year of the MBO may reflect the preparations for the MBO (Fig. 17.4). In 2007–2008 observed additional meetings of the boards of directors may have been in response to the financial crisis.

We find evidence of a significant difference in the frequency of board meetings between the MBOs and matching pairs (at 5% significance level) (Table 17.5). The MBOs' boards on average held 1.03 more meetings than the matching

company each year. There is no significant difference between the board meeting frequency of MBO companies and the population. The frequency of board meetings in Chinese MBOs appears to be less than in Western buyouts which hold an average of 12 formal meetings per year (Acharya et al. 2009).

Nature of Issues Addressed by Independent Directors

In total, there are 214 disclosure statements relating to the issues discussed by the independent directors of the 19 MBO companies from 2002 to 2010. The 214 disclosures involved a total of 232 distinct items, among which most are related transactions (44%), followed by personnel change (14%). The non-tradable share reform and guarantee items accounted for 9%, divestiture accounted for 8%.

The disclosure items of independent directors in MBOs are significantly different from those of the matching companies (at 10% significance level), and the overall company population (at 1% significance level). Compared with the matched pairs and the population companies, we find that independent directors of MBO companies express more views on related-party transactions, divestment, and non-tradable share reform where the independent directors in MBOs appear more concerned about the interests of small/tradable shareholders

It is unclear whether the related transactions between the holding company and listed company involve expropriation (tunneling) or interest support (propping up), i.e. whether these transactions damage or benefit the company's minority stockholders (Zhu et al. 2006; Li 2008). The 'tunneling or propping up' effects of related-party transactions in MBOs is in need of further fine-grained analysis.

Challenging Executives

Independent directors do not appear overtly to challenge the actions of managers. While their possible opinion choices are categorized as "agree, disagree, reservations, unable to express views" by CSRC, we found that the only category selected was 'agree'. In these companies which are effectively controlled by the owner-managers, there appears to be no publicly recorded opposition. However, this is not unique to MBO companies, but is a general phenomenon in all China's listed companies. Over the period 2007–2009, the proportion of total listed companies whose independent directors put forward objection on major issues was relatively low: 3.0, 2.7 and 2.4%, respectively. The proportion of independent directors who raised objections in the 3 years was even lower: 1.5, 1.2 and 1.5% respectively (SSERC 2010). However, anecdotal evidence suggests that independent directors may challenge executives behind the scenes.

It appears that if an independent director disagrees with executives on items such as an acquisition or a related-party transaction and the conflict cannot be settled, the independent director will choose to resign rather than express an overt opinion

in the public disclosure. Thus it appears that independent directors are not able to dismiss executives but may effectively be dismissed by them. Amongst the 760 Chinese listed companies the reasons for changing independent directors are expiration of contract (37.3%) followed by resignation (5.1%). The true reason for change cannot be accurately identified as 49% of the sample did not give a reason (compared to 23% for general directors) (SSERC 2010).

Discussion

Our analysis has a number of implications for practice, policy and research.

Implications for Practice and Policy

Our first research question focused on to what extent boards of directors are changed to bring in executive and outside directors with the skills to grow as well as restructure the business. Our analysis suggests that in general board directors contribute little to value creation yet such enterprises undergoing restructuring need these capabilities in the board which may not be possessed by incumbent management, even though those managers have played a central role in developing their firms to this point (Zahra et al. 2009). Financial supervision institutions, enterprises and shareholders in China need to give greater attention to this aspect of governance in MBOs.

We suggest that there is a major need for more independent directors from financial institutions especially from VC/PE firms. We would also argue that independent directors should involve investment professionals or those with operational expertise in these institutions who can take a more active role in developing the firms' growth. More use might also be made of retired management with industrial and financial institution experience, who at present account for few independent directors but who may be in a position to form close and trusting relationships with CEOs and senior executives due to the credibility associated with their prior business accomplishments. Retired government officials may be able to contribute little in terms of industrial expertise but may bring important political connections, although these can exert a constraining influence on some aspects of development especially internationalization. In addition the main factor affecting the independent directors' ability to vote on significant items is limited time (43%) followed by lack of independence (17%) and lack of ability (17%) (SSERC 2010). Therefore, we believe that partners or investment managers from the VC/PE industry serving as independent directors will be able to devote sufficient time and energy to these enterprises. In addition, China must develop its own full-time independent directors who are more independence and more capable.

Our second question focused on to what extent outside directors become involved in actions to develop the business versus actions relating to looking after the interests of all shareholders. Our evidence shows that in China's listed companies post MBO, the attention and time of the independent directors are mostly taken up with related transaction issues between the parent (holding) company and the listed company after the MBO. This is interesting in the context of recent research which indicates that related transactions represent a negative aspect of corporate governance quality (Djankov et al. 2008). Hence the governance of Chinese MBOs is characterized by relatively low quality.

At present, Chinese independent directors are generally nominated and elected by the majority shareholder. As such the independence of so-called independent directors is undermined, especially from the perspective of minority shareholders. Controlling shareholders actually chose independent directors attached to themselves and there is a de facto opinion shopping phenomenon (Zhi and Tong 2005), which has been verified in the analysis of the opinions of the independent directors of MBO companies. Even if the independent director found traces of rule violation of listed companies, he/she often will not take actions of announcement, warning, etc., all the manner of voting with their hands which will arise concern from market, instead of remaining silent or taking relative little market-concerned action, to vote with their feet i.e. through resignation.

Therefore, we suggest that the CSRC establish an independent director bank that provides the independent directors who are responsible directly to the minority shareholders. There would be a requirement for the CSRC to select the directors from the bank and recommend them to the listed companies. The companies would then pay the cost to CSRC who in turn would remunerate the independent directors. This separation could provide a means to cut the umbilical cord between independent directors and the majority shareholder or controller.

Further efforts can also be introduced to promote and disseminate good board practice. An example of this approach is the awards for best boards organized by the influential journal "The BOARD". Indeed, in 2010 one of our sample companies Midea Electrical was the receipt of one of the ten best Boards awards.

Limitations and Further Research

This study has a number of limitations that provide opportunities for further research. Our focus here is on the structure of boards, the characteristics of eternal board members and the actions they take in MBOs of Chinese listed corporations. Further research is needed to undertake more longitudinal in-depth analysis of the processes taking place post-MBO, although gaining access to board meetings is notoriously problematical.

Conclusion

Overall, this study has sought to extend examination of the ethical aspects of MBOs to the context of MBOs of listed corporations in China. We have extended analysis beyond a potentially negative perspective that focuses on the scope for misappropriation by dominant managers to consider the need to achieve a balance in terms of facilitating growth while maintaining the interests of other (minority) shareholders. Our evidence indicates that while there has been some development of boards, they do not adequately possess the expertise needed to address both of these aspects.

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Chapter 18
Multiple Large Shareholders and Joint Expropriation with Dividend Payments

Huaili Lv and Wanli Li

Introduction

Many research studies have found that corporate ownership is concentrated in the hands of a small number of block shareholders (Bennedsen and Wolfenzon 2000; La Porta et al. 2000). The presence of multiple large shareholders has two separate effects on corporate governance. On the one hand, multiple block holders have the power and incentive to monitor the controlling shareholder and therefore the ability to reduce profit diversion by the controlling shareholder. On the other hand, block holders can form a coalition with a controlling shareholder and share any diverted profit (Maury and Pajuste 2005). Recent studies suggest that multiple large shareholders play a potentially restraining role in alleviating the firm's agency costs and information asymmetry between controlling and minority shareholders (Laeven and Levine 2008; Attig et al. 2008).

China, the second largest economy in the world, established its capital market in the 1990s. In the initial stage of capital market development, complex classifications of shareholding were created by the Chinese Government, which resulted in the co-existence of tradable and non-tradable shares in China's listed companies. Non-tradable shares are held primarily by controlling and non-controlling large shareholders,[1] while tradable shares are held mainly by minority shareholders. Controlling and non-controlling large shareholders are offered a price discount

[1] The controlling shareholder is defined as the firm's first largest shareholder, and non-controlling large shareholders are the joint largest excluding the controlling shareholder. For example, the non-controlling large shareholders might be the second to fifth-largest shareholders of a company.

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for owning and retaining these non-tradable shares. The pricing difference between tradable and non-tradable shares in the Chinese capital market is expected to engender corporate dividend policy that is different from the policy observed in Western developed markets. Dividend paymentshave a 'tunneling' incentive in China's listed companies (Chen et al. 2009b; Huang et al. 2011). However, in the case of China, little is known about multiple large shareholders' impact on firm's dividend payments, such as whether multiple large shareholders have the ability to reduce profit diversion by controlling shareholders or have an incentive to share diverted profit.

The creation of a balancing mechanism among block holders is one of the governance roles that is played by multiple large shareholders (Bennedsen and Wolfenzon 2000). To uncover the joint expropriation incentive of dividend payments in companies with multiple large shareholders, this chapter investigates the relationship between cash dividends and the shareholders balancing mechanism (SBM)[2] under alternative exogeneity/endogeneity assumptions regarding corporate ownership structure. Firstly, assuming ownership structure is exogeneous, we analyze the influence of the SBM of non-controlling large shareholders over the controlling shareholder on corporate dividend payments. We identify various impacts associated with different levels of dividends. Secondly, assuming ownership structure is endogenous, we examine the effect of cash dividend payments on the SBM of tradable shareholders over the controlling shareholder, and ascertain whether such an effect has different characteristics prior to and after the non-tradable share reform that took place between 2005 and 2007. The main purpose of this study is to answer the following two questions:

1. Will cash dividend payments protect the interests of minority shareholders or be used as a method of tunneling by the corporate controlling shareholder?
2. If cash dividend payments are used as a method of tunneling, will the expropriation be simply from the controlling shareholder, or instead from a coalition of controlling and non-controlling large shareholders?

The remainder of this chapter is organized as follows. The section "Institutional Background and Research Hypotheses" presents the institutional background of the Chinese capital market and develops our research hypotheses. The section "Research Design and Data" describes the research models and the data. The section "Empirical Results" provides empirical tests and analyses, followed in the section "Test for Robustness" by a robustness test. The final section concludes.

[2] The SBM of non-controlling large shareholders can strengthen the protection for the interests of minority shareholders by inhibiting the expropriation of controlling shareholders (Attig et al. 2008; Maury and Pajuste 2005). Though the SBM's constraint effects of tradable shareholders are limited, the change of the SBM can show the movement of the holdings of tradable shareholders and reveal tradable shareholders' attitudes towards a firm's dividend policy.

Institutional Background and Research Hypotheses

Institutional Background

Ownership Structure of Chinese Listed Companies

The Chinese capital market is a product of China's economic reform. In November 1990, the Shanghai Stock Exchange (SHSE) was launched, and 6 months later, the Shenzhen Stock Exchange (SZSE) was set up in Southern China. In the initial stage of the capital market development, companies listed on the SHSE and SZSE were predominately from China's reformed state-owned enterprises (SOEs), which essentially were controlled by the central, provincial, and local governments. Most of the listed companies have a variety of shares, including state, legal-person, individual, management, employee, and foreign shares. State shares are held directly by the government, or indirectly held by governmental agencies (e.g., the Bureau of the State Property Management). Legal-person shares are held by legal identities (i.e., the representative of companies and enterprise groups), which can further be classified as state-owned legal-person shares and non-state-owned legal-person shares. Management, employee, and foreign shares are those held by a firm's managers, employees, and foreign investors, respectively.

On average, Chinese listed companies have 35% of state ownership directly held by the governments, and 24% of legal-person ownership, including those held by state-owned enterprises (Yuan et al. 2008). Management, employee, and foreign shares represent less than 2% of the outstanding shares, which means they do not constitute a major vote block (Chen et al. 2009a). Although Chinese listed companies have a very high concentrated ownership structure, they still have multiple large shareholders, even in companies controlled by government. In family-controlled listed companies, the ownership of the largest shareholder amounts to 20% of the issued shares, which has the same characteristics with the ownership structure in the Anglo-Saxon countries.

By the end of 2004, the total shares of Chinese listed companies were 714.9 billion, of which 454.3 billion shares (nearly 64% of the total) were non-tradable, and among the non-tradable shares, 74% were state-owned. To balance the interests of non-tradable and tradable shareholders, China's Securities Regulatory Commission (CSRC) began the non-tradable share reform on April 29, 2005. By the end of 2007, 98% of all the companies listed on the SHSE and SZSE had completed the process of the non-tradable share reform, which transformed non-tradable shares into tradable shares.

The non-tradable share reform helped to eliminate the legacy problems in China's stock market, where unequal rights were given to holders of state-owned shares, legal person shares, and tradable shares, resulting in different pricing of these shares. Although the reform has eliminated the legacy problems, there are still some restrictive measures for the converted tradable shares. In order to prevent the impact on the capital market caused by reducing the shares held by the converted

large shareholders, the CSRC stipulates that these shares only can be traded openly after a specified period (normally 2 years). Even though there will be no non-tradable shares formally in existence after the non-tradable share reform, trading restriction of the converted shares would exist for a number of years (Cheng et al. 2009).

In China's capital market, the distinction of tradable and non-tradable shares implies some features of exogeneity and endogeneity of ownership structure. On the one hand, for the controlling and non-controlling large shareholders that are composed by owners of non-tradable shares, the proportion of their shareholdings is more stable, with no frequent changes in a given period. The ownership structure of controlling and non-controlling large shareholders basically shows exogeneity in this case. On the other hand, for the tradable shareholders, the proportion of their shareholdings is less stable than that of the controlling and non-controlling large shareholders, as they can buy or sell the shares freely on stock exchanges. The ownership structure of tradable shareholders largely reflects endogeneity. This study aims to test the tunneling and joint expropriation incentive of dividend payments from the dual perspectives of the exogeneity and endogeneity assumptions of corporate ownership structure.

Dividend Policy in the Chinese Capital Market

In China's capital market, there are three forms of dividends: cash dividends, stock dividends, and combined dividends (i.e., cash and stock dividends). While stock repurchasing also exists in some listed companies, the CSRC has more rigorous restrictions on this form of dividends. For example, Section 143 of China's Company Law rules that companies shouldn't be allowed to repurchase shares, except when they confront certain circumstances, such as reduced registered capital, company amalgamation, and the awarding of not more than 5% shares to employees.

Stock dividends were more popular with listed companies in the early years of Chinese capital market development. While 94.54% of firms distributed stock dividends in 1993, this percentage dropped to 13.56% by 2002, as the rhythm of the development of China's capital market became faster. The proportion of firms that paid cash dividends increased from 47.54% in 2003 to 57.25% in 2006 (Wei and Xiao 2009).

Company dividend payments are monitored regularly by the CSRC for the purpose of protecting the interests of investors. The CSRC has put forward a series of stipulations that have a significant influence on the company's refinancing through a seasoned equity offering (SEO). In March 2001, the CSRC ruled that the refinance applications would not be approved for firms that did not make dividend payments over the preceding 3 years prior to the application. A revised stipulation on the SEO was issued in April 2006, in which a compulsory dividend payment was required. The application for the SEO was to be approved for firms

whose accumulation of cash dividends and stock dividends in the 3 years was no less than 20% of the average annual distributable profits over the preceding 3 years.

In October 2008, a new mandatory stipulation was issued by the CSRC concerning dividend payments, especially the cash dividend payments of Chinese listed companies. The percentage of total cash dividends in the past 3 years was to be more than 30% of the average annual distributable profits during these periods, and interim cash dividends also were encouraged under the new requirements. The stipulations issued by the CSRC were intended to protect the interests of minority shareholders. It would be interesting to find out whether such stipulations are a safeguard for the protection of or an excuse for the expropriation of corporate minority shareholders; this is what motivates us to undertake this empirical study.

Research Hypotheses

Dividend Tunneling

Broadly speaking, dividend theories can be categorized into two groups: protection theories and tunneling theories. Under protection theories, free cash flow (Jensen 1986), agency cost (Easterbrook 1984), signaling (Miller and Rock 1985), catering (Baker and Wurgler 2004), dividends are considered protection for shareholders, especially for the outsider investors. For example, catering theory argues that dividends are intended for catering to investors, rather than as an expropriation method (Ferris et al. 2009). Under the tunneling theory, dividends are employed by the corporate controlling shareholder to expropriate the interests of minority shareholders (Chen et al. 2009b).

On referring to prior research on the agency conflicts between controlling and minority shareholders, a significant negative relation was found between the SBM and the controlling shareholder's expropriation. It has been shown that ownership structure plays an important role in determining whether insiders expropriate minority shareholders (Farinha and Lopez-de-Foronda 2009; Lemmon and Lins 2003). Maury and Pajuste (2005) observe that multiple block holders, reflecting a high degree of corporate SBM, play an important role in corporate governance, as competition among several largest shareholders can limit the expropriation of minority shareholders. Using related party loan guarantees of Chinese firms, Berkman et al. (2009) find that greater ownership by private non-controlling shareholders reduces the likelihood of a controlling shareholder's expropriation, because private non-controlling shareholders have the strongest incentives to monitor the controlling shareholder and prevent the expropriation of minority shareholders.

If other shareholders (especially non-controlling large shareholders) interpret a controlling shareholder's action as an expropriation (e.g., related party transactions and related party loan guarantees), the corporate SBM could play an effective role in protecting their interests. In terms of corporate cash dividend payments in Chinese listed companies, dividends often evolve into one of the expropriation

manners of corporate controlling shareholders, because it is legitimate and easy to operate, as shown by Chen et al. (2009b).

Moreover, company announcements, including the announcement of dividend payment plans, can send good or bad news to the capital market. Dividend payments expect to send bad information to the capital market under the expropriation assumption, as tradable shareholders will sell the shares that they hold to avoid more losses when faced with a high level of dividends.[3] Consequently, this leads to a decrease in the SBM over controlling shareholders. Thereby, we propose the first pair of hypotheses as follows:

H1: Dividend Tunneling Hypotheses:

H1a: Under the exogeneity of ownership structure, the SBM of the non-controlling large shareholders is negatively associated with corporate cash dividends.

H1b: Under the endogeneity of ownership structure, the SBM of corporate tradable shareholders is negatively associated with corporate cash dividends.

Dividend Joint Expropriation

Bennedsen and Wolfenzon (2000) point out that the firm's founder will choose an ownership structure with multiple large shareholders to form coalitions in order to obtain control. Using a sample of 139 listed companies from Italy, a civil law country with a highly-concentrated ownership structure, Mancinelli and Ozkan (2006) examined the relationship between dividend policy and corporate ownership structure. They found that the non-controlling large shareholders have incentive to monitor the controlling shareholder, but the coalition among shareholders will limit the monitoring power.

The shareholders of Chinese listed companies, particularly the largest shareholders, have inextricable connections due to the fact that most of the Chinese listed companies were from formal SOEs. Even in family-controlled listed companies, there are intricate bonds among the largest shareholders, such as relatives, friends, and other social relations. Such nepotism is strengthened by the cross-shareholdings among largest shareholders. Therefore, it is difficult for multiple large shareholders to form an effective balancing mechanism in Chinese listed companies. And what is more, there will be collusion relations among block shareholders, especially between controlling and non-controlling large shareholders.

According to H1a, the SBM of non-controlling large shareholders is expected to have a constraining effect on dividends under the dividend tunneling theory. Although cash dividend payments match the dividend tunneling theory, the constrained effect will be compromised because of the inextricable connections among the several largest shareholders, especially in companies with high and abnormal

[3] In China's capital market, the tax rate on capital gains is zero; thus, tradable shareholders are willing to adopt the way of voting by foot to avoid a firm's adverse policies.

levels of dividends.[4] In high-dividend and abnormal-dividend companies, there are coalitions between non-controlling large shareholders and controlling shareholders, so the level of cash dividend payments in these companies is higher than in other companies.

The tradable shareholders, in consideration of their own interests, would expect to sell their shares in the capital market to avoid economic losses, irrespective of whether the expropriation is solely from the controlling shareholder or from the coalition of controlling and non-controlling large shareholders. Thus, we propose the second pair of hypotheses relating to the joint expropriation of non-controlling large shareholders and controlling shareholders.

H2: Dividend Joint Expropriation Hypotheses:

H2a: Under an exogenous ownership structure, the SBM of non-controlling large shareholders is positively associated with cash dividend payments in high-dividend and abnormal-dividend companies.

H2b: Under an endogenous ownership structure, the SBM of corporate tradable shareholders is negatively associated with cash dividend payments.

Dividend Protection

Studying the relation between dividends and an insider's agency problems, La Porta et al. (2000) found that corporate minority shareholders generally wish to accept dividends, and firms operating in countries with better legal protection of minority shareholders pay higher dividends. Faccio et al. (2001) consider dividend policy as a vehicle for long-term commitments by corporate managers to shareholders, and it can be used to address the agency problems arising from information asymmetry and incomplete contracting between the two parties. Sawicki's (2009) study shows that dividends are an outcome of both legal and internal mechanisms for the protection of minority shareholders' interests in five Southeast Asia countries. Using tradable A-shares stocks listed on the SHSE and SZSE from 1991 to 2004, Eun and Huang (2007) found that investors in China were willing to pay a premium for dividend paying stocks, and that dividends would signal the corporate willingness to return the cash flow to outsiders.

In the development of China's capital market, the CSRC has issued a series of policies to encourage Chinese listed companies to make dividend payments since 2001. The most important one was the regulation released in October 2008, requiring that the proportion of cash dividends in the past 3 years exceed 30% of the average annual distributable profits during those 3 years. This provides regulatory

[4] We define high-dividend companies as those with a level of dividends higher than the median value of dividend payments ratio in companies with positive EPS and dividend payments in an industry over a particular year, and abnormal-dividend companies are defined as those who still pay dividends even though there is net loss in the year.

grounds for Chinese listed companies to pay cash dividends. Dividends, in particular cash dividends, could be considered an effective weapon for protecting shareholders' interests. Although shareholders are subject to 20% of tax on cash dividends under the current Chinese tax system, they are willing to accept the firm's dividend policy so that they can reinvest the received cash dividends with no need of obtaining approval, and they can enjoy the subsequent profit from the investment (Wei and Xiao 2009; Chen et al. 2009b).

Non-controlling large shareholders cannot get capital gains because of the trading restriction of their shares; thus, the only way for them to get a cash return from a listed company is dividend payments. In this case, the SBM helps to protect the interests of non-controlling large shareholders, resulting in an increase of dividend payments. Dividend protection theories suggest that dividend payments convey a good signal to the market, which is expected to lead to an increase in the company's stock price. Minority shareholders would prefer a high level of dividends, and they do not perceive cash dividends as a manner of expropriation by the controlling shareholder, but as the return of corporate benefits. For that reason, tradable shareholders expect to buy the stocks of firms paying dividends, ultimately resulting in the strengthening of the corporate SBM of tradable shareholders over the controlling shareholder. Therefore, we propose the third pair of hypotheses that are the opposite of the first pair:

H3: Dividend Protection Hypotheses:

H3a: Under an exogenous ownership structure, the SBM of the non-controlling large shareholders is positively associated with cash dividends.

H3b: Under an endogenous ownership structure, the SBM of corporate tradable shareholders is positively associated with cash dividends.

Research Design and Data

Sample Selection

The samples used in this study are all from the China Stock Market Accounting Research (CSMAR) database, the largest financial and economic information database in China. The samples were selected from non-financial and non-insurance companies listed on the SHSE from 2004 to 2008. Quarterly data are used for this study. The CSRC required listed companies to disclose quarterly reports from 2002, but the disclosure format and contents were not specified until 2003. Therefore, the data of after 2003 are employed in this study, with a total of 4,810 observations, including 1,302 dividend payments, and 3,508 non-payments.

Main Variables

Shareholders Balancing Mechanism

The *SBM* is an indicator of shareholders balancing mechanism, to measure the governance role that is played by multiple large shareholders. We adopt the Z-index, the ratio of the proportion of shares held by shareholders, to denote the measure of SBM. To lay emphasis on the coalition among shareholders, we use the -Herfindahl-index, the representation of the shareholders' ownership concentration within different block holders, to substitute for the numerator and denominator of Z-index. *SBM* includes two sub-variables: *SBM_exo* and *SBM_eno*. *SBM_exo* is the SBM of non-controlling shareholders over the controlling shareholder, as measured by the following formula:

$$SBM\_exo = (l_2{}^2 + l_3{}^2 + l_4{}^2 + l_5{}^2)/c^2$$

where l_2–l_5 refer to the proportion of shares held by the second to fifth-largest shareholders. *SBM_eno* is the SBM of tradable shareholders over the controlling shareholder, as measured by the following formula:

$$SBM\_eno = (m_1{}^2 + m_2{}^2 + m_3{}^2 + m_4{}^2 + m_5{}^2)/c^2$$

where, m_1–m_5 refer to the proportion of shares held by the first to fifth-largest tradable shareholders. In both *SBM_exo* and *SBM_eno*, c denotes the proportion of shares held by the controlling shareholder, the largest shareholder in Chinese listed companies. Moreover, in the following empirical test, we also define another variable, ΔSBM_eno_t, which is the percentage variation of *SBM_eno* from the end of period $t-1$ to the end of period t.

$$\Delta SBM\,reeno_t = (SBM\_eno_t - SBM\_eno_{t-1})/SBM\_eno_{t-1}$$

where subscript t refers to the quarter when a dividend plan was announced, and $t-1$indicates the quarter prior to the announcement.[5]

[5] For example, the day of dividend plan announcement (DDPA) for company Shandong Aluminum (ID: 600205) is 31st January 2004, so t−1 is 2003.Q4, and t is 2004.Q1; the DDPA for company Suzhou Hi-tech (ID: 600736) is 14st April 2005, so t−1 is 2005.Q1, and t is 2005.Q2; for company Shengyi Technology (ID: 600183), the DDPA is 25st July 2006, so t−1 is 2006.Q2, and t is 2006.Q3; the DDPA for company Chutian Speed (ID: 600035) is 18st December 2006, so t−1 is 2006.Q3, and t is 2006.Q4.

Cash Dividend Payments

Div refers to cash dividend payments. It includes two sub-variables, *Div_le* and *Div_rang*. *Div_le* is an indicator of the level of corporate dividends. Following La Porta et al. (2000), we use the ratio of DPS (dividends per share) to EPS (earnings per share) as a symbol of *Div_le*. *Div_rang* is an ordered variable, representing the range of cash dividend payments with the values of 0, 1, 2, and 3. *Div_rang* equals 0 if a company doesn't pay cash dividends (that is, $Div\_le = 0$); it equals 1 if it pays a normal level of cash dividends (i.e., $0 < Div\_le < Median$, where *Median* is the median value of *Div_le* for companies with positive EPS and dividend payments in an industry over a particular year); it equals 2 if it pays high cash dividends (i.e., $Div\_le >= Median$); and it equals 3 if it pays abnormal cash dividends (i.e., DPS > 0, but the EPS < 0). The values of *Div_le* in companies with abnormal cash dividends are replaced by the maximums of *Div_le* in companies with dividend payments in each industry over a particular year.

Data Description

Table 18.1 presents the descriptive statistics for the four main variables of the sample. Variable *Div_le* has a large range of cash dividends. In abnormal, high, and normal dividend companies, the mean (median) values of *Div _le* are 6.554 (7.571), 1.650 (0.962), and 0.308 (0.288), respectively.

In abnormal cash dividend companies ($Div\_rang = 3$), SBM_exo_{t-1} reaches its largest values of mean (0.307) and median (0.135). The mean and median values in high cash dividend companies ($Div\_rang = 2$), which equal 0.221 and 0.030, respectively, are very much the same as in normal cash dividend companies ($Div\_rang = 1$), which equal 0.223 and 0.032. The result suggests that in Chinese listed companies, especially those with abnormal dividends, cash dividend payments could be either a manner of protection for the interests of minority shareholders or a way of expropriation by the controlling shareholder. Moreover, the mean (0.273) and median (0.074) values of companies without dividend ($Div\_rang = 0$) are larger than those of normal cash dividend companies ($Div\_rang = 1$) and high cash dividend companies ($Div\_rang = 2$), which would imply that cash dividend payments may be a manner of the controlling shareholder's expropriation.

Compared with SBM_exo_{t-1}, the mean and median values of SBM_eno_{t-1} in companies with different ranges of cash dividends are lower, suggesting that the proportion of shares held by tradable shareholders is far below than that of the non-controlling shareholders. SBM_exo_{t-1} and SBM_eno_{t-1} seem not to overlap each other. Furthermore, the direction of the variation of ΔSBM_eno_t in companies with a range of cash dividends is quite different from the changes of SBM_exo_{t-1}. ΔSBM_eno_t reaches the lowest level (mean value is 0.200) in abnormal cash dividend companies ($Div\_rang = 3$), and the highest level (mean value is 0.332) in companies

Table 18.1 Descriptive statistics

Variables	N	Mean	Median	S.D.	Min	Max
Panel A: Div_le_t						
$Div\_rang_t = 0$	3,508	0.000	0.000	0.000	0.000	0.000
$Div\_rang_t = 1$	620	0.308	0.288	0.262	0.023	5.388
$Div\_rang_t = 2$	654	1.650	0.962	1.624	0.219	9.731
$Div\_rang_t = 3$	28	6.554	7.571	3.087	1.058	9.950
Panel B: SBM_exo_{t-1}						
$Div\_rang_t = 0$	3,508	0.273	0.074	0.388	0.000	2.939
$Div\_rang_t = 1$	620	0.223	0.032	0.362	0.000	2.768
$Div\_rang_t = 2$	654	0.221	0.030	0.376	0.000	2.199
$Div\_rang_t = 3$	28	0.307	0.135	0.419	0.000	1.443
Panel C: SBM_eno_{t-1}						
$Div\_rang_t = 0$	3,508	0.068	0.003	0.210	0.000	2.695
$Div\_rang_t = 1$	620	0.070	0.005	0.189	0.000	1.275
$Div\_rang_t = 2$	654	0.068	0.003	0.227	0.000	2.250
$Div\_rang_t = 3$	28	0.035	0.002	0.116	0.000	0.454
Panel D: ΔSBM_eno_t						
$Div\_rang_t = 0$	3,508	0.332	0.001	1.063	−1.000	4.927
$Div\_rang_t = 1$	620	0.259	0.000	1.006	−0.993	4.870
$Div\_rang_t = 2$	654	0.287	−0.001	1.074	−1.000	4.672
$Div\_rang_t = 3$	28	0.200	0.162	0.937	−0.961	3.556

Note: Div_le_t, is an indicator of the level of corporate dividends, measured by the ratio of dividends per share to EPS. SBM_exo_{t-1} is the measure of the SBM of non-controlling shareholders over the controlling shareholder. $SBM\_exo = (l_2^2 + l_3^2 + l_4^2 + l_5^2)/c^2$, l_2–l_5 refers to the proportion of shares held by the second to the fifth-largest shareholders; c means the proportion of shares held by the controlling shareholder, the largest shareholder in Chinese listed companies. SBM_eno_{t-1} is the measure of the SBM of tradable shareholders over the controlling shareholder. $SBM\_eno = (m_1^2 + m_2^2 + m_3^2 + m_4^2 + m_5^2)/c^2$, m_1–m_5 refers to the proportion of shares held by the first to the fifth-largest tradable shareholders. ΔSBM_eno_t is the percentage variation of SBM_eno from the end of the period t–1 to the end of the period t. $\Delta SBM\_eno_t = (SBM\_eno_t - SBM\_eno_{t-1})/SBM\_eno_{t-1}$

without dividend payments ($Div\_rang = 0$). One reasonable explanation is that tradable shareholders may perceive cash dividend payments (in particular the abnormal level of cash dividend payments) as the expropriation behavior of the controlling shareholder.

Models

We construct four regression models in correspondence to the former three pairs of hypotheses. Models 1 and 2, based on the assumption of an exogenous corporate ownership structure, examine the effect of the SBM of non-controlling shareholders on corporate dividend payments. Models 3 and 4, based on the assumption of an endogenous corporate ownership structure, investigate the influence of dividend payments on the SBM of tradable shareholders.

Models Based on the Exogeneity of Ownership Structure[6]

Since the pioneering work of Morck et al. (1988), exogeneity of ownership structure has been the most common assumption in the corporate finance field. The primary purpose of assuming exogeneity of ownership structure is to scrutinize whether cash dividend payments are a method of the controlling shareholder's expropriation or protection of the corporate minority shareholders. Hence, we specify Model 1:

$$Div\_le_t = \alpha_0 + \alpha_1 SBM\_exo_{t-1} + \alpha_2 Div\_premium_{t-1} + \alpha_3 Cflw_{t-1} + \alpha_4 Fasset_{t-1} + \alpha_5 Level_{t-1} + \alpha_6 Size_{t-1} + \alpha_7 \sum Year_{t-1} + \alpha_8 \sum Ind_{t-1} + \varepsilon_{t-1} \tag{18.1}$$

where dependent variable Div_le_t denotes the level of corporate cash dividends payments. SBM_exo_{t-1} is the symbol of the SBM of the second to fifth-largest shareholders over the controlling shareholder in the end of quarter $t-1$. The negative coefficient of SBM_exo_{t-1} is predicted. $Div\_premium_{t-1}$, as an indicator of dividend premium (Baker and Wurgler 2004), is the ratio of market value to book value.

In the following regression analysis, $Div\_premium_{t-1}$ is replaced by the industry and year adjusted dividend premium, which means $Div\_premium_{t-1}$ minus its industry mean values calculated in each year. $Div\_premium_{t-1}$ indicates the demand for cash dividends of shareholders. $Cflw_{t-1}$ indicates the firm's cash holdings, which equals the ratio of cash equivalent assets (cash and investment holding) to total assets. As companies with higher cash holdings normally are more inclined to pay cash dividends, the coefficient of $Cflw_{t-1}$ is predicted to be positive.

$Fasset_{t-1}$, the ratio of a firm's fixed assets to total assets, is used to study the effect of the acquisitions of fixed assets on corporate dividend payments. The acquisitions of fixed assets reduce the level of corporate free cash flow and may act as a way of controlling shareholder's expropriation. $Fasset_{t-1}$ is expected to have a negative relationship with Div_le_t. $Level_{t-1}$, an indicator of corporate financial leverage, is the ratio of the firm's total debt to total assets, representing the debtors' supervision over the controlling shareholder. In corporate governance theory, debtors' supervision, as a substitute for shareholders' supervision, could inhibit the expropriation of

[6] The research on the exogeneity of a firm's ownership structure can be traced back to the early studies on corporate governance by Jensen and Meckling (1976), who believe firm performance can be affected by its ownership structure, and propose an exogenous feature of a firm's ownership structure. A number of studies in the literature support the exogeneity of ownership structure. For example, Morck et al. (1988) believe that ownership structure has no linear effect on firm performance. Based on the exogeneity of ownership structure and using the piecewise linear ordinary least square regression, Morck et al. (1988) found that different levels of ownership structure have diverse influences on firm performance, as measured by Tobin'Q. Thus, Morck et al. (1988) suggest the, "convergence of interests," and "entrenchment effects" hypothesis. McConnell and Servaes (1990) show that there is no linear relation between firm performance and corporate ownership structure with an inflection point between 40 and 50%, and conclude that ownership structure is an exogenous but not endogenous variable by which firm performance is affected.

the controlling shareholder. $Size_{t-1}$, the size of firms, as measured by the natural log of firm's total assets, has dual functions on Div_le_t. On the one hand, monitoring and agency costs in large firms can be greater than in small firms. On the other hand, large firms might generate economies of scale in monitoring, leading to a lower Div_le_t. $Year_{t-1}$ is the year dummy variable. Ind_{t-1} is the industry dummy variable. We choose 12 out of the 13 industries from the Industry Classification Standard of the CSRC, eliminating the financial and insurance industry.

To illustrate the disparity in the effects of the SBM on corporate cash dividend payments in companies with different levels of dividends, we construct Model 2, which contains the interaction between SBM_exo_{t-1} and Div_rang_t:

$$\begin{aligned} Div\_le_t = {} & \alpha_0 + \alpha_1 SBM\_exo_{t-1} + \alpha_2 SBM\_exo_{t-1} * Div\_range_t + \alpha_3 Div\_premium_{t-1} \\ & + \alpha_4 Cflw_{t-1} + \alpha_5 Fasset_{t-1} + \alpha_6 Level_{t-1} + \alpha_7 Size_{t-1} + \alpha_8 \sum Year_{t-1} \\ & + \alpha_9 \sum Ind_{t-1} + \varepsilon_{t-1} \end{aligned} \tag{18.2}$$

where SBM_exo_{t-1}* Div_rang_t is the interaction between SBM_exo_{t-1} and Div_rang_t.

Models Assuming Endogeneity of Ownership Structure[7]

Jensen et al. (1992) was the first study to consider the endogeneity of ownership structure by exploring the effect of dividends on corporate ownership. They constructed a simulation equation model to analyze the interactions among management ownership, debt, and dividends, and found that management ownership has a significant negative effect on corporate cash dividends. Following Jensen et al.'s (1992) endogeneity of ownership structure, we examine the agent conflicts between minority and controlling shareholders of companies listed on the Chinese stock market and study the effect of dividends on the SBM. The following model is used:

[7] The exogeneity assumption of ownership structure is challenged by the endogeneity hypothesis of ownership structure (e.g., Demsetz 1983; Demsetz and Lehn 1985; Cho 1998; Himmelberg et al. 1999; Demsetz and Villalonga 2001; Harvey et al. 2004; Cheung and Wei 2006). The endogeneity of ownership structure argues that a firm's ownership structure arises endogenously and that it has no systematic effects on firm performance (Demsetz 1983). Demsetz and Lehn (1985) provide empirical evidence of the endogeneity of firm's ownership structure, revealing no significant relationships between firm performance and ownership structure. Himmelberg et al. (1999) find that there is a quadratic relationship between firm performance and ownership structure after the endogeneity is controlled, while Demsetz and Villalonga (2001) show corporate ownership structure has a significant negative effect on firm performance for ordinary least square estimation, but no statistically significant relation between these two variables by the two stage least square (2sls) estimation when the endogeneity is controlled.

$$\Delta SBM\_eno_t = \alpha_0 + \alpha_1 Div\_le_t + \alpha_2 Stpc\_se_t + \alpha_3 Beta_t + \alpha_4 Rform_t + \alpha_5 Tobin'Q_{t-1} + \alpha_6 Fasset_{t-1} + \alpha_7 Level_{t-1} + \alpha_8 Size_{t-1} + \alpha_9 \sum Year_{t-1} + \alpha_{10} \sum Ind_{t-1} + \varepsilon_{t-1} \quad (18.3)$$

where the dependent variable ΔSBM_eno_t is the percentage change in SBM_eno, which is the SBM of tradable shareholders over the controlling shareholder. Div_le_t is an indicator of the level of cash dividend payments. The coefficient α_1 of Div_le_t is to explain the effect of cash dividend payments on the SBM of tradable shareholders through the quarter when the dividend plan announcement is made. If cash dividend payments support the dividend protection (dividend tunneling) theory, the SBM of tradable shareholders increases (decreases) after the day of dividend plan announcement and α_1 is positive (negative). To control for the influence of stock price and the firm's risks on ΔSBM_eno_t, we introduce variables $Stpc\_se_t$ and $Beta_t$.

$Stpc\_se_t$ is the stock price premium as measured by the mean value of residuals from the capital asset pricing model (CAPM), estimated using a firm's daily data throughout a quarter from the end of $t-1$ to the end of t (Himmelberg et al. 1999). A higher mean value of residuals suggests a higher level of corporate price premium in comparison to that of the whole capital market, and the stocks of such companies are more popular among the tradable shareholders. The coefficient of $Stpc\_se_t$ is estimated positive. $Beta_t$ is a symbol of the Beta value of Chinese listed companies and equals the mean value of the coefficients from a CAPM model, estimated using daily data for a quarter from the end of $t-1$ to the end of t. We predict that $Beta_t$ has a negative effect on ΔSBM_eno_t. $Rform_t$ is the dummy variable for the non-tradable share reform that took place from 2005 to 2007. It equals 1 if the data is from the day after the non-tradable share reform, and 0 otherwise.

When studying the endogeneity of ownership structure, special attention should be paid to the relationship between ownership structure and corporate value (Jensenet al. 1992; Demsetz and Villalonga 2001). We introduce $Tobin'Q_{t-1}$ as a symbol of corporate value. $Tobin'Q_{t-1}$ = (market value of tradable shares + market value of non-tradable shares + book value of debts)/(total assets – net value of intangible assets). Following Yuan et al. (2008), we estimate the market value of non-tradable shares as the number of total non-tradable shares multiplied by net assets per share. Other variables are defined in the same way as in Model 1. We predict that the coefficient of $Fasset_{t-1}$ is negative and of $Level_{t-1}$ positive. We also forecast the dual functions between $Size_{t-1}$ and ΔSBM_eno_t.

We build Model 4 to identify if the effect of Div_le_t on ΔSBM_eno_t is influenced by the non-tradable share reform:

$$\Delta SBM\_eno_t = \alpha_0 + \alpha_1 Div\_le_t + \alpha_2 Div\_le_t * Rform_t + \alpha_3 Stpc\_se_t + \alpha_4 Beta_t + \alpha_5 Rform_t + \alpha_6 Tobin'Q_{t-1} + \alpha_7 Fasset_{t-1} + \alpha_8 Level_{t-1} + \alpha_9 Size_{t-1} + \alpha_{10} \sum Year_{t-1} + \alpha_{11} \sum Ind_{t-1} + \varepsilon_{t-1} \quad (18.4)$$

where, Div_le_t* $Rform_t$ is the interaction term between Div_le_t and $Rform_t$.

Empirical Results

Correlation Analysis

Table 18.2 reports the results of Pearson and Spearman correlation analysis among all the variables in the four regression models. The Pearson coefficients for Div_le_t with SBM_exo_{t-1}, and $\triangle SBM\_eno_t$ with Div_le_t are not significant, whereas the Spearman coefficients for these two groups are significantly negative at the level of 0.05 and 0.01, respectively. The coefficients in Pearson correlation (0.303) and Spearman correlation (0.969) for SBM_exo_{t-1}*Div_rang_t with Div_le_t are both significantly positive at the level of 0.01, which suggests that Div_le_t and SBM_exo_{t-1} are more likely to have a positive relation in companies with higher levels of dividends. The significant positive relationship between Div_le_t and the interaction of SBM_exo_{t-1} and Div_rang_t, and the significant negative relationship between Div_le_t and SBM_exo_{t-1} suggest that there are different effects between SBM and cash dividend payments in companies with different level of dividends. At the significance level of 0.01, $Rform_t$ and $\triangle SBM\_eno_t$ have positive correlations with each other, indicating the positive influence of the non-tradable share reform on the SBM of tradable shareholders.

OLS Regression

We carry out the ordinary least squares (OLS) regression analysis on the four empirical models. The purpose of the OLS regression is to study the effects between the cash dividend payments and corporate SBM, with a view to addressing whether cash dividend payments in China's capital market can be explained by dividend protection or dividend tunneling theories. In the OLS regression analysis, we examine the effect of SBM of non-controlling shareholders on cash dividend payments (Models 1 and 2) and its influence on the variation of the SBM of tradable shareholders (Models 3 and 4). Panel A of Table 18.3 provides the OLS regression results of Models 1 and 2, and Panel A of Table 18.4 provides the OLS regression results of Models 3 and 4.

Regressions Assuming Exogeneity of SBM

Panel A of Table 18.3 reports the regression results of Model 1 in reference to the exogeneity assumption of ownership structure, which explores the effects of the SBM of non-controlling shareholders on the level of cash dividend payments. While the coefficient of SBM_exo_{t-1} in Model 1 is insignificant as shown in Panel A, it is significantly negative in Model 2, with the interaction between SBM_exo_{t-1} and Div_rang_t at the level of 0.01. Furthermore, the R-square in Model 2 is larger

Table 18.2 Correlation analysis

Variables	$\triangle SBM\_eno_t$	Div_le_t	SBM_exo_{t-1}	SBM_exo_{t-1}*Div_rang_t	Div_le_t*$Rform_t$	$Div\_premium_{t-1}$	$Cflw_{t-1}$	$Stpc\_se_t$	$Beta_t$	$Rform_t$	$Tobin'Q_{t-1}$	$Fasset_{t-1}$	$Level_{t-1}$	$Size_{t-1}$
$\triangle SBM\_eno_t$	1	−0.018	−0.02	−0.028*	0.024	−0.028*	−0.027*	0.075***	−0.066***	0.083***	0.003	−0.022	0.017	−0.041***
Div_le_t	−0.029**	1	−0.021	0.303***	0.765***	−0.040***	−0.01	−0.025*	0.038***	0.026*	−0.027*	0.014	−0.042***	0.070***
SBM_exo_{t-1}	−0.016	−0.074***	1	0.392***	−0.027*	0.077***	−0.039***	0.042***	0	−0.02	0.040***	−0.027*	0.037**	−0.133***
SBM_exo_{t-1}*Div_rang_t	−0.034**	0.969***	0.019	1	0.199***	0.011	0.004	−0.006	0.002	0.028*	−0.01	0.013	−0.031**	0.049***
Div_le_t*$Rform_t$	0.021	0.749***	−0.056***	0.745***	1	−0.019	−0.008	−0.006	0.02	0.218***	−0.014	0.016	−0.026*	0.073***
$Div\_premium_{t-1}$	−0.023	−0.011	0.085***	0.004	0.030**	1	−0.135***	−0.037***	−0.182***	0.135***	0.420***	−0.102***	0.245***	−0.326***
$Cflw_{t-1}$	−0.012	0.069***	−0.065***	0.093***	0.083***	−0.192***	1	0.008	−0.027*	−0.019	−0.030**	0.089***	0.007	0.038***
$Stpc\_se_t$	0.020	−0.060***	0.050***	−0.053***	−0.052***	−0.063***	0.041***	1	−0.092***	0.028*	0.019	−0.067***	0.090***	−0.129***
$Beta_t$	−0.118***	−0.009	−0.018	−0.016	−0.015	−0.131***	−0.043***	0.023	1	−0.018	−0.099***	−0.074***	−0.119***	0.016
$Rform_t$	0.076***	0.087***	0.007	0.097***	0.397***	0.139***	0.000	−0.036**	−0.008	1	0.030**	−0.015	−0.060***	0.071***
$Tobin'Q_{t-1}$	−0.030**	−0.047***	0.090***	−0.028*	0.027*	0.912***	−0.166***	−0.091***	−0.089***	0.225***	1	−0.039***	0.533***	−0.187***
$Fasset_{t-1}$	−0.000	0.161***	−0.131***	0.164***	0.137***	−0.286***	0.243***	−0.193***	−0.074***	0.069***	−0.272***	1	−0.012	0.535***
$Level_{t-1}$	0.010	−0.138***	0.064***	−0.123***	−0.071***	−0.137***	0.072***	0.122***	−0.089***	−0.011	−0.109***	0.051***	1	−0.171***
$Size_{t-1}$	−0.011	0.187***	−0.175***	0.185***	0.158***	−0.279***	0.088***	−0.209***	−0.016	0.086***	−0.284***	0.764***	0.153***	1

Note: ΔSBM_eno_t is the percentage variation of SBM_eno from the end of period $t-1$ to the end of period t. $\Delta SBM\_eno_t = (SBM\_eno_t\text{-}SBM\_eno_{t-1})/SBM\_eno_{t-1}$, where SBM_eno_{t-1} is the measure of the SBM of tradable shareholders over the controlling shareholder. $SBM\_eno = (m_1^2 + m_2^2 + m_3^2 + m_4^2 + m_5^2)/c^2$, m_1–m_5 refers to the proportion of shares held by the first to fifth-largest tradable shareholders; c means the proportion of shares held by the controlling shareholder. Div_le_t,, an indicator of the level of corporate dividends, equals the ratio of dividends per share to EPS. SBM_exo_{t-1} is the measure of the SBM of non-controlling shareholders over the controlling shareholder. $SBM\_exo = (l_2^2 + l_3^2 + l_4^2 + l_5^2)/c^2$, l_2–l_5 refers to the proportion of shares held by the second to the fifth-largest shareholders; c means the proportion of shares held by the controlling shareholder. SBM_exo_{t-1}*Div_rang_t is the interaction between SBM_exo_{t-1} and Div_rang_t, where Div_rang_t, is the range of dividend payments: 1 if paying normal level cash dividends; 2 if paying high level cash dividends; 3 if paying abnormal level cash dividends; 0 otherwise. Div_le_t*$Rform_t$ is the interaction between Div_le_t and $Rform_t$, where $Rform_t$ is the dummy variable for the non-tradable share reform from 2005 to 2007; 1 if the data is from the post-reform date; 0 otherwise. $Div\_premium_{t-1}$ is the dividend premium measured by the ratio of the market value to book value adjusted by the industry mean values calculated in each year. $Cflw_{t-1}$ is the ratio of cash equivalent assets (cash and investment holding) to total assets. $Stpc\_se_t$ refers to the stock price premium, which is the mean value of residuals from a CAPM model estimated using a firm's daily data throughout a quarter from the end of $t-1$ to the end of t. $Beta_t$, the Beta value of Chinese listed companies, is the mean value of the coefficients from a CAPM model estimated using daily data for a quarter from the end of $t-1$ to the end of t. $Tobin'Q_{t-1}$ is the corporate value of Chinese listed companies. $Fasset_{t-1}$ is the ratio of a firm's fixed assets to total assets. $Level_{t-1}$, financial leverage, equals the ratio of a firm's total debt to total assets. $Size_{t-1}$, the size of firm, equals the natural log of a firm's total assets. $Year_{t-1}$ and Ind_{t-1} are year and industry dummy variables

***, **, *Denote significance at the 1, 5 and 10% levels, respectively

Table 18.3 Regression results on the exogeneity of SBM

Panel A: OLS regression for Models 1 and 2					Panel B: 2SLS regression for Models 1 and 5			
	Model 1		Model 2		Model 1		Model 5	
Variables	Coefficient	T	Coefficient	T	Coefficient	Z	Coefficient	Z
Intercept	−0.553*	−1.68	0.386	1.18	0.480***	3.98	0.330***	3.64
SBM_exo_{t-1}	−0.011	−0.27	−0.452***	−14.76	−0.816**	−2.55		
SBM_exo_{t-1}*Div_rang_t			1.135***	11.65			1.540***	2.69
$Div\_premium_{t-1}$	−0.002	−0.06	−0.025	−0.94	0.021	0.48	−0.069**	−2.05
$Cflw_{t-1}$	−0.001	−1.01	−0.001	−0.96	−0.001	−0.74	−0.001	−0.67
$Fasset_{t-1}$	−0.152**	−1.96	−0.181**	−2.52	−0.140	−1.50	−0.190**	−2.14
$Level_{t-1}$	−0.034**	−2.09	−0.018**	−2.07	−0.031*	−1.73	−0.015	−0.83
$Size_{t-1}$	0.040***	2.68	0.002	0.11				
$Year_{t-1}$	Yes		Yes		Yes		Yes	
Ind_{t-1}	Yes		Yes		Yes		Yes	
N	4,794		4,794		4,794		4,794	
F	2.83		16.35		2.04		2.40	
Prob > F	0.0000		0.0000		0.0040		0.0004	
Adj-R^2	0.0094		0.1577					

Note: The dependent variable is Div_le_t. Div_le_t, measures the level of corporate dividend and equals the ratio of dividends per share to EPS. SBM_exo_{t-1} is the measure of the SBM of non-controlling shareholders over the controlling shareholder. $SBM\_exo = (l_2^2 + l_3^2 + l_4^2 + l_5^2)/c^2$, l_2–l_5 refers to the proportion of shares held by the second to the fifth-largest shareholders; c means the proportion of shares held by the controlling shareholder. SBM_exo_{t-1}*Div_rang_t is the interaction between SBM_exo_{t-1} and Div_rang_t, where Div_rang_t, is the range of dividend payments: 1 if paying normal level cash dividends; 2 if paying high level cash dividends; 3 if paying abnormal level cash dividends; 0 otherwise. $Div\_premium_{t-1}$ is the dividend premium measured by the ratio of the market value to book value adjusted by the industry mean values calculated in each year. $Cflw_{t-1}$ is the ratio of cash equivalent assets (cash and investment holding) to total assets. $Fasset_{t-1}$ is the ratio of firm's fixed assets to total assets. $Level_{t-1}$, financial leverage, equals the ratio of firm's total debt to total assets. $Size_{t-1}$, the size of firms, equals the natural log of firm's total assets. Yea_{t-1} and Ind_{t-1} are year and industry dummy variables

***, **, *Denote significance at the 1, 5 and 10% levels, respectively

Table 18.4 Regression results on the endogeneity of SBM

Panel A: OLS regression for Models 3 and 4					Panel B: 2SLS regression for Models 3 and 6			
	Model 3		Model 4		Model 3		Model 6	
Variables	Coefficient	T	Coefficient	T	Coefficient	Z	Coefficient	Z
Intercept	1.072***	3.50	1.088***	3.55	0.450**	2.32	0.225	1.44
Div_le_t	−0.015	−1.16	−0.048**	−2.54	−0.997**	−2.03		
Div_le_t*$Rform_t$			0.055**	2.06			−1.228**	−2.04
$Stpc\_se_t$	0.462***	2.76	0.461***	2.75	0.314*	1.64	0.392**	2.24
$Beta_t$	−0.160***	−3.34	−0.160***	−3.33	−0.097	−1.38	−0.119*	−1.83
$Rform_t$	0.094**	2.11	0.080*	1.75	0.205**	2.47	0.497**	2.39
$Tobin'Q_{t-1}$	−0.009	−1.34	−0.009	−1.33	−0.007	−0.71	−0.010	−1.04
$Fasset_{t-1}$	−0.020	−0.20	−0.022	−0.23	−0.168	−1.18	−0.073	−0.57
$Level_{t-1}$	0.012	0.66	0.011	0.61	−0.016	−0.50	0.014	0.48
$Size_{t-1}$	−0.041***	−3.04	−0.041***	−3.07				
$Year_{t-1}$	Yes		Yes		Yes		Yes	
Ind_{t-1}	Yes		Yes		Yes		Yes	
N	4,810		4,810		4,810		4,810	
F	4.65		4.72		2.57		2.64	
Prob > F	0.0000		0.0000		0.0001		0.00000	
Adj-R^2	0.0215		0.0221					

Note: The dependent variable is ΔSBM_eno_t. ΔSBM_eno_t is the percentage variation of *SBM_eno* from the end of period $t-1$ to the end of period t. $\Delta SBM\_eno_t = (SBM\_eno_t – SBM\_eno_{t-1})/SBM\_eno_{t-1}$, where SBM_eno_{t-1} is the measure of the SBM of tradable shareholders over the controlling shareholder. $SBM\_eno = (m_1^2 + m_2^2 + m_3^2 + m_4^2 + m_5^2)/c^2$, m_1–m_5 refers to the proportion of shares held by the first to fifth-largest tradable shareholders; c means the proportion of shares held by the controlling shareholder. Div_le_t, an indicator of the level of corporate dividends, equals the ratio of dividends per share to EPS. Div_le_t*$Rform_t$ is the interaction between Div_le_t and $Rform_t$, where $Rform_t$ is the dummy variable for the non-tradable share reform from 2005 to 2007; 1 if the data is from the post-reform date; 0 otherwise. $Stpc\_se_t$ refers to the stock price premium, which is the mean value of residuals from a CAPM model estimated using a firm's daily data throughout a quarter from the end of $t-1$ to the end of t. $Beta_t$, the Beta value of Chinese listed companies, is the mean value of the coefficients from a CAPM model estimated using daily data for a quarter from the end of $t-1$ to the end of t. $Tobin'Q_{t-1}$ is the corporate value of Chinese listed companies. $Fasset_{t-1}$ is the ratio of a firm's fixed assets to total assets. $Level_{t-1}$, financial leverage, equals the ratio of a firm's total debt to total assets. $Size_{t-1}$, the size of firm, equals the natural log of a firm's total assets. $Year_{t-1}$ and Ind_{t-1} are year and industry dummy variables

***, **, *Denote significance at the 1, 5 and 10% levels, respectively

than that in Model 1.[8] The negative effect of SBM_exo_{t-1} on Div_le_t in Model 2 suggests that companies with higher levels of SBM pay lower levels of cash dividends. This confirms the dividend tunneling theory.

In Model 2 of Panel A, the coefficient of the interaction term SBM_exo_{t-1}*Div_rang_t is significantly positive at the level of 0.01, and its magnitude is larger than that of SBM_exo_{t-1}, which means that there are different effects of SBM_exo_{t-1} on Div_le_t in companies with different levels of cash dividends and those without cash dividends. The effects of SBM_exo_{t-1} on the dependent variable Div_le_t in Model 2 is $-0.452 + 1.135$*Div_rang_t. For companies without cash dividend payments ($Div\_rang_t = 0$), the SBM of non-controlling shareholders plays a constructive role on the controlling shareholder. However, for companies paying cash dividends ($Div\_rang_t = 1$, 2 and 3), particularly those with high or abnormal dividends, the constrictive effect ceases to exist and even appears positive. This suggests that the cash dividend payments for companies paying high or abnormal dividends are either for the protection of minority shareholders or joint expropriation by the controlling and non-controlling large shareholders.

The regression results of other variables shown in Panel A of Table 18.3 reveal an insignificant coefficient of $Cflw_{t-1}$, which means that the level of cash dividends is not influenced by firm's cash holdings. This is mainly because the level of cash dividends is decided without references to the quantity of cash holdings, especially in high and abnormal dividend companies, where expropriation or joint expropriation exists. Also, creditors could play a supervisory role in cash dividend payments, and acquisitions of fixed assets could be a substitute for tunneling, as shown by the significant negative coefficient of $Level_{t-1}$ and $Fasset_{t-1}$.

Regressions Assuming Endogeneity of SBM

Panel A of Table 18.4 reports the regression results of Models 3 and 4, based on the endogeneity assumption of ownership structure. The significant negative coefficient of Div_le_t in Model 4, which includes the interaction term of Div_le_t and $Rform_t$, reveals that the cash dividend payments can be explained by the dividend tunneling theory.[9] The SBM of tradable shareholders increases (decreases) in companies with lower (higher) cash dividend payments. Both the negative coefficient of Div_le_t in Model 4 and the positive coefficient of SBM_exo_{t-1}*Div_rang_t in Model 2 uncover the nature of cash dividends as joint expropriation by controlling and non-controlling large shareholders.

[8] There is no multicollinearity in Model 2. The mean value of VIF without year and industry variables in Model 2 is 1.32, with the maximum at 1.72, and the minimum at 1.03. The VIF for year and industry variables maximizes at 8.87 and minimizes at 1.82.

[9] There is also no multicollinearity in Model 4. The mean value of VIF without year and industry variables in Model 4 is 1.65, with the maximum at 2.57, and the minimum at 1.07. The VIF for year and industry variables maximizes at 8.88 and minimizes at 1.79.

More interestingly, the interaction variable Div_le_t*$Rform_t$ has a significant positive coefficient, and its absolute value is larger than that of Div_le_t, probably because of a positive effect of the cash dividends on the SBM of tradable shareholders after the non-tradable share reform. There are three possible reasons for this positive effect: first, the SBM of tradable shareholders increases after the non-tradable share reform, for example, the coefficient of $Rform_t$ is significantly positive. Second, during the non-tradable share reform, the extraordinary prosperity of the stock market causes the SBM to rise, for example, the Shanghai Composite Index soared from 1,181 in early 2006 to 5,181 in early 2008.[10] Third, there may be endogenous features of the variables Div_le_t and Div_le_t*$Rform_t$, which may cause a biased estimation of Model 4.

Except for $Tobin'Q_{t-1}$, $Fasset_{t-1}$, and $Level_{t-1}$, the coefficients of other variables are all significant, which suggests that companies with higher stock price premiums (proxied by $Stpc\_se_t$), lower risks (proxied by $Beta_t$), and smaller scales (proxied by $Size_{t-1}$) will increase to a larger degree the SBM of tradable shareholders. Additionally, the SBM of tradable shareholders increases after the non-tradable share reform, as indicated by the positive coefficient of $Rform_t$.

Test for Robustness

Instrumental Variables, Related Tests and 2sls Regression

The four models based on the exogeneity and endogeneity of ownership structure consider the SBM of non-controlling large shareholders as one of the factors influencing cash dividend payments (shown in the regression results of Models 1 and 2) and cash dividend payments as one of the influencing factors on the SBM of tradable shareholders (shown in the regression results of Models 3 and 4). Then, the method of instrumental variables (IV) estimation to control the endogeneity of the SBM and cash dividends is used to study the effect of the SBM of non-controlling shareholders on cash dividend payments, and the effect of cash dividends on the SBM of tradable shareholders. Two stage least square (2sls) is an estimation method used in the IV regression. The core of the method lies in the choice of the instruments used for the estimation. Following Himmelberg et al. (1999), we use the variables of *Size*, the log of firm total assets, and it's square, $(Size)^2$, as our instrumental variables in the 2sls regression.

[10] The mean values of ΔSBM_eno_t in companies with (without) cash dividends are 0.081(0.251) and 0.372(0.400) before and after the non-tradable share reform. The disparity of ΔSBM_eno_t before and after the reform is the largest in companies with high and abnormal dividends. For companies with high (abnormal) dividends, the mean values of ΔSBM_eno_t are 0.084(−0.051) and 0.399 (0.490), before and after the non-tradable share reform, respectively.

In the 2sls estimation using the IV method, three tests, namely the endogeneity test, weak instruments test and overidentifying test, were executed. The results are presented in Panel A of Table 18.5. In the endogeneity test, the Wu-Hausman F statistic and Durbin-Wu-Hausman χ^2 statistic are strongly significant at the level of 0.01 for Models 1 and 3, weakly significant at the level of 0.05 for Model 4, and insignificant for Model 2, which signify that both SBM_exo_t in Model 1 and Div_le_t in Model 3 have endogeneity, and neither SBM_exo_t and SBM_exo_{t-1}*Div_rang_t in Model 2 nor Div_le_t and Div_le_t*$Rform_t$ in Model 4 have strong endogeneity. Models 5 and 6, below, are designed to test the endogeneity relationship between the interactions and the dependent variables.

$$Div\_le_t = \alpha_0 + \alpha_1 SBM\_exo_{t-1} * Div\_range_t + \alpha_2 Div\_premium_{t-1} + \alpha_3 Cflw_{t-1} + \alpha_4 Fasset_{t-1} + \alpha_5 Level_{t-1} + \alpha_6 Size_{t-1} + \alpha_7 \sum Year_{t-1} cr \tag{18.5}$$

$$\Delta SBM\_eno_t = \alpha_0 + \alpha_1 Div\_le_t * Rform_t + \alpha_2 Stpc\_se_t + \alpha_3 Beta_t + \alpha_4 Rform_t + \alpha_5 Tobin'Q_{t-1} + \alpha_6 Fasset_{t-1} + \alpha_7 Level_{t-1} + \alpha_8 Size_{t-1} + \alpha_9 \sum Year_{t-1} + \alpha_{10} \sum Ind_{t-1} + \varepsilon_{t-1} \tag{18.6}$$

Model 5 is a variant of Model 2 without the variable of SBM_exo_t, while Model 6 is a variant of Model 4 without the variable of Div_le_t.

Panel A of Table 18.5 also presents the Wu-Hausman F test and Durbin-Wu-Hausman χ^2 test for endogeneity of interaction terms SBM_exo_{t-1}*Div_rang_t and Div_le_t*$Rform_t$ of Models 5 and 6. The results display that SBM_exo_{t-1}*Div_rang_t in Model 5 and Div_le_t*$Rform_t$ in Model 6 are both endogenous variables. From above, the instrumental variable regressions using the 2sls estimation are mainly for Models 1 and 5 (on controlling the endogeneity of SBM) and Models 3 and 6 (on controlling the endogeneity of cash dividend payments). Panel A of Table 18.5 also shows the Anderson-Rabin Wald χ^2 statistic and Stock-Wright LM χ^2 statistic. Both test the validity of IV, and are significant for Models 1 and 5 and Models 3 and 6 at the level of 0.05. Additionally, the insignificant Sargan χ^2 statistic for an overidentifying test suggests that there are no overidentifying restrictions in the four 2sls estimation models.

Panel B of Tables 18.3 and 18.4 shows the 2sls regression results for controlling of the endogeneity of SBM and cash dividend payments. Panel B of Table 18.3 displays the coefficients of the regression of Model 1 (Model 5), when controlling the endogeneity SBM_exo_{t-1} (SBM_exo_{t-1}*Div_rang_t) is significantly negative (positive) at the level of 0.01; this is the same result as shown in Model 2 of Table 18.3. The absolute value of SBM_exo_{t-1} in Panel B of Table 18.3 is 0.816, larger than that in Panel A at 0.452, suggesting that the constrictive effect of SBM_exo_{t-1} on Div_le_t is strengthened when the endogeneity of SBM_exo_{t-1} is controlled. Similarly, the coefficient of SBM_exo_{t-1}*Div_rang_t in Panel B (1.540)

Table 18.5 Statistical tests and regression results of event study

Panel A: Results for endogeneity, weak instruments and over-identifying test							
Statistical tests		Model 1	Model 2	Model 5	Model 3	Model 4	Model 6
Endogeneity test	Wu-Hausman F	6.874***	1.091	3.735**	7.315***	3.893**	7.480***
	Durbin-Wu-Hausman $\chi2$	6.895***	2.192	3.740**	7.341***	7.815**	7.506***
Weak instruments test	Anderson-Rabin Wald $\chi2$	8.19**	8.19**	8.19**	7.90**	7.90**	7.90**
	Stock-Wright LM $\chi2$	8.17**	8.17**	8.17**	7.89**	7.89**	7.89**
Over-identifying test	Sargan $\chi2$	0.933		1.592	0.165		0.254

Panel B: CAR and *T*-test							
Window	CAR	T	N	Window	CAR	T	N
[−1,1]	−0.007**	−2.31	1,233	[-2,0]	−0.009***	−4.55	1,233
[−2,2]	−0.011***	−3.42	1,233	[-4,0]	−0.009***	−3.67	1,233
[−5,5]	−0.024***	−5.37	1,233	[0, 2]	−0.013***	−5.30	1,233
[−1,3]	−0.013***	−3.80	1,233	[0, 4]	−0.020***	−6.60	1,233
[−1,7]	−0.023***	−5.30	1,233	[-3,7]	−0.030***	−7.07	1,233

Panel C: Results for regression of CAR on cash dividend payment							
Window	Category		Coefficient	T	F	Adj-R^2	N
[0, 2]	I. *Both*		−0.003 [−0.057]**	−2.05	6.97***	0.1002	1,233
	II. SBM_exo_t	$>= Median$	−0.003 [−0.070]*	−1.76	4.55***	0.1170	617
		$<= Median$	−0.002 [−0.054]	−1.39	4.15***	0.1054	616
	III. SBM_eno_t	$>= SBM\_eno_{t-1}$	−0.003 [−0.069]	−1.51	2.12***	0.0503	489
		$<= SBM\_eno_{t-1}$	−0.003 [−0.064]	−1.37	1.77**	0.0344	498
[−1,3]	I. *Both*		−0.003	−2.11	7.71***	0.111	1,233
	II. SBM_exo_t	$>= Median$	−0.005 [−0.086]**	−2.17	4.79***	0.1240	617
		$<= Median$	−0.002 [−0.039]	−1.01	4.39***	0.1126	616
	III. SBM_eno_t	$>= SBM\_eno_{t-1}$	−0.002 [−0.047]	−1.02	1.89***	0.0403	489
		$<= SBM\_eno_{t-1}$	−0.004 [−0.086]*	−1.86	2.44***	0.0627	498

(continued)

Table 18.5 (continued)

Panel C: Results for regression of CAR on cash dividend payment							
Window	Category		Coefficient	T	F	Adj-R^2	N
[−5,5]	I. *Both*		−0.007 [−0.094]***	−3.39	7.43***	0.1072	1,233
	II. SBM_exo_t	$> = Median$	−0.009 [−0.114]***	−2.87	4.66***	0.1203	617
		$<=Median$	−0.006 [−0.074]*	−1.88	4.08***	0.1033	616
	III. SBM_eno_t	$> = SBM\_eno_{t-1}$	−0.007 [−0.124]***	−2.78	3.63***	0.1102	489
		$<=SBM\_eno_{t-1}$	−0.010 [−0.133]***	−2.96	3.56***	0.1060	498

Note: In Panel A, the endogenous variable(s): in Model 1 is SBM_exo_t; in Model 2 are SBM_exo_t and the interaction term SBM_exo_{t-1}*Div_rang_t; in Model 3 is Div_le_t; in Model 4 are Div_le_t and the interaction term Div_le_t*$Rform_t$; in Model 5 is the interaction term SBM_exo_{t-1}*Div_rang_t and in Model 6 is the interaction term Div_le_t*$Rform_t$. In Panel C, the dependent variable is CAR, calculated by the market model; the independent variable is Div_le_t, an indicator of the level of corporate dividends, equals the ratio of dividends per share to EPS; the controlling variables are the same as those in Model 3, which include $Stpc\_se_t$, $Beta_t$, $Rform_t$, $Tobin'Q_{t-1}$, $Fasset_{t-1}$, $Level_{t-1}$, $Size_{t-1}$, $Year_{t-1}$ and Ind_{t-1}. Category I refers to the total observations used in the event study; Category II is the observations that are classified according to the level of *SBM_exo*; Category III is the observations that are classified according to the direction of the variation of *SBM_eno*. Numbers (in) out of square brackets are the (standardized) coefficients of Div_le_t

***, **, *Denote significance at the 1, 5 and 10% levels, respectively

of Table 18.3 is larger than that in Panel A (1.135) when the endogeneity of SBM_exo_{t-1}*Div_rang_t is controlled, which implies that joint expropriation by the coalition between non-controlling large shareholders and the controlling shareholder is also strengthened. The above results suggest that the cash dividend payment behavior of Chinese listed companies can be interpreted with the theory of dividend tunneling, and there is evidence of joint expropriation by the coalition between non-controlling large shareholders and the controlling shareholder.

Panel B of Table 18.4 presents the regression results when the endogeneity of Div_le_t in Model 3 and Div_le_t*$Rform_t$ in Model 6 are controlled. The coefficient of Div_le_t is negative at the significant level of 0.05, which is the same as in Model 4 of Panel A. Moreover, the 2sls regression result of Model 6, when controlling the endogeneity of Div_le_t*$Rform_t$, reveals a negative influence of the interaction term Div_le_t*$Rform_t$ on ΔSBM_eno_t. Thereby, when the endogeneity of cash dividend payments is controlled, its effect on the variation of the SBM of tradable shareholders is not affected by the non-tradable share reform. By this means, the dividend tunneling theory is valid in China's capital market, and cash dividend payments are considered as a manner of expropriation by the controlling shareholder, or joint expropriation by controlling and non-controlling large shareholders.

Event Study

For our study, we have considered robustness by using an event study. In the event study, the day of dividend plan announcement (DDPA) is chosen as the event day (day 0).[11] The event period [−120, 20] is from 120 trading days prior to the DDPA to 20 trading days post-DDPA. Within the event period, a 41-day event window [−20, 20] is employed, comprised of 20 pre-event days, the DDPA, and 20 post-event days. For each announcement, the 100 trading day period [−120,−21], which is prior to the event window, is used as the estimation window.

In the empirical study, the total of dividend payments observations are 1,302, and we delete: (1) 33 observations, whose estimation windows are less than 100 trading days; and (2) 36 later observations, because the interval of the days between the two announcements in the same companies is less than 120 trading days. After that, we finally get 1,233 observations in the event study, which includes 246 observations with no stock trade on DDPA. In this study, the market model is used to calculate the abnormal return (AR).

The average cumulative abnormal return (CAR) in different event windows and its T test are listed in Panel B of Table 18.5. The average CAR is significantly

[11] If there is no stock trade on the day when the dividend plan was announced, such as the DDPA fell on holidays or weekends, the data of the first trading day before DDPA is adopted. We also use some alternative methods, such as the removal of the observations when there is no stock trade on the DDPA, and the replacement with the first trading day after the DDPA, and these do not change the robustness of our research.

negative around the event day, which shows that dividend payments generate a negative wealth effect for shareholders. Specifically: (1) the average CAR of companies with dividend payments is significantly negative within 3, 5, and 11 days before and after the DDPA (event window [−1, 1], [−2, 2] and [−5, 5]); (2) the average CAR is negative in companies with dividend payments within 3 and 5 days before the DDPA (event window [−2, 0] and [−4, 0]); (3) the average CAR is also significantly negative within 3 and 5 days post-DDPA (event window [0, 2] and [0, 4]); and (4) the CAR in event window [0, 2] and [0, 4] is lower than the corresponding ones, suggesting that the CAR decreases after the dividend payment plan announcement. The negative and descending average CAR around the DDPA suggests that there might be tunneling incentive for corporate dividend payments.

Panel C of Table 18.5 shows the results for regression of CAR on cash dividend payments. We chose three periods around the DDPA, which include three event windows, [0, 2], [−1, 3] and [−5, 5]. In the regression, the variable CAR is winsorized at the 1% level in both tails to control for the influence of outliers. The results suggest that there is a significantly negative relation between the CAR and the level of dividend payments around the DDPA. The negative influence of dividend payments on the CAR is more significant in the 11-day event window. In addition, the negative effect is larger in companies with a higher SBM of non-controlling large shareholders (see Category II of Panel C) and in companies in which the SBM of tradable shareholders decreases (see Category III of Panel C).[12] The different influence of dividend payments on the CAR in companies with different SBM reveals the joint expropriation incentive of dividend policy existing in China's capital market.

Conclusions

Under alternative assumptions about the endogeneity or exogeneity of corporate ownership structure, this study has investigated the relationships between cash dividend payments and the SBM in China's capital market. It has shown that cash dividends can be explained by dividend tunneling theory, that cash dividends are used as a manner of tunneling by the controlling shareholder. It has also shown that joint expropriation occurs by coalitions of controlling and non-controlling shareholders, especially in companies with high and abnormal dividend payments. The results suggest that presence of multiple large shareholders does not, contrary to theory, always alleviate a firm's agency costs and protect the benefits of minority shareholders. Sometimes there will be collusion between block shareholders, especially between controlling and non-controlling large shareholders.

[12] In companies with a different SBM of non-controlling large shareholders, the difference of negative effects exists in regressions with 1,233 and 987 observations, whilst in companies with a different SBM of tradable shareholders, the difference of negative effects only exists in regressions with 987 observations.

Using the exogeneity assumption of ownership structure, this study found the SBM of non-tradable large shareholders had a significant negative effect on cash dividends, which suggests that cash dividends are less likely to be paid by companies with higher levels of the SBM. Non-controlling shareholders perceive cash dividend payments as a manner of expropriation by the corporate controlling shareholder. We also showed the significant positive effect of the SBM on cash dividend payments in companies with high and abnormal dividends, suggesting that cash dividend payments are joint expropriation by the coalition of the controlling and non-controlling large shareholders in these companies. Under the endogeneity of ownership structure, this study discovered that there is a significant negative effect of cash dividends on the SBM of tradable shareholders, indicating that the SBM of tradable shareholders decreases (increases) in companies with (without) cash dividend payments. Thus, it can be concluded that cash dividend payments are a means of expropriation by the controlling shareholder or joint expropriation by the coalition of controlling and non-controlling large shareholders, especially in companies with high and abnormal dividends. The study also finds that the non-tradable share reform has an influence on the SBM of tradable shareholders, especially in high and abnormal dividend companies.

Using the 2sls estimation method to control the endogenous variables, this study shows that there is a stronger constrictive effect by non-controlling large shareholders and a strong collusion in companies with cash dividends. In addition, when the endogenous feature of cash dividend payments is controlled, this study finds a significant negative effect of cash dividends on the variation of the SBM of tradable shareholders, and that such an effect is not influenced by the non-tradable share reform. Furthermore, the event study showed a negative market reaction to dividend payments, and the negative effect is larger in companies with a higher SBM of non-controlling shareholders and with a decreasing SBM of tradable shareholders. The different negative influence of dividend payments on the CAR in companies with different SBM reveals the existence of tunneling and joint expropriation incentives provided by dividend policy in China's capital market.

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Index

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DOI 10.1007/978-94-007-3867-6,