Robert Cressy
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Entrepreneurship, Governance and Ethics

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Editors

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Entrepreneurship, Governance and Ethics

> When Integrity declines, workability declines. When workability declines the available opportunity for performance declines. Thus, Integrity is an important factor of production.
>
> Michael Jensen, Jesse Isidor Straus Professor of Business Administration, Emeritus, Harvard Business School, Keynote Remarks at the Conference on Law, Ethics and Finance at York University Schulich School of Business, September 2010.

A joint special issue conference on Law, Ethics and Finance was held at the York University Schulich School of Business, 16–18 September, 2010. The event was sponsored by the Schulich School of Business and the CFA Institute, with the cooperation of two leading academic journals, the Journal of Business Ethics and the European Journal of Finance. Amongst over 50 papers submitted for each of the two special issues, 19 were invited for presentation at the conference. The authors represented 9 countries: Australia, Belgium, China, France, Italy, the Netherlands, Spain, the UK and the US. Michael Jensen, Jesse Isidor Straus Professor of Business Administration, Emeritus, Harvard Business School, gave a keynote presentation on Financial Market Integrity. The authors at the conference represented a variety of perspectives from ethics, entrepreneurship, governance, economics, law and finance, thereby enabling interesting interdisciplinary discussion and debate.

The event began on 16 September 2010 with a Panel Discussion on 'Financial Market Integrity: Paths Forward,' which included Michael Jensen, Jesse Isidor Straus Professor of Business Administration, Emeritus, Harvard Business School, Robert Bertram, CFA, former Executive President of the Ontario Teachers' Pension, Jeff Diermeier, CFA, former President and CEO of the CFA Institute, Susan Wolburgh Jenah, CEO of the Investment Industry Regulatory Organisation of Canada. The panel members discussed current topics on ethics, market integrity and the role of regulation in facilitating market integrity. The panel made particular note of the lack of a regulatory structure in Canada for facilitating financial market integrity, and this deficiency increases the cost of capital for Canadian firms. The items discussed highlighted the intersection of law, ethics, governance, entrepreneurship and finance, which provided a strong kick-start to the academic sessions on 17 and 18 September 2010.

In the keynote address on 17 September 2010, Professor Jensen distinguished integrity from ethics, morality and legality, and highlighted the role of integrity in enhancing organisational efficiency. Legality refers to the system of laws and regulations of right and wrong behaviour of a person, group, or entity that are enforceable only by the state through a policing a judicial process with penalties. Ethics refers to the agreed on standards of what is desirable and undesirable, of right and wrong conduct or behaviour of a person, group or entity. Morality refers to the societal generally acceptable standards of what is desirable or undesirable, and right and wrong conduct of people, groups or entities. Integrity encompasses legality, ethics and morality. Key aspects of integrity include honouring one's word, telling people when you are not able to honour your work as soon as you become aware you are not able to fulfil your promise, and taking steps to fix the mess that is created when you do not honour one's word. Professor Jensen gave examples of improvements in organisation efficiency associated after implementing a code of integrity. One example was about the organisation that he

co-founded, the Social Science Research Network, which experienced a more than 100% efficiency improvement after implementing a code of integrity.

The best papers submitted for consideration for the Journal of Business Ethics were picked for inclusion at the conference. Some of the conference papers were not accepted for the special issue. The best papers that made it into the special issue included the following ten papers that appear in this issue. The first three papers ('Deal Structuring in Philanthropic Venture Capital Investments,' 'The Role of Law, Corruption and Culture in Investment Fund Manager Fees,' and 'Legal Protection, Corruption and Private Equity Returns in Asia') deal with the issues of law, ethics and finance of entrepreneurial start-ups and their investors. The fourth and fifth papers ('Exploring the Impact of Legal Systems and Financial Structure on Corporate Responsibility,' and 'The UK Alternative Investment Market Ethical Dimensions') pertain to differences in ethics across different stock exchanges and legal systems. The sixth and seventh papers ('Corporate Scandals and Capital Structure,' and 'Corporate Fraud and Managers' Behaviour: Evidence from the Press') consider the effect of corruption on managerial decisions. The eighth, ninth and tenth papers ('Player and Referee Roles Held Jointly: The Effect of State Ownership on China's Regulatory Enforcement Against Fraud,' 'Reactivity and Passivity after Enforcement Actions: Better Late than Never,' and 'Chinese Management Buyouts and Board Transformation') consider issues of law, ethics and finance in China.

In particular, Luisa Alemany and Mariarosa Scarlata, in 'Deal Structuring in Philanthropic Venture Capital Investments,' consider a new issue that has received scant academic attention: philanthropic venture capital. Philanthropic venture capital considers financing entrepreneurial ventures with the aim of maximising 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. The authors provide empirical evidence from Europe and the United States. The data examined highlight 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 with consideration to investment moral hazard and other risks.

Sofia Johan and Dorra Najar, in 'The Role of Law, Corruption and Culture in Investment Fund Manager Fees,' examine 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 organisations is rife with issues of corruption and legal scrutiny. By examining an international sample of fees, the authors are able to compare various determinants of fees, and 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. Furthermore, they 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.

Douglas Cumming, Grant Fleming, Sofia Johan and Mai Ta, in 'Legal Protection, Corruption and Private Equity Returns in Asia' examine the impact of country differences in corruption and law quality on private equity returns. The authors utilize a unique data set comprising over 750 returns to private equity transactions across 20 developing and developed countries in Asia. The authors find that the quality of legal system (including legal protections) is positively related to returns. The main explanation is that inefficient legal protections negatively impact transaction structures and economic certainty when exiting 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 organisational change to alleviate the costs of corruption. The authors

show that their findings are robust to inclusion of controls for Hofstede cultural variables, economic conditions and transaction specific characteristics, as well as consideration of econometric sample selection methods.

Celine Gainet, in 'Exploring the Impact of Legal Systems and Financial Structure on Corporate Responsibility,' investigates how diverse European legal systems and financial structures influence corporate social and environmental responsibility. Gainet tests hypotheses that integrate legal systems and financial structures related to environmental responsibility with Innovest data gathered between across 16 countries and over 600 companies. The data examined show legal systems influence corporate responsibility in both social and environmental spheres. Corporations are more likely to act in environmentally responsible ways when there are strong and well-enforced state regulations in place to ensure such behaviour. Gainet also finds that for large companies, which are more visible than small ones, society expects them to behave in a more socially and environmentally responsible manner regardless of their financial performance or available cash. Also, the data examined support the hypothesis that capital structure significantly influences corporate responsibility insofar as companies with comparatively less debt are more likely commit to social and environmental activities.

Chris Mallin and Kean Ow-Yong, in 'The UK Alternative Investment Market – Ethical Dimensions,' examine the development of the UK Alternative Investment Market (AIM) since it was launched in 1995 and its growth with over 1200 companies currently listed. The authors highlight potential pitfalls that the lighter touch regulation on AIM which in turn may 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. Further, the authors discuss some of the concerns that AIM participants have about the market, including recent scandals on AIM. The authors discuss the implications of their findings for academics, investors and policymakers alike.

Stefano Bonini and Diana Boraschi, in 'Corporate Scandals and Capital Structure,' analyse whether companies involved in a security class action suit (SCAS) exhibit differential capital structure decisions. Also, the authors consider whether the information revealed by a corporate scandal affects the security issuances and stock prices of industry peers. The data examined show that before a SCAS is filed companies involved in a scandal issue greater amounts in security offerings. Further, equity mispricing increases the benefits associated with the use of equity financing. Following the SCAS filing, however, companies exhibit a decreasing amount of total external finance raised. Industry peers are similarly affected, due to contagion. The authors further show that corporate scandals have significant negative effects on stock prices and bond ratings.

Jeffrey Cohen, Yuan Ding, Cedric Lesage and Herve Stolowy, in 'Corporate Fraud and Managers' Behaviour: Evidence from the Press,' examine press articles covering 39 corporate fraud cases over 1992–2005 to study managers' behaviour in the commitment of the fraud. This study integrates the fraud triangle (FT) and the theory of planned behaviour (TPB). The data examined suggest that personality traits appear to be a major fraud risk factor. The analysis was further validated through a quantitative analysis of key words associated with the attitudes/rationalizations component of the integrated theory. These words were found to be used in fraud firms as opposed to a sample of control firms. The findings have significant policy implications. For instance, auditors should evaluate the ethics of management through the components of the theory of planned behaviour: the assessment of attitude, subjective norms, perceived behavioural control and moral obligation. Professional standards that are related to fraud detection should have a stronger emphasis on managers' behaviour that may be associated with a lack of ethics.

Wenxuan Hou and Geoff Moore, in 'Player and Referee Roles Held Jointly: The Effect of State Ownership on China's Regulatory Enforcement Against Fraud,' examine the impact of the prevailing state ownership in the Chinese stock market on fraud. In particular, the authors consider the effect on corporate governance and the financial regulatory system, respectively, as the internal and external monitoring mechanisms to deter corporate fraud and protect investors. The data examined show that the retained state ownership in privatised firms increases the incidence of regulatory enforcements against fraud. Also, the authors show that a new regulation

'*Solutions for Listed Firm Checks,*' which was promulgated in March 2001, has empowered the Regulatory Commission to increase the severity of punishment associated with regulatory infringements against fraud. The data examined show this improvement in the regulatory environment and investor protection has helped the Chinese stock.

Shujun Ding, Chunxin Jia, Yianshun Li and Zhenyu Wu, in 'Reactivity and Passivity after Enforcement Actions: Better Late than Never,' examine the dynamics between enforcement actions and the responses from both the board of directors and supervisory boards amid China's governance reform. Rather than examining determinants of fraudulent activities, the authors investigate, after enforcement actions are imposed, if the board of directors and supervisory boards react differently, and whether their different reactions play a role in preventing future occurrences of frauds. The data examined shows that both boards react to enforcement actions, but only the responses from the board of directors help to curb future enforcements under certain circumstances. The supervisory board fails to play any role in preventing future enforcements. The findings have important policy implications for rule setting associated with ethical conduct and differing levels of boards of directors.

Finally, Yao Li, Mike Wright, Louise Scholes, in 'Chinese Management Buyouts and Board Transformation,' assess the extent to which Chinese management buyouts (MBOs) of listed corporations enable a balance to be achieved between facilitating growth and supporting the interests of minority shareholders other than the buyout organisation. The authors compare MBOs with non-MBOs and examine the extent to which boards of directors are changed to bring in executive and outside directors with the skills to grow as well as restructure a business. The authors also examine the extent to which outside directors become involved in actions to develop the business rather than actions related to fostering the interests of all shareholders. The authors 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 limited attention to growth strategies. Outside directors do not seem to openly disagree with incumbent managers on the disclosure of their actions.

Overall, the collection of ten papers in this special issue highlights with empirical data the strong interplay on ethics in organisational efficiency and entrepreneurial activity, and the role of legal settings and governance in facilitating ethical standards. We hope these papers encourage future scholars to continue to investigate the role of law and corporate governance in mitigating corruption and facilitating integrity in management, entrepreneurship and finance.

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Deal Structuring in Philanthropic Venture Capital Investments: Financing Instrument, Valuation and Covenants

Mariarosa Scarlata
Luisa Alemany

ABSTRACT. Philanthropic venture capital (PhVC) is a financing option available for social enterprises that, like traditional venture capital, provides capital and value-added services to portfolio organizations. Differently from venture capital, PhVC has an ethical dimension as it aims at maximizing the social return on the investment. This article examines the deal structuring phase of PhVC investments in terms of instrument used (from equity to grant), valuation, and covenants included in the contractual agreement. By content analyzing a set of semi-structured interviews and thereafter surveying the entire population of PhVC funds that are active in Europe and in the United States, findings indicate that the non-distribution constraint holding for non-profit social enterprises is an effective tool to align the interests of both investor and investee. This makes the investor behaving as a steward rather than as a principal. Conversely, while backing non-profit social ventures, philanthropic venture capitalists structure their deal similarly as traditional venture capital, as the absence of the non-distribution constraint makes such investments subject to moral hazard risk both in terms of perks and stealing and social impact focus.

KEY WORDS: covenants, social entrepreneurship, socially responsible investment, stewardship, trust, venture capital, venture philanthropy

Introduction

In the last decade, philanthropic venture capital (PhVC) has emerged as a new funding model available for social enterprises (SEs). The PhVC investment model transposes and adapts the profit-maximizing venture capital (VC) funding strategies and techniques to the financing of organizations primarily driven by social motives (Letts et al., 1997). Just like traditional venture capitalists (VCs), philanthropic venture capitalists (PhVCs) are not mere fund providers but value-added investors of the SEs they back. However, rather than focusing on shareholder wealth maximization as typically done in VC, PhVC focus on an ethical dimension of the investment. As such, PhVCs back those organizations who strive to provide services or products that fulfill basic and long-standing social needs, in many cases public goods, such as education, health, or shelter. The social angle of the investment could secure a better life for those members of society who are in need (Austin et al., 2006; Certo and Miller, 2008). Interestingly, the ethical dimension of the PhVC value proposition goes together with economic considerations. Since economic sustainability is a key issue in creating and growing a venture to solve social issues in the long-term, the ethical dimension is intrinsically linked to the economic one: only when the backed SEs are economically sustainable, they will be able to grow, survive in the long term and, as a consequence, fulfill their ethical role in society.

Social investments are nothing new: churches, mutual societies, co-operatives, and charities have been raising and dispensing capital explicitly for social ends for centuries. Notwithstanding, much of the research on social investments has been focused on two mainstream topics: socially responsible investments (SRI) and microcredit. SRI is defined as a portfolio investment policy based on positive or negative screen methodologies following (Irvine, 1987); as such, scholars have analyzed the factors influencing the ethical and economic motivations of such investments by different players (Cumming and Johan, 2007; Guay et al., 2004; Mill, 2006; Sparkes

and Cowton, 2004), the dynamics of portfolio composition and management (Bauer et al., 2005; Bello, 2005; Hickman and Teets, 1999; Sethi, 2005), as well as performance (Dillenburg et al., 2003; Mill, 2006; Rudd, 1981). On the other hand, microcredit is the provision of financial services to very low-income people to start a small business (self-employment often) that typically lack access to credit provided by the traditional banking system. Microcredit scholars have thus tried to explain the social benefit of microcredit institutions and its roles in promoting economic development in rural countries (Afrin et al., 2010; Barboza and Trejos, 2009; Snow and Buss, 2001; Woller and Woodworth, 2001a, b).

In an effort to respond to the financing needs of social entrepreneurs and to the growing discontent on the effectiveness of traditional short-term project-oriented funding models available for them, PhVC has spread rapidly both in the United States and in Europe, with annual growth rate of newly created funds of 15% in the United States and 22% in Europe over the period 1993–2008. This constant growth of PhVCs entities and their innovative investment approach of high-involvement and long-term financing has attracted increasingly attention and needs for contributions to practice and theory are pressing (Austin et al., 2006). In addition, VC and private equity have historically been studied in the fields of finance or business strategy, and research in business ethics is comparatively rare, with only very few exceptions (Cumming and Johan, 2007; Morrell and Clark, 2010).

The PhVC topic thus appears also to be particular relevant in light of the global financial crisis of 2008 which raised questions and concerns about business ethics, investment practices, and social issues in a financial world littered, many times, with unethical speculative behaviors and frauds. In addition, the direct intersection between socially responsible behaviors and private equity "is nevertheless important for institutional investor capital allocation, as well as for private equity funds and companies seeking capital for undertaking socially responsible entrepreneurial activities (Cumming and Johan, 2007, p. 395)" and the ethical implications of private equity are under-studied (Folkmann et al., 2006). Also, PhVC respond to the struggle that has surrounded societies while trying to balance the competing interest of social welfare and economic justice.

Different from hands-off SRI and microcredit is the PhVC investment model, which provides capital and value-added services to the backed SEs. To this respect, prior research has examined the investment behavior of profit-maximizing VC firms finding a positive relationship between the use of equity as financing instrument and contractual provisions. Scholars have thus called for research to understand the funding mechanisms of PhVC investors (Austin et al., 2006) whose funding rules need to incorporate the dual organizational identities of the SEs that they assess. Organizational identity is defined as the shared and collective sense of an organization and, based on Albert and Whetten (1985) it is typically singular in focus, as in traditional entrepreneurship. In the case of SEs, its organizational identity is intrinsically dualistic because it integrates distinctive elements from both the social and commercial sector (Austin et al., 2006; Certo and Miller, 2008). As a consequence, investing in either traditional enterprises or in SEs makes the investor's organizational identity singular or dual respectively. This, in turn, might induce PhVC investors in structuring their investment model differently than in VC.

Grounded within an asymmetric information framework, this article aims at understanding the funding behavior of PhVCs while delimiting their terms of the financing. To do so, an analysis of the deal structuring phase of PhVC investments is here presented both in terms of the capital instrument used to finance the deal, its valuation methodology and the covenants included in the financing agreement. We introduce in this article a new data set of PhVC investors active in Europe and in the United States and investigate whether moral hazard is able to explain the deal structuring behavior in PhVC, as it does in traditional VC. Data were collected through face-to-face as well as phone interviews and thereafter through a web survey addressed to the population of identified investors. Questions enabled an empirical assessment of capital structure, valuation, and contractual agreements typically used in PhVC financing.

This article answers the call for research on the decision rules of PhVCs by Nicholls (2010), Austin et al. (2006), and Battle Anderson and Dees (2006) on how social entrepreneurship can be financed. Also, it responses to the open political discussion on how to improve the way VC operates, or how to

convince and educate those who are still in doubt about it (Morrell and Clark, 2010).

Furthermore, grounding the discussion around agency theory and moral hazard problems, we identify the conditions under which the risk of opportunistic behavior is perceived as severe and how it is managed, showing that similarly than traditional VC, moral hazard risk results to be more severe when investing in for-profit SEs. In the case of non-profits, the governance structure that impedes any distribution of profits to directors or employees is a powerful tool in limiting moral hazard behavior.

Data indicate two main findings. First, and perhaps most importantly, the non-distribution constraint holding for non-profit social ventures is an effective tool aligning the interest of investor and investee. As a matter of fact, while backing non-profit organizations, those PhVCs that finance the deal through grants tend to formally monitor backed SEs less frequently; also, they tend to place more importance on trust rather than on formal control devices. Data analyzed in this article indicated that stewardship, assuming an interest convergence between PhVCs and backed SEs, is better able to describe the deal structuring phase of PhVC investments as opposed to moral hazard, when backed organizations are non-profit.

Conversely, empirical results show that moral hazard is indeed a relevant issue while financing for-profit SEs as the non-applicability of the non-distribution constraint makes for-profit SEs more similar to traditional entrepreneurial ventures, and PhVCs to more traditional VCs. On the one hand, for-profit social entrepreneurs might pursue perks-and-stealing strategies. On the other, they might focus on profit maximization in pursuit of self-interest considerations, rather than on social impact. Similarly, data show that stewardship-related-accounting information is more relevant than formal accounting valuation, as PhVCs significantly use less traditional valuation methodologies to estimate the value of the SEs when they trust them more. Trust is essential while valuing SEs' needs as there is not a market that prices social organizations and thus no comparables are available to apply the multiple valuations as is done in traditional VC. Results thus suggest that, as proposed by Morrell and Clark (2010), the dominance of agency theory can reduce the collective scope to analyse private equity in all its diversity and depth.

This research sheds light on the investment practices adopted by PhVCs, providing a guideline for social entrepreneurs seeking PhVC funding and involvement. The results should inform researchers on how PhVC structure social investments compare with those of traditional VCs.

The article is structured as follows. First, a discussion around the definition of the PhVC investment model is presented and based on agency theory and moral hazard a set of proposition concerning capital structure, valuation, and deal structuring in PhVC are formulated. Third, the methodology is presented alongside summary statistics and multivariate analysis used in the empirical part. Fourth, results are presented. Fifth, limitations are discussed and indications for future research are suggested. Last, findings and implications are discussed.

Conceptual issues

Definition of philanthropic venture capital

The PhVC concept was first presented by Letts et al. (1997) as the application of the investment techniques characterizing the traditional profit-maximizing VC investment model (Gompers and Lerner, 2001; Tyebjee and Bruno, 1984)) by traditional charitable grant-makers. As Scarlata and Alemany (2010) have argued, the definition appears to be quite limitative as it prevents other entities to be categorized as PhVCs. Also, it does not identify the PhVC's value proposition which, in turn, determines the object of the investment, making difficult to understand which is the target organization supported by PhVCs.

A more comprehensive definition of PhVCs is thus elaborated based on the assumption underlying the argument by Letts et al. (1997). If PhVC stems from traditional VC, then it follows:

Definition 1: Philanthropic venture capital is an intermediated investment in social enterprises which exhibit a potential for a high social impact. Due the potential proclivity for asymmetric information between funders and fundees, the philanthropic venture capital investment model provides capital

and value-added activities with the primary objective of maximizing the social impact of the investment.

Figure 1 depicts the PhVC investment model. Investors in the PhVC fund provide capital to the fund itself which then will be reinvested in high-potential social impact SEs. Rather than focusing on financial return maximization as done by traditional VCs, PhVCs aim at obtaining and maximizing social impact. The main assumption underlying PhVC's value proposition is that social impact is created and maximized in the case the SE is able to grow, become self-sustainable and thereby surviving in the long-term. Growth and sustainability can be achieved both through the provision of capital as well value added activities which help backed organizations on a strategic and managerial level. These two aspects are assumed to be key factors toward sustainability, growth and social value creation.

At the exit event, two types of return might be obtained. First, if the backed SEs has become sustainable and has been able to maximize its social impact, this will be transferred to society which will directly benefit from the SEs services and activity. Second, the achievement of a level of self-sustainability by the SEs might enable the creation of some financial returns. However, two levels of analysis need to be considered at this point. The first level of analysis takes into account the legal form of the backed SE: if the SEs is a non-profit organization the non-distribution constraint presented by Hansmann (1980) applies. More specifically, the non-distribution constraint states that non-profit organizations are not barred from making a profit; on the contrary, they "are barred from re-distributing net earnings, if any, to individuals who exercise control over it, such as members, officers, directors, or trustees (Hansmann, 1980, p. 838)." Non-profit SEs must therefore reinvest within the organization any earnings created. On the contrary, if the SEs is a for-profit entity, then any generated profit can be redistributed to investors, namely PhVCs. At this point, the second level of analysis must be conducted taking into account the legal form of the PhVC fund which might be non-profit or for-profit. In the case of a non-profit PhVC fund, financial returns created by backed SEs are redistributed within the fund itself; if the PhVCs is a for-profit entity, profits can be given back to investors.

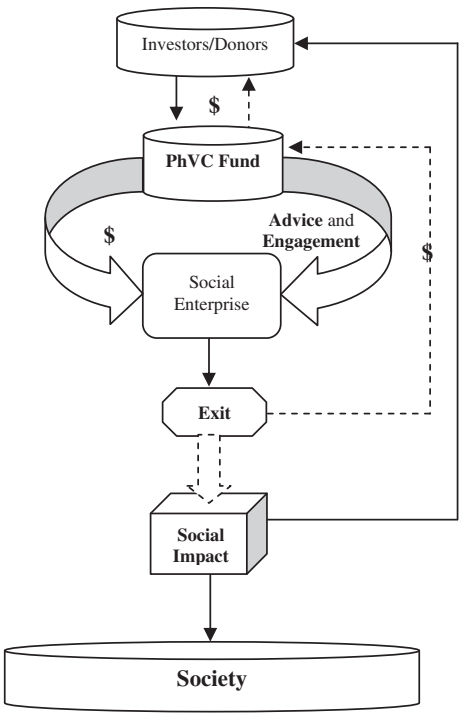

Figure 1. The philanthropic venture capital investment model. *Source*: Elaboration by the authors based on Alemany and Scarlata (2009).

Propositions

Based on Letts et al. (1997), the PhVC investment model consists of the application of the VC model as presented by Gompers and Lerner (2001) as well as Tyebjee and Bruno (1984) in the social sector. The assumption underlying that definition is that PhVC face the same theoretical issues as VCs. Therefore these issues are implicitly applied to the PhVC process as well, making the conditions under which capital is provided look the same. The research question proposed here is thus to understand if it is indeed the case that VC and PhVC finance deals in a similar way and contracts include the same type of provisions.

For what concerns VC, scholars have argued that the most important issue characterizing VCs activity is the significant level of information asymmetries between principal, i.e., the VCs, and agent, i.e., the entrepreneur (Amit et al., 1993, 1998; MacIntosh, 1994; Sahlman, 1990) as "the entrepreneur's ability

to combine tangible and intangible assets in news ways and to deploy them to meet customer needs in a manner that could not be easily imitates […] may be known to the entrepreneur, but unknown to the VCs (Amit et al., 1993, p. 1233).'' VCs are thus principals who become skilled at minimizing moral hazard problems (Amit et al., 1998).

Venture capital deals are structured in such a way that the VCs' own interest for the maximization of financial return on the investment is protected against the opportunistic behavior of the entrepreneur, while simultaneously enhancing the likelihood that the new venture will grow and thus succeed. Much of the theoretical literature has been concerned with the staged process of financing. With staged financing project and entrepreneur's quality information is revealed along time and more venture financing can be obtained. Questions related to this area have been explored in the literature about firm formation and labor economics (Allen, 1985; Kihlstrom and Laffont, 1979).

In the VC area, Cooper and Carleton (1979) focus on the project continuation decision and on debt optimality, as prescribed by Jensen and Meckling (1976). Chan et al. (1990) present an agency model where two contracting parties have the skills to control production but one party's skill is unknown to the other at contracting time; interim information reveals it and is used to determine who controls the second period production, justifying the strong bundling by VCs. Admati and Pfleidere (1994) determine that a constant fractional holding of equity sends an incentive compatible signal to the markets regarding the quality of the venture. Also, Sahlman (1991) conjectures that preferred stock may serve to shift more risk away from VCs to entrepreneurs, suggesting that greater risk ''smokes out'' lower quality ventures and thereby gives the entrepreneur an incentive to perform well. Also, Hellmann (1998) shows that convertible securities efficiently allocate control between the VC investor and the entrepreneur, whereas Trester (1998) finds that preferred equity allows the VCs to receive some positive return because without foreclosure the entrepreneur is not pushed into behaving opportunistically.

Notably, in the United States, VCs use convertible preferred shares, while in the other non-US countries VCs use a variety of securities including common equity, preferred equity, convertible preferred equity, debt, convertible debt, and combinations (for Canada, see Cumming (2005b); for Europe, see Cumming and Johan (2008)). One explanation for these differences across countries is the tax bias in favor of convertible preferred shares in the United States (Gilson and Schizer, 2003). Also, examining a sample of first-round Canadian VC investments, Cumming (2006) finds that firms in the startup stage tend to select away from common equity and tend to select toward offers of debt finance. Similarly, high-tech firms are more likely to select toward debt and are less likely to select toward convertible securities that provide the investor with upside potential and downside protection.

Fama and Jensen (1983a) offer a general rationale for exploring potential agency problems between social entrepreneurs and funds providers, suggesting that many of the agency-related costs associated with traditional debt financing may be applied to SEs as well. Arguably, the most prominent difference between traditional and non-profit debt financing is that non-profits are prevented from structuring bond covenants in which cash is used to collateralize debt, creating an asset substitution effect on cash which may either be invested in risky projects or consumed by management and employees outright (Wedig et al., 1996). This aspect might lead to making moral hazard issues even more severe as shifts the focus from the effort in solving social problems to the pursuit and satisfaction of self-interest. Furthermore, convertible debt, which might be able to address moral hazard, is barred for non-profits due to the non-distribution constraint (Hansmann, 1980) which impedes equity-holding in non-profits. Also, Wedig et al. (1988) find indirect evidence that leverage decisions have impact on SEs bankruptcy due to the high cost of debt for SEs.

John (2007) finds that in Europe, the most used instrument by PhVCs while financing SEs are grants which by definition are gifts given for charitable purposes and/or to benefit a cause; grants typically are given without return considerations as they do not have residual claimants. John (2007) also reveals that equity is increasingly used as financing instrument by PhVCs. Nevertheless, no evidence of use of preferred stock vs. common stock is found, while Kingston and Bolton (2004) mention quasi-equity as a financial instrument developed to invest in those SEs which debt financing is ''inappropriate or too onerous. […]

Quasi-equity shares the risk and reward of the investment between the investor and the investee by allowing the investor to take a share of future revenue streams (Cheng, 2008, p. 2).'' More specifically, quasi-equity is a financial instrument that aims to reflect some of the characteristics of shares (preference or ordinary) and investors might not get any financial return if the backed SE does not achieve the expected financial performance. Balbo et al. (2008) reports that PhVCs tend to use ''funding instruments [that] are broadly similar to those used in the commercial sphere, although the PhVC toolset contains one additional instrument – the grant (Balbo et al., 2008, p. 24)'' and that for any type of instrument used by PhVCs the financial return is below market rate.

Based on these results, it is evident that PhVCs structure their deals using financing instruments, either equity, loans, quasi-equity loans, or grants, that are best able to meet the funding needs of the SE rather than focusing on the PhVCs' wealth perspective. PhVC, thus, are one of those actors that, based on O'Brien (2009, p. 35) ''correct the distorted prioritization of the maximization of profit in their business decision.''

This is in net contrast with the traditional VC investment perspective, where the focus lies on the investor's protection rather than on the effective need of the backed venture. However, if John's (2007) findings concerning the prevalence in the use of grant financing holds both in the case of non-profit (which the non-distribution constraint holds for) and for-profit SEs (that are instead not subject to the non-distribution constraint), this might be an indicator of a low perception of moral hazard. The argument is that, given that PhVC investors know that grants are basically donations that by definition can involve a sort of agency issue as presented by Fama and Jensen (1983a), their use indicates PhVCs are not concerned with the potential existence of an opportunistic behavior on the side of the backed SEs. Taking this discussion into account Proposition 1 is formulated:

Proposition 1: The lower the perception of moral hazard by philanthropic venture capitalists, the higher the use of grant financing.

The price of the deal is the output of a valuation process conducted by the VCs which aims at establishing a fair price to be paid contingent with the level of risk perceived by the investor. Valuation in VC is characterized by a high level of asymmetric information as start-up companies often do not have historical accounting data. The company valuation performed by VCs takes into account the projections presented by the entrepreneur in the business plan. However, as Sahlman (1990) explains, entrepreneurs may disclose only what they deem necessary to get the funding: they may deliberately or inadvertently withhold important information or give a biased view of important facts.

By surveying European VCs, Manigart et al. (1997) find that the most important valuation method in VC is price earnings multiples, whilst least importance is attributed to asset value methods as the liquidation and replacement value of the assets is neither a theoretically correct valuation method, nor a method that has a large appeal for this type of investment.

In PhVC investments, two distinctions must be taken into account. First, in the case of investments in non-profit SEs, valuation procedures cannot be applied due to the non-distribution constraint. Second, in the case of for-profit SEs for which equity is indeed present, multiples method, cash flow- or asset value-based models might be too difficult to be used. Multiples method imply the presence of a comparable venture for which price is established by capital markets. However, ''[…] the culture of [*traditional capital markets*] is very different from the culture of SEs. There are few or no companies with a primarily ethical remit, and indeed corporate social responsibility issues are afforded a lower priority […] The investors in these markets are primarily profit driven, and have little interest in ethical concerns (Hartzell, 2007, p. 7).'' Also, Hartzell (2007) points out that ''there are still many hurdles to overcome before an effective ethical exchange can be created (Hartzell, 2007, p. 26).'' At the same time, cash flow- and asset value-based valuation methods can be difficult to be applied as most of the SEs is cash constrained with negative cash flows, and their assets are mainly donations.

As such, for firms within rich information environments, accounting information appears to fulfill a predominantly confirmatory role, since it is more useful in making economic decisions. On the contrary, firms operating in weak information

environments lack the channels to effectively communicate valuation-relevant information by any means. A study by Van Slyke and Newman (2006) present PhVCs as stewards of the SEs they back rather than self-interest seeking actors. Commenting on a case study of a PhVCs developing strategies in community redevelopment, Van Slyke and Newman (2006, p. 360) claim: ''[…] support services are an important component of [the PhVCs'] stewardship.'' With its roots in sociology and psychology, stewardship theory (Davis et al., 1997; Donaldson and Davis, 1991; Fox and Hamilton, 1994; Muth and Donaldson, 1998) characterizes human beings as having higher-order needs for self-esteem, self-actualization, growth, achievement and affiliation.

Stewardship theory is centred on service rather than on control and begins with the willingness to be accountable for some larger body than the self. It also suggests that managers, in this case PhVCs, make effective decisions to the extent that their interests are aligned with those of the firm, i.e., the backed SEs. Effectiveness can be obtained through empowerment. If stewardship holds in PhVCs, then it might be thereby conjectured a higher relevance for stewardship-related accounting information vs. valuation accounting information, meaning that PhVCs will tend to have specific need valuations rather than corporate valuation. As a result, Proposition 2 is presented:

Proposition 2: The higher the stewardship by philanthropic venture capitalists, the lower the use of valuation models.

Arising from a lower moral hazard perception, it might be also the case that PhVCs prefer less-elaborated governance structures characterized by a lower use of bundling provisions than done in VC aiming at incentivizing the backed entrepreneurs to perform well and stay in the company (vesting). Also, VCs try to minimize the risk that the entrepreneur might be willing to sell the company maximizing his/her self-interest but minimizing the value of the company itself, and thus the value of the VC investment (renegotiation). As Williamson (1979) argues, governance mechanisms emerge to protect parties to economic exchanges from unforeseen events or opportunistic actions which can adversely affect their economic well being. Williamson (1979) hypothesizes a positive relationship between the risk of opportunistic behavior and the use of elaborate governance structures.

In VC the level of risk associated with a new venture can be affected by decisions made by managers in the new venture and by the efforts in the value maximization process implemented after the investment is made. In such a case, when the entrepreneur's effort is unobservable to the VC, the traditional moral hazard approach pioneered by Holmstrom (1979) predicts that if agents are tied financially to their venture, to some extent, they are reducing the agency risk that would otherwise be borne by the VCs. Also, since the entrepreneur can ''hold up'' the VCs by threatening to leave and because the specific human capital of the entrepreneur will make it unlikely for the VCs to locate another entrepreneur with the skills necessary to support the same opportunity, contractual provisions are set in such a way that it is more costly for the entrepreneur to leave (Barney et al., 1989). This is the hold-up problem analyzed in Hart and Moore (1994) which is managed by vesting the entrepreneur's shares: vesting is one of the strongest as it is a form of time-contingent compensation and as Kaplan and Stromberg (2004) show it is extensively used in VC contracts in association with the risks of general uncertainty, asymmetric information, project complexity, and potential hold-up between the VCs attributed to them in the screening phase (Kaplan and Strömberg, 2001; MacMillan et al., 1985). As a matter of fact, ''instead of merely accepting the presence of residual loss (the opportunity cost of managerial discretion), the [*VCs*] seeks to limit or eliminate it. This involves limiting managerial discretion and also sidelining or ignoring non-shareholder interests. This is done by combining incentive schemes and performance monitoring regimes. Both of these incentivise managers to act as owners by linking remuneration to firm performance (Morrell and Clark, 2010, p. 252).

Considering the discussion on Proposition 1, if moral hazard risk is less severe than in VC, PhVCs structure their deals in such a way that less elaborated governance structures are used. The argument holds both in the case of non-profit and for-profit SEs, as also in the latter case SEs are ''explicitly designed to serve a social purpose (Dees and Anderson, 2003, p. 2)'' and thus should face similar moral hazard

concerns as non-profits. Actions of managers are not understood in negative terms, as makers of waste and inefficiency that reduce returns to shareholders (Morrell and Clark, 2010). Thereby, Proposition 3 is thus formulated:

Proposition 3: The lower the perception of moral hazard by philanthropic venture capitalists, the lower the use of entrepreneur's binding contractual provisions.

Chemla et al. (2007) show that in a dynamic moral hazard setting, renegotiation clauses, namely anti-dilution protection, can ensure that the contract parties make efficient ex-ante investments in the venture by constraining renegotiation. Anti-dilution serves at offsetting the dilutive effect of the issue of cheaper shares. In the absence of this clause, renegotiation intended to achieve the necessary changes in the parties' stakes, may distort the parties' shares of the firm's payoff, thereby distorting their ex-ante investment. Also, Nöldeke and Schmidt (1995) consider that a contract granting the option to impose a specific trade at a fixed price can solve the hold-up problem arising when relation-specific investment makes a party vulnerable to opportunism on the part of the investment partner Grossman and Hart (1986). Pre-emptive rights allow existing shareholders to purchase a new offering of shares before any other investors or before the general public and maximize shareholder wealth as it offers the option of picking the least costly method for raising additional financing (Bhagat, 1983). On the other hand, liquidation preferences are set up in such a way that, in the event that the company is subject to a liquidity event, the VCs will receive a certain amount of the proceeds before any other shareholder.

Diamond (1991) and Ross (1977) show that investor liquidation rights, i.e., the ability to sell and the payoff in the event of a liquidity event, are used to screen for good entrepreneurs. Drag-along enables the VCs, which is typically the holder of the right, to deliver up to 100% of the firm to a third party acquirer and deny the parties the ability to increase their share of the payoff by threatening to hold out on a value-increasing trade sale; tag-along rights enable the holder to force any other shareholders to sale shares on a pro rata basis (and at the same price) as a selling shareholder. Thus, the holder of the right denies the other party the ability to increase her/his share of the payoff by threatening to sell his/her stake to a trade buyer who might decrease the value of the firm, or by preceding the other parties in selling their stake to a trade buyer who will increase the value of the firm. Typically, tag-along rights are a form of put options, whereby a party can put his/her stake to a trade buyer or to the public market. Based on the preceding discussion, Proposition 4 is formulated:

Proposition 4: The lower the perception of moral hazard by philanthropic venture capitalists, the lower the use of renegotiation clauses.

The discussion presented here might suggest that stewardship theory rather than moral hazard is better able to explain the deal structuring behavior of PhVCs. 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, agency theory appears to be less able to explain the relationship between the PhVCs and SEs.

Consequently, since in stewardship theory, the principal fully enables the steward to act in the best interest of the organization, the binding relationship is built on trust mechanisms that enable the steward to make choices that maximize the long-term return for the organization. In fact, putting control structures on stewards will significantly de-motivate the steward and be counter-productive for both the steward and for the organization (Argyris, 1990). If stewardship theory is able to explain this phase of the PhVCs investment, then the expectation is that PhVCs will place a higher importance to the variable trust than to any other contractual provision, leading to the following proposition:

Proposition 5: The higher the stewardship offered by philanthropic venture capitalists, the higher the importance of trust vs. formal contractual provisions.

Methodology

This article uses a two-step exploratory study approach to ensure triangulation, thus minimizing

bias from the author or from the methodology used, and construct validity (Saunders et al., 2007). After the identification of the strategies adopted by VCs to manage asymmetric information and the formulation of a set of propositions concerning PhVC, the validity of the constructs was checked through a series of semi-structured interviews. These aimed at determining the PhVCs' understanding of the constructs and at adjusting the latter taking into account peculiar variables considered in their deal structuring phase of the investment that reflect their specific value proposition, as opposed to that of VCs. Later, a web-based survey targeting the whole population was distributed obtaining a 54% response rate.

For what concerns the population of PhVCs, 74 funds were identified, of which 38 were based in Europe and 36 in the United States. The PhVC population was identified by consulting two main databases: the European Venture Philanthropy directory (EVPA, 2008) in the case of Europe, and the National Venture Capital Association (NVCA, 2009) in the case of the United States. To minimize under-coverage error, other sources were also employed. The NVCA list was combined with a list by Morino Institute (2000). Second, EVPA list was made up of a list of PhVC organizations reported by John (2006). Last, other PhVCs active in the field were identified by skimming through the members of the board of directors of the previously identified ones. In this respect, for organizations to be considered as PhVCs, the model depicted in Figure 1 must be applied. By integrating all these sources, a unique and complete database of PhVC funds was created with the inclusion of the entire universe of PhVC funds active in the field as of 2008.

Once PhVCs were identified, interviews were conducted with seven PhVCs, representing more than 10% of the target population; of these, four were located in the United States and three in Europe. Questions concerned the deal structuring investment policy at a portfolio level. It is worthy to remark that, given that two of the interviewed PhVCs preferred not to be recorded, notes were taken. Notes and registrations were then reordered and integrated with additional information and documents provided by PhVCs. The selection of the sample of PhVCs that were interviewed was based on the following characteristics: (a) location of PhVCs, to control for any differences in the deal structuring phases, as described by Cumming and Johan (2008) and Cumming (2005b) in the case of traditional VC; (b) age of the PhVCs to control for their experience in structuring deals; (c) typology of PhVC fund; (d) stage of development of backed SEs; and (e) organizational form of the backed SEs.

As a first step, thus, interviews were formally content analyzed. Based on Krippendorff (2004), content analysis is a methodology that reliably develops measures to interpret textual material that, in the last decade, has been increasingly used in management studies (Duriau et al., 2007) and particularly in VC (cf. among others Hisrich and Jankowicz, 1990; Ruhnka and Young, 1987; Smart, 1999; Zacharakis et al., 1999).

Accordingly, four content analyzed interviewees were located in the United States, and the remaining one in the UK, with two funds created in 1998, one in 2001, one in 2005, and one in 2006. In terms of legal structure, three PhVCs were foundations, one was public charities, and one was a for-profit organization. For what concerns then the organizational form of backed SEs, the PhVCs' average portfolio includes 73% of non-profit SEs and 27% of for-profits, with two of the interviewees backing 100% of non-profit SEs, and the remaining three backing a mix of non-profit and for-profit SEs. If considering the stage of development of the backed SEs, the average PhVCs portfolio includes five early-stage SEs, thirteen expansion-stage SEs, and two maturity-stage SEs.

In content analysis, concept operationalization implies the construction of a coding scheme including a set of measures in a codebook. In it, dimensions that are used for a given measure must be exhaustive and mutually exclusive (Neuendorf, 2002). Methodologically, first the number of references to each variable was quantified through the software Nvivo 8.0. Second, the procedure followed by Meyskens (2009) was used. As such, the number of references associated to each variable was utilized to determine the absolute number of references to the dimension they refer to, which was computed as sum of all the references of the variables making up the category. Third, this sum was utilized to estimate the use of each dimension in relative terms.

As a second step, results from content analysis were utilized to develop a survey sent to the population of active European and American PhVCs,

including those funds that were interviewed, and as done with interviews, questions raised concerned with the PhVCs investment strategy at a portfolio level. The survey was first sent by e-mail to each PhVCs with three reminders at a week distance each; second, a copy of the survey was sent by fax to those funds that did not respond to the web version; last, the survey was mailed to the PhVCs' headquarters through standard postal mail.

Overall, 40 complete responses were received, corresponding to a 54% response rate.[1] For non-respondents, the dominant reason for refusing to participate in the survey was the confidentiality of the information requested. A second reason cited was the heavy schedule and limited resources of the PhVC fund.

If comparing population and respondent sample (see Table I), PhVCs result to be mainly foundations (39.2%) and public charities (37.8%); 5.4% of the identified PhVC funds undertake the legal structure of a donor-advised fund. However, considering that the decision of undertaking one particular type of legal structure might be influenced by factors related to the legal environment where the fund operates, or to the nature of its donor/s rather than to the core activity of the entity, the legal structures mentioned so far have been grouped into a single one considering the non-distribution constraint (Hansmann, 1980). Two sub-categories of PhVCs were thereby created: Non-profit and For-profit. 63 PhVCs amounting to 85% of the population result to fall into it, meaning that, independently of the particular legal structure PhVCs indeed undertake, profits are reinvested into the fund itself rather than re-distributed. 9 PhVCs (12% of the population), were identified as for-profit. In just one case, the identification of the legal form of the PhVC fund was not possible because of a lack of specific publicly available information; however it was possible to categorize it as a non-profit. The same pattern is found in the respondent sample.

Table II lists population and respondent PhVCs by nationality which is established according to the location of the PhVCs' headquarters. Again, the same pattern is found for respondents.

Table III shows population and respondents PhVCs by year of creation and reveals that the majority of funds are relatively young: 59% were created during 2000–2008, providing empirical support to the fact that PhVCs started to emerge mainly after the burst of dot.com bubble.

To grasp how much money is involved in the PhVC industry, a look at their Assets Under Management (AUM) is given. Based on this measure,

TABLE I

Number of population and respondent PhVC funds by legal structure

Legal structure	Proportion in population	Proportion of respondents over population
Foundation	0.39	0.23
Public charity	0.38	0.12
Donor-advised fund	0.05	0.05
Trust	0.01	0.01
Other	0.03	0.03
Total non-profit	0.87	0.45
For-profit	0.12	0.10
N/A	0.02	0.00
Total	1	0.54

TABLE II

Number of PhVC funds by nationality

Location	Proportion in population	Proportion of respondents over population
Continental Europe	0.27	0.18
UK	0.20	0.11
Eastern Europe	0.04	0.01
USA	0.49	0.24

TABLE III

Number of PhVC funds by year of creation

Year	Proportion in population	Proportion of respondents over population
1980–1990	0.05	0.02
1991–1999	0.35	0.14
2000–2004	0.41	0.23
2005–2008	0.19	0.15

28% of the PhVCs belonging to the population manage up to 10 million US dollars, and 24.3% between 10.1 and 100 million US dollars. However, given the high number of missing data on the population (40.5%), no general conclusions about this measure can be drawn.

Survey sample and test for non-response bias

To establish whether the 40 completed survey responses might be biased by non-response error, two levels of analysis are taken into account. The first level investigates whether a significant difference exists between respondents and non-respondents. If this is the case, then the second level of analysis is performed, which is based on categorizing respondents in early and late respondents, and on comparison of these two categories with non-respondents to check whether the latter behave more as early or late respondents. The analysis can only be conducted for those variables available both for respondents and non-respondents, i.e., Legal structure, Nationality, and Year of creation.

First, to run the test for independence of respondents and non-respondents, a contingency table including legal structure, nationality, year of creation and type of respondents is constructed. Second, the Pearson's contingency coefficient was calculated for Legal structure and Nationality, both being nominal variables. With regard to the variable Legal structure, funds have been categorized according to the non-distribution constraint (Hansmann, 1980) and divided into categories: non-profit and for-profit PhVC funds (labeled then Organizational form of PhVCs). This strategy has been followed to solve for the missing data characterizing the distribution of the variable: making use of secondary sources, it was possible to identify that particular fund as non-profit, while it was not possible to discern its specific legal form. Last, the non-parametric Mann–Whitney *U* test was determined with respect to Year of creation, and the same is suitable for comparing three or more independent groups of ordinal sample data. Based on the results obtained, the null hypothesis of independence is failed to be rejected.

Based on the above mentioned strategy to test for non-response error and considering that no significant dependence is found between being a respondent and Legal structure, Nationality, and Year of creation, results show that there is no statistical significant difference between respondents and non-respondents.

Variables and empirical analysis

Based on the theoretical premise that the frequency of VC–CEO interaction is greater when high agency risk necessitates greater monitoring (Fama and Jensen, 1983b) and high task uncertainty necessitates more joint decision making and thereby greater investment in information processing capacity for both parties, Sapienza and Gupta (1994) show that the extent of VC-entrepreneur goal congruence is influenced by the frequency of interaction at a board level. Empirical tests of the propositions were conducted using multivariate regression methods as done by Cumming (2006, 2005a, b). The use of multivariate techniques implicitly assumes that the variable ''Frequency of interaction,'' utilized to measure the level of moral hazard, and ''trust,'' utilized to measure stewardship, are continuous variables. Results of the analysis not assuming continuity in the dependent variable are available upon request and confirm multivariate output.

Type of instrument used

To test Proposition 1, the left-hand side of choice variables includes PhVCs–SE interaction through formal and informal meetings which in turn are proxies for moral hazard. The frequency of interaction at formal and informal levels was measured using a four-point frequency scale, with 1 = ''Once a year,'' 2 = ''Semi-annually,'' 3 = ''Quarterly,'' 4 = ''Bi-monthly,'' and 5 = ''Monthly.'' The right-hand-side factors considered for Proposition 1 were the types of instrument used while structuring the deal. As such, based on Balbo et al. (2008) and John (2007), in PhVCs deals, the following securities are used: Grant, Equity, Quasi-equity, Subordinated loan, and Senior debt.

On an aggregate level, column *Use* of Table IV indicates that 72.7% of PhVCs use grants to back SEs, suggesting the existence of a low perception of moral hazard given that grants do not need to be repaid and do not entail grant providers in retaining any shareholding. This finding, together with 34.3% of PhVCs

TABLE IV

Sample summary statistics

	N	Use	SEs' stage of development			PhVCs geographical distribution		Typology of PhVCs		Organizational form of backed SEs	
			Early-stage	Expansion	Maturity	Europe	USA	Non-profit	For-profit	Non-profit	For-profit
Panel A: Security											
Grant	33	0.73	0.400	0.400	0.200	0.536	0.464	0.792	0.208	0.727	0.273
Equity	35	0.34	0.363	0.454	0.181	0.662	0.338	0.833	0.167	0.286	0.714
Quasi-equity	36	0.29	0.400	0.400	0.200	0.797	0.203	0.900	0.100	0.222	0.778
Subordinated debt	35	0.11	0.375	0.375	0.250	0.662	0.338	1.000	–	0.057	0.943
Senior debt	36	0.08	0.375	0.375	0.250	0.662	0.338	1.000	–	0.083	0.917
Panel B: Valuation											
Use of valuation	31	0.20	0.426	0.500	0.074	0.875	0.125	0.875	0.125	0.455	0.545
Panel C: Contractual provisions											
Anti-dilution	35	0.20	0.363	0.454	0.181	0.855	0.145	1.000	–	0.364	0.636
Liquidation preferences	35	0.17	0.500	0.375	0.125	0.662	0.338	1.000	–	0.375	0.625
Drag-along	30	0.17	0.500	0.500	–	1.000	–	1.000	–	0.286	0.714
Tag-along	30	0.13	0.500	0.500	–	1.000	–	1.000	–	0.200	0.800
Vesting	35	0.11	0.428	0.428	0.144	0.495	0.505	1.000	–	0.500	0.500
Pre-emption rights	30	0.10	0.333	0.667	–	1.000	–	1.000	–	0.400	0.600
None of the above	35	0.88	0.418	0.400	0.182	0.595	0.405	0.829	0.171	0.600	0.400

Note: This table presents the number of PhVCs by type of security (Panel A) and by contractual provision (Panel B), SE's stage of development, PhVCs location, PhVCs typology, and organizational form of backed SEs. The total number of respondents for each security and contractual provision is reported in the column *Respondents*, whereas the number of PhVCs using each security is reported in column *Use*. The sum of the categories in column *Use* does not amount to 100% as respondents were allowed to choose multiple options. The proportions of early-stage, expansion-stage, and maturity stage SEs sum to 1.0. The proportion of European and American PhVCs is weighted by the proportion of respondents belonging to each location and it sums to 1. The proportion of non-profit and for-profit PhVC is weighted by the proportion of respondents belonging to each category and it is equal to 1. The proportion of non-profit and for-profit backed SEs amounts to 1.

using equity financing, confirms the hypothesis by John (2007). Only marginally various typologies of debt financing are used, supporting Wedig et al.'s (1988) argument of a low use of debt in the social sector due to the related high risk of bankruptcy.

The following independent variables, that typically influence VC contracting, were incorporated in the regression analysis as controls: (a) since VC funds tend to have a preference for financing certain types of entrepreneurial firms based on their stage of development (cf. e.g., Cumming, 2006; Elango et al., 1995; Gompers and Lerner, 1999) and since Sapienza and Gupta (1994) shows that higher moral hazard characterized early-stage ventures, a dummy variable has been included in the regression analysis, with values of 1 = early-stage supported, and 0 otherwise; (b) industry dummies reflecting the sectors that are most present in the PhVCs portfolio, i.e., (b1) education and (b2) health (Scarlata and Alemany, 2010); (c) geographical distribution of PhVCs which, according to Cumming (2005a), affects the type of instrument used to finance VC deals. Accordingly, PhVCs were categorized into European and American PhVCs, using a dichotomous variable with values 0 = American and 1 = European; (d) typology of fund. In the case of traditional VC firms, the distinction is made with respect to government, corporate, or independent

firms. For what concerns PhVCs, these have been categorized based on based on the application of the non-distribution constraint (Hansmann, 1980). Accordingly, the dichotomous variable with values 1 = non-profit PhVCs and 0 = for-profit PhVCs was included; (e) composition of the portfolio by organizational form of backed SEs, with the dichotomous variable taking value of 0 if the SE is a non-profit, 1 if it is a for-profit one.

We thus estimate the multivariate regression equations of the following form:

$$\begin{aligned}\text{Frequency of formal monitoring} &= \alpha + \beta_1(\text{grant}) \\ &+ \beta_2(\text{senior loan}) + \beta_3(\text{subordinated loan}) \\ &+ \beta_4(\text{quasi-equity}) + \beta_5(\text{equity}) \\ &+ \beta_6(\text{early stage SEs}) + \beta_7(\text{education SEs}) \\ &+ \beta_8(\text{health SEs}) + \beta_9(\text{American PhVCs}) \\ &+ \beta_{10}(\text{for-profit}) + \beta_{11}(\text{Non-profit SEs}) + \varepsilon\end{aligned} \tag{1}$$

Valuation

The left-hand-side of choice variables for Proposition 2 uses the variable Trust as a measure of the stewardship offered by PhVCs. The right-hand-side includes a dichotomous variable with values 0 = No valuation, and 1 = Valuation performed, controlling for stage of development, industry, geographical location of the PhVC fund, typology of PhVCs, and organizational form of backed SEs. The regression equation thus assumes the following form:

$$\begin{aligned}\text{Importance of trust} &= \alpha + \beta_1(\text{valuation}) \\ &+ \beta_2(\text{early stage SEs}) + \beta_3(\text{education SEs}) \\ &+ \beta_4(\text{health SEs}) + \beta_5(\text{American PhVCs}) \\ &+ \beta_6(\text{for-profit PhVCs}) + \beta_7(\text{non-profit SEs}) + \varepsilon\end{aligned} \tag{2}$$

Contractual provisions

As done in the "Type of instrument used" section, the left-hand-side of choice variables for Proposition 3 and Proposition 4 includes PhVCs-SE interaction at both formal and informal levels, as previously measured. The right-hand-side variables include the following dichotomous independent variables: Vesting, Anti-dilution, Liquidation preferences, Drag-along, Tag-along, Pre-emption rights, and None of the above. Controls are variables (a), (b), (c), (d), and (e) used in the capital structure analysis. The regression equation takes thus the following form:

$$\begin{aligned}\text{Frequency of formal monitoring} &= \alpha + \beta_1(\text{vesting}) \\ &+ \beta_2(\text{anti-dilution}) + \beta_3(\text{pre-emption}) \\ &+ \beta_4(\text{drag-along}) + \beta_5(\text{tag-along}) \\ &+ \beta_6(\text{liquidation preferences}) + \beta_7(\text{early stage SEs}) \\ &+ \beta_8(\text{education SEs}) + \beta_9(\text{health SEs}) \\ &+ \beta_{10}(\text{American PhVCs}) + \beta_{11}(\text{for-profit PhVCs}) \\ &+ \beta_{12}(\text{non-profit SEs}) + \varepsilon\end{aligned} \tag{3}$$

Stewardship

To test for Proposition 5, the left-hand side of Eqs. 1 and 3 is reformulated including the importance of trust as measure of stewardship. As such, the equations take the following form:

$$\begin{aligned}\text{Importance of trust} &= \alpha + \beta_1(\text{grant}) \\ &+ \beta_2(\text{senior loan}) + \beta_3(\text{subordinated loan}) \\ &+ \beta_4(\text{quasi-equity}) + \beta_5(\text{equity}) \\ &+ \beta_6(\text{early stage SEs}) + \beta_7(\text{education SEs}) \\ &+ \beta_8(\text{health SEs}) + \beta_9(\text{American PhVCs}) \\ &+ \beta_{10}(\text{for-profit PhVCs}) + \beta_{11}(\text{non-profit SEs}) + \varepsilon\end{aligned} \tag{4}$$

$$\begin{aligned}\text{Importance of trust} &= \alpha + \beta_1(\text{vesting}) \\ &+ \beta_2(\text{anti-dilution}) + \beta_3(\text{pre-emption}) \\ &+ \beta_4(\text{drag-along}) + \beta_5(\text{tag-along}) \\ &+ \beta_6(\text{liquidation preferences}) + \beta_7(\text{early stage SEs}) \\ &+ \beta_8(\text{education SEs}) + \beta_9(\text{health SEs}) \\ &+ \beta_{10}(\text{American PhVCs}) + \beta_{11}(\text{for-profit PhVCs}) \\ &+ \beta_{12}(\text{non-profit SEs}) + \varepsilon\end{aligned} \tag{5}$$

The column *Use* in Panel B of Table IV presents the use of the different typologies of financial instruments (Panel A) and contractual provision (Panel B) by (1) stage of development of PhVC backed SEs, (2) geographical distribution of the PhVCs, (3) typology of PhVCs, and (4) organizational form of backed SE.

A few findings have shown that grant and quasi-equity are used in a similar way across different stages of SE's development. Results also show that European PhVCs tend to use more sophisticated securities that American ones and that, after controlling for the proportion of non-profit and for-profit PhVCs, non-profit ones tend to use more the mentioned securities. However, this could be influenced by the fact that both in the population and in the sample, for-profit PhVCs are a marginal proportion as discussed in the previous section. Interestingly, but not surprisingly, grants are more used to finance non-profit SEs, whereas equity and other types of securities tend to be used more with for-profit SEs.

For what concerns contractual provisions, Panel B clearly shows a consistent higher use by European non-profit PhVCs while financing non-profit early and expansion stage SEs. In addition, whereas contractual provisions such as anti-dilution, liquidation, drag-along, tag-along, and pre-emption rights, when used, are used while backing for-profit SEs, vesting clauses are used in a similar proportion for non-profit and for-profit SEs. This suggests that the social entrepreneur is considered a key success factor by PhVCs who, thus, incentivize the human capital using vesting provisions.

Table V shows the Fisher exact test for difference between the security selected (Panel A) and contractual provisions (Panel B) with the variables SEs stage of development, PhVCs geographical distribution, typology of PhVCs, and organizational form of backed SEs.

As such, Panel A of Table V identifies significant differences with respect to the use of grant financing and (i) expansion stage SEs, (ii) non-profit SEs, and (ii) for-profit SEs; the use of equity and for-profit SEs; and the use of quasi-equity and (i) expansion stage SEs and (ii) for-profit SEs. A cross-tab analysis of these significant differences reveals that grant financing (i) tends to be less used when financing

TABLE V

Difference between security and typology of PhVCs – Fisher exact test

	N	SEs stage of development			PhVCs location	Typology of PhVCs	Organizational form of backed SEs	
		Early stage	Expansion stage	Maturity stage			Non-profits	For-profits
Panel A: Security								
Grant	33	–	⋆	–	–	–	⋆⋆	⋆⋆
Equity	35	–	–	–	–	–	–	⋆⋆⋆
Quasi-equity	36	–	⋆⋆	–	–	–	–	⋆⋆⋆
Subordinated debt	35	–	–	–	–	–	–	–
Senior debt	36	–	–	–	–	–	–	–
Panel B: Valuation								
Valuation performed	31	–	–	–	–	–	⋆	–
Panel B: Contractual provisions								
Anti-dilution	35	–	–	–	–	–	⋆⋆	⋆⋆
Liquidation preferences	35	–	–	–	–	–	⋆⋆	⋆⋆
Drag-along	30	–	–	–	–	–	⋆⋆⋆	⋆⋆
Tag-along	30	–	–	–	–	–	⋆⋆⋆	⋆
Vesting	35	–	–	–	–	–	–	–
Pre-emption rights	30	–	–	–	–	–	–	–
None of the above	35	–	–	–	–	–	–	–

⋆Coefficient significant at 10% level; ⋆⋆coefficient significant at 5% level; ⋆⋆coefficient significant at 1% level.

expansion stage SEs (observed count of 16 versus an expected count of 18), (ii) is more used while backing non-profit SEs (observed count of 24 versus expected count of 21), (ii) is less used while backing for-profit SEs (observed count of 10 versus expected count of 14). Equity financing is more used in the case of backing for-profit SEs (observed count of 11 versus expected count of 6.5). Last, quasi-equity tends to be (i) more used for expansion stage SEs (observed count of 10 versus expected count of 7.5), and (ii) more used for for-profit SEs (observed count of 10 versus expected count of 5.6).

Panel B of Table V indicates significant differences with respect to non-profit SEs, which tend to be less formally valuated with an observed count of 6 versus expected count of 8. Panel C identifies differences in terms of use of anti-dilution provisions, liquidation preferences, drag-along, and tag-along and the organizational form of the backed SEs. Again, a cross-tab analysis indicates they tend to be more used while backing for-profit SEs, with observed count of 7 versus expected count of 4 for anti-dilution, observed count of 5 versus expected count of 3.4 for liquidation preferences, observed count of 3 versus expected count of 1.5 for drag-along, and observed count of 5 versus expected count of 2.5 for tag-along.

Table VI reports the Spearman's correlation coefficient between frequency of formal monitoring, the importance of trust and type of instrument used (Panel A), valuation (Panel B) as well as contractual provisions (Panel C). Results indicate the existence of a significant negative correlation between grant financing and the frequency of formal meetings and a positive correlation between equity financing and formal monitoring. Even though correlations are not significant, a negative value is found with respect to all types of interactions considered here and grant financing.

Results

The subsequent empirical analysis focuses on understanding the strength of the relationship

TABLE VI

Spearman correlation between frequency of formal monitoring, importance of trust and securities, valuation methodology, and contractual provisions

	Number of observations	Frequency of formal meetings	Importance of trust
Panel A: Security			
Grant	33	−0.169	0.395***
Equity	35	0.109**	−0.002
Quasi-equity	36	0.050	−0.026
Subordinated debt	35	−0.049	0.243
Senior debt	36	−0.058	0.270*
Panel B: Valuation			
Valuation performed	31		−0.307
Panel C: Contractual provisions			
Anti-dilution	35	−0.078	−0.321**
Liquidation preferences	35	−0.128	−0.338**
Drag-along	30	0.147	−0.244
Tag-along	30	0.155	−0.310*
Vesting	35	−0.069	−0.276*
Pre-emption rights	30	0.109	−0.329**
None of the above	35	0.106	−0.149

Note: This table presents the Spearman non-parametric correlation coefficients across securities, contractual provisions and frequency of interaction between the PhVC investor and the backed SE. *Coefficient significant at 10% level; **correlation significant at 5% level; ***correlation significant at 1% level.

existing among instrument used, valuation, and contractual provisions with moral hazard and stewardship indicators, measured in terms of frequency of interaction between the PhVC investor and backed SEs and trust.

Type of instrument used

As presented in the previous section, a multivariate regression was performed. The estimates for Eq. 1 are presented in the second column of Table VII. Securities are able to explain 58.4% of the variance in the frequency of formal monitoring. The main finding is the existence of a significant negative coefficient between frequency of formal monitoring and the use of grant financing ($\beta = -0.411$, $p < 0.1$) and SEs active in the healthcare sector, whereas a positive significant coefficient is obtained for equity ($\beta = 0.582$, $p < 0.01$). Findings thus support Proposition 1; in fact, if moral hazard was actually able to describe the PhVC–SE investment relationship, the expectation was to have a positive significant coefficient between the frequency of formal monitoring and the use of grant financing. This might suggest that stewardship, rather than moral hazard, is better able to describe the PhVC deal structuring behavior in capital structure. Concerning this point, one of the interviewed PhVCs declared:

> [Name of PhVCs] does provide capital and strategic assistance but at the moment capital is provided in the form of grants. […]So we would fund an IT system or, you know, pay salaries for senior members of staff or a working capital facility. So in that sense it is equity like but literally speaking it is structured as a grant. So there is no return of the money back to [Name of PhVCs]. It is equity like in time engagement. (PhVCs B)

However, moral hazard becomes an issue when equity is used to finance PhVC deals. This typically happens only when financing for-profit organizations, as they are not subject to the non-distribution constraint. To this respect, one of the interviewed PhVCs declared:

> We have also made loans and equity investments in the for-profit SEs. So far we have provided loan to one organization that was a non-profit […] it was a more

TABLE VII

Multivariate regression for frequency of formal monitoring, importance of trust and instrument used

Type of instrument	Number of observations	Frequency of formal monitoring	Importance of trust
Grant	33	−0.411*	−0.243
Senior debt	35	0.153	−0.130
Subordinated debt	36	−0.285	0.158
Quasi-equity	35	0.091	−0.162
Equity	36	0.582***	−0.265
Early-stage SEs	33	0.334	0.199
Education SEs	37	−0.233	−0.013
Health SEs	37	−0.519**	0.025
American PhVCs	40	−0.176	−0.119
For-profit PhVCs	40	0.141	0.193
Non-profit SEs	40	−0.081	0.421*
R^2		0.584	0.353
Adjusted R^2		0.298	−0.003

Note: This table presents multivariate regression coefficient for Eqs. 1 and 4 controlling for stage of development of backed SEs, industry, geographical distribution of the PhVCs, typology of PhVCs, organizational form of backed SEs. *Coefficient significant at 10% level; **coefficient significant at 5% level; ***coefficient significant at 1% level.

developed organization so I think it must have been a capital need at that moment. (PhVCs A)

Regression results, thus, suggest that PhVCs perceive the risk that the social entrepreneur might implement a perks-and-stealing behavior or, also, focus on self-interest maximization through profits rather than focusing on achieving the SEs' social mission.

Estimates for Eq. 4 are presented in the third column of Table VII. Accordingly, the importance of trust increases by 0.421 whenever PhVCs invest in non-profit SEs, a significant positive influence of non-profit SEs is identified. Findings indicate that 35.3% of the variance in Importance of trust is explained by the model. However, a negative adjusted R^2 is obtained, indicating that a low number of observations are affecting the power of the estimates resulting in just one coefficient being significant.

However, a one-way MANOVA analysis reported in Table VIII reveals a significant multivariate within-subjects main effect for grant, equity, and health, and for the interaction term quasi-equity and equity (interaction terms are not presented in Table VII for conciseness but are available upon request). Given the significance of the overall test, univariate main effects were examined.

As reported by Table IX, significant univariate main effects for frequency of formal monitoring were obtained for all the significant variables. It also suggests that the significant correlation obtained with multivariate regression between importance of trust and non-profit SEs was obtained by chance, as the negative adjusted R^2 and the discussion around the sample size indicated.

Valuation

Estimates for Eq. 2 are shown in Table X. Results support Proposition 2 as the regression coefficient is negative and significant at 5% level, indicating that stewardship, as measured by the importance of trust, supersedes the use of traditional valuation models. Furthermore, as in the case of capital structure, a negative relationship affects the importance of trust and American PhVCs whereas a positive one is identified with respect to non-profit SEs.

TABLE VIII

MANOVA test for within-subjects effect for frequency of formal monitoring, importance of trust and type of instrument used

Type of instrument	Number of observations	Wilks' Lambda	Partial η^2	Observed power
Grant	33	0.595*	0.405	0.505
Senior debt	35	0.886	0.114	0.129
Subordinated debt	36	0.753	0.247	0.268
Quasi-equity	35	0.867	0.133	0.146
Equity	36	0.544**	0.456	0.596
Early-stage SEs	33	0.854	0.146	0.157
Education SEs	37	0.693	0.307	0.348
Health SEs	37	0.574*	0.062	0.542
American PhVCs	40	0.968	0.032	0.069
Non-profit PhVCs	40	0.672	0.328	0.379
Non-profit SEs	40	0.752	0.248	0.269

Note: This table presents the MANOVA test for within-subject effects between Frequency of formal monitoring, Importance of trust, and Securities, controlling for stage of development of backed SEs, industry, geographical distribution of the PhVCs, typology of PhVCs, and organizational form of backed SEs. *Coefficient significant at 10% level; **coefficient significant at 5% level; ***coefficient significant at 1% level.

TABLE IX

MANOVA univariate tests

Type of instrument	Frequency of formal monitoring			Importance of trust		
	F	Partial η^2	Observed power	F	Partial η^2	Observed power
Grant	7.485**	0.405	0.703	0.984	0.082	0.148
Equity	5.997**	0.353	0.607	0.480	0.042	0.097
Health	7.262**	0.398	0.690	0.034	0.003	0.053
Quasi-equity * Equity	6.836**	0.383	0.664	1.232	0.101	0.174

Note: This table presents the MANOVA univariate tests for within-subject effects between Frequency of formal monitoring, Importance of trust, and grant, equity, health, and interaction term of quasi-equity * equity controlling for stage of development of backed SEs, industry, geographical distribution of the PhVCs, typology of PhVCs, organizational form of backed SEs. *Coefficient significant at 10% level; **coefficient significant at 5% level; ***coefficient significant at 1% level.

TABLE X

Multivariate regression for importance of trust and use of valuation methods

	N	Importance of trust
Use of valuation	31	−0.467**
Early-stage SEs	33	−0.186
Education SEs	37	0.203
Health SEs	37	0.037
American PhVCs	40	−0.405*
For-profit PhVCs	40	−0.035
Non-profit SEs	40	0.390*
R^2		0.451
Adjusted R^2		0.224

Note: This table presents multivariate regression coefficient for Eq. 2 controlling for stage of development of backed SEs, industry, geographical distribution of the PhVCs, typology of PhVCs, and organizational form of backed SEs. *Coefficient significant at 10% level; **coefficient significant at 5% level; ***coefficient significant at 1% level. The variable multiples was removed to avoid perfect multicollinearity.

Contractual provisions

Table XI shows coefficient estimates for Eqs. 4, and 5 testing for moral hazard and stewardship using contractual provisions as independents. Positive significant coefficients are obtained when vesting is used ($\beta = 0.755$, $p < 0.1$) and when and typical VC covenants are not used ($\beta = 0.768$, $p < 0.1$). No other significant coefficients are found. A one-way MANOVA analysis indicates no significant main effects (results are not reported for conciseness but are available upon request).

If focusing on the analysis of the level and direction of regression coefficients, at first sight, it appears that PhVC contractual agreements try to minimize moral hazard through the use of standard VC contractual provisions. Positive coefficients are found between anti-dilution, liquidation preferences, tag-along, pre-emption rights, and vesting and the frequency of formal monitoring. However, since the mentioned provisions are significantly associated with the use of equity (cf. Table XII), and the use of equity can only be possible in for-profit SEs, findings confirm results obtained in the capital structure section: when PhVCs back for-profit SEs, they tend to structure their deals as done in traditional VC and in such a way that the risk for opportunistic behaviors is minimized. On the contrary, when PhVCs are backing non-profit SEs, they tend to behave more as stewards rather than principals: the non-distribution constraint pulls away moral hazard risks and investor can indeed focus their activity at the strategic support level.

Limitations, extensions, and further research

This article introduced the first analysis of the deal-structuring phase in PhVC investments. As the PhVC field has emerged mainly in the last decade,

TABLE XI

Multivariate regression for formal monitoring, importance of trust and use of contractual provisions

Contractual provisions	*N*	Frequency of formal monitoring	Importance of trust
Anti-dilution	35	0.618	0.106
Liquidation preferences	35	–	–
Drag-along	30	–	–
Tag-along	30	0.739	0.043
Pre-emption rights	35	0.606	−0.780
Vesting	30	0.755⋆	−0.086
None of the above	35	0.768⋆	0.323
Early-stage SEs	33	−0.090	−0.292
Education SEs	37	−0.079	0.115
Health SEs	37	0.169	0.056
American PhVCs	40	0.234	−0.232
For-profit PhVCs	40	0.187	0.260
Non-profit SEs	40	0.518	0.268
R^2		0.636	0.552
Adjusted R^2		0.135	0.105

Note: This table presents multivariate regression coefficient for Eqs. 4 and 6 controlling for stage of development of backed SEs, industry, geographical distribution of the PhVCs, typology of PhVCs, organizational form of backed SEs. ⋆Coefficient significant at 10% level; ⋆⋆coefficient significant at 5% level; ⋆⋆⋆coefficient significant at 1% level.

TABLE XII

Spearman correlation between securities and contractual provisions

	Anti-dilution	Liquidation preferences	Drag-along	Tag-along	Pre-emption rights	Vesting	None of the above
Grant	−0.365⋆	−0.248⋆	−0.457⋆⋆	−0.457⋆	−0.044	−0.194	0.292⋆
Senior debt	0.084	0.116	−0.123	−0.123	−0.104	0.199	0.289
Subordinated debt	0.667⋆⋆⋆	0.447⋆⋆⋆	0.277	0.348	−0.104	0.196	0.000
Quasi-equity	0.406	0.106	0.019	0.088	0.088	0.178	0.000
Equity	0.764⋆⋆⋆	0.488⋆⋆⋆	0.462⋆⋆	0.595⋆⋆⋆	0.595⋆⋆⋆	0.385⋆⋆	−0.260⋆

Note: This table presents the Spearman non-parametric correlation coefficients between securities and contractual provisions. ⋆Correlation significant at 10% level; ⋆⋆correlation significant at 5% level; ⋆⋆⋆correlation significant at 1% level.

there are limitations in the analysis. As stated earlier, while obtaining a high response rate, the respondent sample is too small to obtain powerful results from standard multivariate regression models.

Second, despite having strived to minimize both undercoverage error by consulting different databases and the inclusion of ineligible units in the analysis, the absence of a PhVC association in the United States makes the identified the US population subject to sampling error. Furthermore, not all PhVCs that are active in Europe might be part of the European Venture Philanthropy Association. Sources utilized to integrate the NVCA list of PhVCs and that provided by EVPA were integrated with additional databases, which, however, were before the analysis conducted in this study. As such, future research should try to enlarge the database of PhVCs, identifying others that are active in the field and including those that were created after the survey used here was sent out. Simultaneously, the

integration of new PhVCs included in the database with an effort to capture more of the non-respondents would allow the researcher to simultaneously solving for power.

Third survey responses involve some level of subjectivity. In particular, the statistical relationships between subjectively assessed characteristics of moral hazard and stewardship with the PhVCs' deal structuring behavior may reflect a post-hoc rationalization of the decision. Also, the analysis conducted here focused on the PhVCs' portfolio level.

Future research may analyze PhVC investment at the backed organization level, studying the contractual agreements actually signed by PhVCs and backed social entrepreneurs. This kind of analysis could shed more light both on the nature of the stewardship services provided to SEs and on the way these are supplied. Also, new insights into the mechanisms through which trust between the PhVCs and the backed social entrepreneur is built and how they impact the success of the investment both in terms of sustainability of the backed SE and in the maximization of social impact could be obtained.

In addition, future research could also examine whether and under which conditions the strategies borrowed by PhVCs from traditional VCs can effectively be applied to the financing of for-profit social ventures and how social end financial motives are mixed in the strategic management of the investment.

Conclusions

The PhVC industry is a unique sector as it combines the use of traditional VC investment practices with the objective of social impact maximization rather than financial return. This is a new way of giving. Despite the different value proposition, if PhVC implicitly derives from VC, moral hazard and agency theory should be able to describe the PhVCs' investment behavior as they do in traditional VC. Within this setting, we build on previous research on VC by relating and tracking the presence and management of moral hazard issues in the deal structuring phase of the investment, both in terms of securities and contractual provisions used in PhVC deals. In contrast to this, we also test whether stewardship rather than moral hazard is better able to describe the PhVCs behavior.

This article is the first exploratory study on deal structuring in PhVC and introduced for the first time the analysis of a unique and detailed data set on European and American PhVC investors. Construct validity and triangulation were controlled for by integrating qualitative and quantitative research methodologies, i.e., interviews and survey techniques.

Data introduced in this article indicated that stewardship, assuming an interest convergence between PhVCs and backed SEs, is better able to describe the deal-structuring phase of PhVC investments as opposed to moral hazard, when backed SEs are non-profit. Findings support the claim that moral hazard issues are not perceived as severe while financing non-profit SEs as those PhVCs that finance the deal through grants tend to formally monitor backed SEs less frequently; also, they tend to place more importance on trust rather than on formal control devices. As such, results show that moral hazard is indeed a relevant issue while financing for-profit SEs as the non-applicability of the non-distribution constraint makes for-profit SEs more similar to traditional entrepreneurial ventures and PhVCs to more traditional VCs. On the one hand, for-profit social entrepreneurs might pursue perks-and-stealing strategies. On the other, they might focus on profit maximization in pursuit of self-interest considerations, rather than on social impact. Similarly, data show that stewardship-related-accounting information is more relevant than formal accounting valuation, as PhVCs significantly valuate SEs less when they trust them more. Trust is essential while valuing SEs' needs as there is not a market that prices social organizations and thus no comparables are available to apply the multiple valuation as done in traditional VC.

Results on contractual agreements provide further support to the stewardship behavior of PhVCs backing non-profit SEs and of acting as principals while financing for-profit SEs. To this respect, as Dees and Anderson (2003, p. 6) argue: "Successful [for-profit] social entrepreneurs need to understand and address the challenges of combining the profit motive with social objectives in a way that still preserves at least some of the benefits that make the for-profit structure attractive in the first place.

In attempting to do so, for-profit social entrepreneurs should be particularly aware of the additional complexity that arises when combining two different, sometimes divergent, objectives, as well as the potential pressures to compromise one or both of their objectives.'' As such, the non-distribution constraint appears to be the most effective governance tool while aligning the interest of PhVCs and backed SEs.

This study makes several contributions for both researchers and practitioners. From a scholar perspective, it builds a theory on the PhVCs investment model and shows that, while common belief is that PhVCs implicitly derives from VC sharing with it the same theoretical organizational model, this is partially not the case: PhVCs share similar issues and constraints as VCs while financing for-profit SEs, but behave differently while backing non-profit organizations. To this respect, the research makes an important contribution to the VC literature as it is possible to build contractual relationship based on trust rather than on self- and profit-motivated-interests. Also, it shows that social and entrepreneurial finance are indeed different, reflecting differences on the organizational identity level that impact mainly the deal structuring phase.

Insights are also gained by entrepreneurship scholars, contributing to the social entrepreneurship literature by presenting the first exploratory study on a new form of financing. We thereby suggest that social and commercial entrepreneurship are indeed different as the non-distribution constraint makes them subject to different managerial behaviors.

From a practitioner's perspective, it provides a guideline on PhVC investments both for social entrepreneurs seeking funds and for those actors who are interested in entering the PhVC field, arguing that VC deal structuring practices must be adjusted to take into account for the peculiar characteristics of SEs related to the organizational form these undertake. It also indicates how deal structuring is performed in PhVCs and the relevant issues that PhVCs face while financing a social organization. Social entrepreneurs thus can have a better idea of what to expect when applying for PhVC financing. In addition, this research suggests to traditional VCs and private equity players as regards how to improve the way they operate as well as convincing and educating them in that deals can be structured differently than done so far, while achieving the same goal.

At the same time, this research sheds light for traditional forms of philanthropy, as it shows that it can move from the role of mere capital provider to that of fully engaged partner, monitoring and tracking the performance of the backed SEs while trying to maximize its social impact: ''The value created in this way extends beyond the impact of one grant: it raises the social impact of the grantee in all that it does and, to the extent that grantees are willing to learn from one another, it can increase the effectiveness of other organizations as well (Porter and Kramer, 1999, p. 124).'' As such, traditional philanthropists moving into the PhVC arena might find it more efficient for social value creation to become involved in the strategic management of the SEs receiving funds, creating value, and signaling the value they are creating to other players.

Findings thus suggest that the success of the PhVC investment model, on a social, financial, as well as environmental level might be influenced by the degree to which its surroundings approximate the idea of a civic community, with a steady recognition and pursuit of the public good at the expenses of all purely individual private ends. The dichotomy between self-interest and altruism can easily be overdrawn, as no society can renounce the powerful motivation of self-interest. Citizens in the civic community are not required to be altruist; in the civic community, however, citizens pursue what de Tocqueville (2009) termed ''self-interest properly understood,'' i.e., self-interest defined in the context of broader public needs, self-interest that is ''enlightened'' rather than ''myopic,'' self-interest that is alive to the interests of others. Trust enables the civic community more easily to surmount what economists call ''opportunism,'' in which shared interest are unrealized because each individual, acting in wary isolation, has an incentive to defect from collective action.

Note

[1] Based on the Council of American Research Organization (CASRO), on the American Association for Public Opinion Research (American Association for Public Opinion Research, 2008), and on Lynn et al. (2001) surveys can be considered complete if at least 80% of the questions have been reliably and validly answered.

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The Role of Corruption, Culture, and Law in Investment Fund Manager Fees

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ABSTRACT. This article considers an international sample of venture capital and private equity funds to assess the role of law, corruption, and culture in setting fund manager fees. 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. 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.

KEY WORDS: managerial compensation, incentive contracts, private equity, law and finance

JEL CLASSIFICATION: G23, G24, G28, K22, K34

Introduction

Over the course of the mid-2007–2009 financial crisis, fees paid to financial managers have been rigorously scrutinized. There are numerous examples that have become notorious, largely associated with government bailouts and subsequent bonus payments. For example, Sir Fred Goodwin, the former CEO of the Bank of Scotland, received fees that led *The Economist* to refer to him as ''dishonorable.''[1] There are blogs that cite a deathwatch for Sir Fred Goodwin,[2] just as there were numerous reports of death threats for AIG employees after their bonus payments were made public subsequent to government bailouts.[3] Credit Suisse approved in April 2010 very controversial bonus payments.[4] Similar examples are so very widespread that it is hard to not make the mental connection between regulation, corruption, ethics, and fees in the financial community.

Likewise, there has been a significant and growing concern in the venture capital and private equity industries worldwide of the role of corruption in influencing fund manager activities. For example, the high-profile law firm S. J. Berwin noted in their Private Equity Comment[5] (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. S. J. Berwin commented that… ''It 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.'' S. J. Berwin further commented that the private equity industry worldwide would suffer from the longer-term effects from the crackdown on corruption for many years to come. S. J. Berwin expressed particular concern with international venture capital and private equity transactions and exposure to firms linked to governments and corruption.

This wave of media coverage and public outrage against fund manager fees in recent years suggests a need to better understand the determinants of fund manager fees. Fund manager fees comprise many components, including fixed fees, performance based fees, clawbacks, and cash versus share payments.

The contracts that regulate the payment of fees for fund managers of venture capital and private equity provide a useful context in which 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). Institutional investors include pension funds (Jeng and Wells, 2000; Mayer et al., 2005) (which are most common across countries), insurance companies, banks, endowments, etc. Venture capital and private equity funds typically have a finite life of 10–13 years. This life-span allows the fund managers to have sufficient 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 allows for an appropriate annual salary for the fund managers and allows the fund managers to meet overhead costs over the life-span of the fund, particularly in times before 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 later years. Institutional investors into funds can state in limited partnership contracts that payment terms come either in the form of cash or share distributions.

In this article, 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, as shown in a prior study with a sample of 50 venture capital funds worldwide (Cumming and Johan, 2009). We extend this prior study in two important dimensions. First, we obtain a much larger and more recent sample to assess the robustness of prior findings. Second, and perhaps more importantly, we explore for the first time the effect of the specific features of a country's legal and institutional setting on fees, including different components of legal conditions (specific indices from La Porta et al., 1998) as well as cultural dimensions on fees (Hofstede's cultural indices) and corruption.

Based on a sample of 123 venture capital and private equity funds around the world, we find 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 us align the interests of managers and investors (Cumming and Johan, 2006). 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.

Our article is related to a growing literature on law and finance associated with financial intermediation. Prior study has shown that fees depend on legal conditions (Cumming and Johan, 2009; for related study, see Keuschnigg, 2004; Keuschnigg and Nielsen, 2001, 2003, 2004) but the dearth of data in that study with 50 observations led to inconclusive statements about what specifically mattered in terms of specific attributes of a legal system that affected fees. Other related evidence developed contemporaneously has shown that legal systems affect venture capital financial contracts with entrepreneurs and investment performance (Cumming et al., 2006; Cumming and Johan, 2009; Cumming and Waz, 2010; Hege et al., 2009; Lerner and Schoar, 2005), as do cultural factors across countries (Hazarika et al., 2009). Our article contributes to the literature by examining how specific legal and cultural differences across countries matter for fee structures.

This article is organized as follows. "Hypotheses" section considers the institutional context and develops hypotheses pertaining to the determinants of fees. The data and summary statistics are presented in "Data" section. Empirical tests follow in "Econometric tests" section. Concluding remarks are provided in the last section.

Hypotheses

In "The role of corruption, culture, and law on fund manager compensation" section, we first briefly outline predictions with regard to the relation between legal conditions and managerial compensation. Thereafter in "Control variables for analyzing managerial compensation across countries" section, we discuss the importance of certain control variables.

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. 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 (Cressy, 2002; Cressy and Toivanen, 2001; Cressy et al., 2007; Cressy and Farag, 2011; Gompers and Lerner, 1999; Sahlman, 1990).

We expect countries with less corruption and superior legal settings to affect fees 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 study 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 (Cumming et al., 2005; Lerner and Schoar, 2005). As such, we expect risk-averse fund managers to prefer higher fixed fees in exchange for a lower performance fees to garner a more certain income stream in countries with weaker legal conditions.

Similarly, as fee 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 among 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, while 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.[6]

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 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.[7] 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 among 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 private 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 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.

Control variables for analyzing managerial compensation across countries

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, with regard 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). 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 signaling 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, 1999). 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). Moreover, 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.

In the empirical analyses of the hypotheses outlined in "The role of corruption, culture …" section, these and other control variables identified in this subsection are used. The data and summary statistics are described in the next section. Thereafter in "Econometric tests" section, multivariate empirical tests are provided. A discussion of limitations, alternative explanation, future research, and concluding remarks are described in "Conclusion" section.

Data

Methods and survey instrument

The data used in this study are drawn mainly from a survey conducted over the period between 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 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, and 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.

We integrate in our sample all the investment funds without distinction between private equity funds or venture capital funds. The data collected can be classified into different groups, which are summarized in Table I. First, there are data related to the compensation of the management partners: % of management fees, % of carried interest performance fees, the application of the clawbacks clause, the distribution of cash to institutional investors instead of shares. Second, there are data on corruption which is measured with the Transparency International Corruption Perception Index. Third, there are data on culture, as measured with Hofstede's cultural dimensions. Fourth, there are data on legal conditions of the country measured by the Legality Index (La Porta et al., 1997, 1998). The Legality Index is derived from a principal components analysis of the covariance matrix from the five observed legality variables (Berkowitz et al., 2003). Fifth, there are data on the country's economic conditions: the GNP per capita, the MSCI Index, and the Industry market/book ratio calculated according to the sectors targeted by investment funds. Sixth, there are data on the characteristics of institutional investors: the proportion of banks institutional investors, government investors, and other types of investors. Seventh, there are data on the characteristics of the fund: funds size, funds organization, and types of investments. Eighth, there are data on the characteristics associated to the fund managers specially their training level (the proportion of MBA, CFA, or PhD-trained fund managers) and relevant experience. These variables are explicitly defined and summarized in Table I.

Potential sample selection bias

To summarize, the potential respondents were identified from various sources such as (1) The

TABLE I

Definition of variables

Variable	Description
Compensation variables	
Fixed management fee %	The fund managers' fixed fee as a percentage of the funds raised from the institutional investors
Carried interest performance fee %	The fund managers' carried interest performance fees as a percentage of the profits earned by the fund
Clawbacks	A dummy variable equal to one if the fund allows for clawbacks against the fund managers but not any of the fund investors. A clawback enables the fund investors to lower the fee received by the fund manager in the event of poor performance of the fund
Cash distributions	A dummy variable equal to one if the fund managers are required to distribute cash to the institutional investors instead of shares (for realized capital gains from investments in entrepreneurial firms)
Legal and market conditions	
Corruption Perception Index	Transparency International's *Corruption Perceptions Index* ranks countries by their perceived levels of corruption, as determined by expert assessments and opinion surveys. The scale ranges from 0 to 10 with higher numbers indicating lower levels of corruption. Source: http://www.transparency.org/policy_research/surveys_indices/cpi
Rule of law	Assessment of the law and order tradition in the country produced by the country risk rating agency International Country Risk (ICR). Scale from zero to 10, with lower scores for less tradition for law and order. Source: La Porta et al. (1998)
Efficiency of the judiciary	Assessment of the "efficiency and integrity of the legal environment as it affects business, particularly foreign firms" produced by the country risk rating agency Business International Corp. It "may be taken to represent investors' assessments of conditions in the country in question. Scale from zero to 10; with lower scores, lower efficiency levels. Source: La Porta et al. (1998)
Country Legality Index	Weighted average of following factors: efficiency of judicial system, rule of law, corruption, risk of expropriation, risk of contract repudiation, shareholder rights (as per La Porta et al., 1997, 1998). Legality Index = 0.381 ⋆ (Efficiency of the judiciary) + 0.5778 ⋆ (Rule of law) + 0.5031 ⋆ (Corruption) + 0.3468 ⋆ (Risk of expropriation) + 0.3842 ⋆ (Risk of contract repudiation). Where the weighted average is not available, especially for less-developed countries, an approximate index is derived by multiplying the country's GNP per population with a constant variable obtained by carrying out a regression of the legality indices available. Scale ranges from 8.51 (Philippines) to 21.91 (Switzerland); higher numbers indicate 'better' legal systems. The log of this variable is used in the empirics to account for a diminishing effect with larger numbers. Source: Berkowitz et al. (2003)
Legal origin	Dummy variables equal to 1 for a fund organized in countries of different legal origin, including English, French, German and Scandinavian

TABLE I

continued

Variable	Description
Hofstede cultural dimensions	Hofstede's five dimensions of culture. The dimensions are: Small versus large power distance, individualism versus collectivism, masculinity versus femininity, weak versus strong uncertainty avoidance and long versus 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, and 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/

TABLE I

continued

Variable	Description
GNP per capita	The GNP per capita of the country in which the fund is formed. The log of this variable is used
MSCI Index	The country-specific MSCI Index Return taken for the year before that when fund raising commenced. The year before fund raising is deemed to be most relevant as decisions to invest in private equity by institutional investors will be based on available economic indicators. The log of (1 + MSCI) is used in the empirics to account for a diminishing effect with larger numbers
Vintage year of fund	The year fund raising commences
Outbound offshore	A dummy variable equal to 1 for a fund located offshore that obtains its capital from investors from a certain jurisdiction but fund investments are made primarily in assets other than in the jurisdiction of the fund and the fund investors. With reference to United States jurisdictional boundaries, a fund will be considered to be an outbound offshore fund if it obtains capital from United States investors, but it invests outside the United States
Inbound offshore	A dummy variable equal to 1 for a fund located offshore that obtains its capital from investors from various jurisdictions but fund investments are made primarily in assets in a certain jurisdiction. With reference to United States jurisdictional boundaries, an inbound offshore fund will be a fund located offshore which invests primarily in assets within the United States yet obtains its capital from non-United States investors
Tax difference	A variable equal to, for top marginal tax rates, (Income tax rate − Capital gains tax rate) * (Limited partnership dummy variable), for partnerships for which carried interest is taxed at the capital gains rate, and fixed management fees are taxed at the income tax rate
Fund manager characteristics	
Percentage of legally trained fund managers	Percentage of principal fund managers with investment-making decisions, who are legally trained, or are qualified as lawyers. Where managers have some extent of legal training, that fraction of the extent of legal training is also reflected in the data
Percentage of MBA/CFA-trained fund managers	Percentage of principal fund managers with investment-making decisions, who have obtained an MBA or CFA qualifications. Where managers have some extent of such training, that fraction is also reflected in the data
Percentage of PhD (science)-trained fund managers	Percentage of principal fund managers with investment-making decisions, who have obtained a PhD in a science-based discipline. Where managers have some extent of formal scientific training, that fraction of training is also reflected in the data
Percentage of PhD (non-science)-trained fund managers	Percentage of principal fund managers with investment-making decisions who have obtained a PhD in a non-science based discipline. Where managers have some extent of advanced Ph.D. studies, that fraction of training is also reflected in the data
Average # years of relevant work experience principal fund managers	Average number of years relevant work experience of principal fund managers at the time of fund raising. The log of this variable is used in the empirics to account for a diminishing effect with larger numbers

TABLE I

continued

Variable	Description
Fund characteristics	
Funds raised	The fund size, or amount of funds raised in US Dollar. Where the amount is provided in a local currency, an exchange rate as at December 2003 is used for conversion of such amounts into US Dollar equivalents. The log of this variable is used in the empirics to account for a diminishing effect with larger numbers
Bank institutional investors	The proportion of banks as the fund's institutional investors
Government investors	The proportion of government agencies or ministries as institutional investors
Limited partnership funds	A dummy variable equal to 1 for the fund being organized as a limited partnership
Industry market/book	The industry market/book ratio of the industries for which the fund has invested in. The industry market/book ratio of five general categories, Biotechnology and Medical, Communications and Internet, Computers and Electronics, Manufacturing and others, is obtained by averaging the total book value of specific industries falling within the general categories. The log of this variable is used in the empirics to account for a diminishing effect with larger numbers
Early stage investee focus	A dummy variable equal to 1 for funds which indicate a focus on financing provided to firms in their early/expansion stages of development (not late stages or buyout stages). More specific stages of focus were not tractable due to international differences in the definition of stage focus, as well as style drift that is often observed among different stages of development

This table defines the variables considered in this article. Summary statistics are presented in Tables II and III.

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 2500 investment funds around the world with the use of a software for online survey (WysuForms).

One limitation in 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 study carried out by Gompers and Lerner (1999) utilized a sample of 140 contracts for establishing funds, obtained from institutional investors (two fund-of-funds and one endowment). Litvak (2004, 2008) has data from 38 funds in the U.S., and Metrick, and Yasuda (2009) have data from 203 funds in the U.S. We believe however that by obtaining data from funds situated both in and outside the U.S., 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 eight funds from Malaysia, six funds from Germany, five funds each from Australia, Finland, and South Africa, four funds each from Brazil and the Netherlands Antilles, three funds each from the Philippines Belgium, Canada, India, Italy, Spain, and Switzerland, two funds each from the Cayman Islands and Mexico, and 1 fund each from the New Zealand, Singapore, and Luxembourg (see Table II). The number of respondents, and representation of funds from both the 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 with 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 set we have collected here is unique.

Summary statistics

Table II summarizes the data for each country. The level of the Legality Index, corruption, and cultural variables for each individual country is indicated in Table II, and for all countries together in Table III. A higher Legality Index indicates better substantive legal content pertaining to investing, the quality, and likelihood of enforcement (see e.g., Ding et al., 2011; Knill, 2011). Higher values for the corruption index indicate less corruption, and higher values for the cultural indices indicate that their cultural dimensions are more pronounced.

TABLE II

Summary of the data

	Total	Belgium	Brazil	Finland	France	Germany	Italy	Luxembourg	Mexico	Netherlands	Netherlands Antilles	Philippines	Spain	Switzerland
Summary of the data (civil law)														
Number of funds	69	3	4	5	21	6	3	1	2	11	4	3	3	3
Compensation														
Management fees (%)	2.34	2.33	3.50	2.50	2.14	2.50	2.50	2.00	3.00	2.32	0.80	2.00	2.33	2
Carried interest (%)	18.82	20.00	10.75	20.00	19.33	19.17	20.00	20.00	20.00	20.09	15.00	20.00	20.00	20.33
Clawbacks	15	0	2	1	9	1	1	0.00	0.00	1	0	0	0	0
Cash distribution	48	1	4	4	17	3	3	1.00	1.00	4	4	1	3	2
Legal and market conditions														
Corruption Perception Index	7.17	7.5	3.75	9.06	6.9	8.1	3.87	8.4	3.3	8.75	8.7	2.46	6.1	9.05
Rule of law	8.89	10	6.32	10	8.98	9.23	8.33	10	5.35	10	10	2.73	7.8	10
Efficiency of the judiciary	8.46	9.5	5.75	10	8	9	6.75	10	6	10	10	4.75	6.25	10
Legality Index	19.26	20.82	14.09	21.49	19.67	20.44	17.23	21.91	12.82	21.67	21.67	8.51	17.13	21.91
Uncertainty Avoidance Index	70.61	94	76	59	86	65	75	70	82	53	53	44	86	58
Masculinity Index	41.57	54	49	26	43	66	70	50	69	14	14	64	42	70
Power Distance Index	53.57	65	69	33	68	35	50	40	81	38	38	94	57	34
GNP per capita	22668.89	21650.00	6788.22	32134.24	24467.97	27178.75	20324.97	35760.00	6772.10	25058.18	20950.00	20981.60	24938.67	37156.23
MSCI Index	6047.13	0.19	60109.48	657.98	1123.03	379.17	743.86	0.01	12750.97	278.23	0.16	935.16	1042.07	592.36
Vintage year of fund	2000.70	1999.33	2002.00	2003.80	1999.00	2001.33	2000.33	1997.00	2003.00	1999.73	2000.25	1999.00	2004.67	1999.67
Outbound offshore	0.19	0.00	0.00	0.20	0.00	0.17	0.00	1.00	0.00	0.09	1.00	0.00	0.00	0.00
Inbound offshore	0.05	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.50	0.09	0.00	0.00	0.00	0.00
Fund manager characteristics														
Proportion MBA/CFA (%)	67.40	58.33	83.75	61.00	39.68	65.00	38.33	80.00	90.00	61.82	80.00	100.00	61.67	56.67
Proportion of PhD (%)	13.38	33.33	0.00	2.20	24.35	5.83	16.67	5.00	0.50	7.36	5.00	33.33	17.00	23.33
Proportion of legally trained manager (%)	7.38	8.33	13.75	5.00	13.46	2.83	21.67	5.00	1.00	10.91	0.00	0.00	4.00	10.00
Years work experience	15.33	11.33	15.50	13.60	14.14	15.83	15.67	10.00	25.00	12.18	14.00	25.00	14.00	13.00
Funds raised	1.87E+08	1.43E+08	2.45E+08	9.91E+07	2.19E+08	1.73E+08	2.18E+08	3.60E+07	4.79E+07	3.93E+07	3.04E+08	5.30E+08	2.30E+08	1.47E+08
Limited partnership funds	0.55	0.00	0.50	0.80	0.62	0.83	0.67	0.00	0.50	0.27	1.00	1.00	0.67	0.33
Industry market/book	3.84	3.89	3.19	4.01	3.44	3.52	2.93	4.75	1.88	3.39	4.82	4.21	4.73	5.18
Early-stage investee focus	0.37	0.33	0.00	0.40	0.29	0.50	1.00	0.00	0.00	0.27	0.00	1.00	0.67	0.33

	Total	Australia	Canada	Cayman Islands	India	Malaysia	New Zealand	Singapore	South Africa	U.K	U.S.A
Summary of the data (common law)											
Number of funds	54	5	3	2	3	8	1	1	5	12	14
Compensation											
Management fees (%)	2.30	1.90	2.00	2.50	3.67	2.25	2.32	2.00	2.19	2.08	2.08
Carried interest (%)	17.96	20.00	20.00	12.50	18.67	19.50	20.09	20.00	11.50	19.67	17.64
Clawbacks	18	1	1	0	2	5	1	0.00	2.00	2	4
Cash distribution	40	4	2	1	3	3	4	1.00	3.00	9	10
Legal and market conditions											
Corruption Perception Index	6.82	8.7	8.63	5.82	3.4	4.88	9.6	9.2	4.66	8.15	7.5
Rule of law	8.18	10	10	8.52	4.17	6.78	10	8.57	4.42	8.57	10

TABLE II

continued

	Total	Australia	Canada	Cayman Islands	India	Malaysia	New Zealand	Singapore	South Africa	U.K	U.S.A
Efficiency of the judiciary	9.09	10	9.25	6.75	8	9	10	10	6	10	10
Legality Index	18.84	20.44	21.13	20.41	12.8	16.67	21.67	19.53	14.51	20.41	20.85
Uncertainty Avoidance Index	42.20	51	48	13	40	36	49	8	49	35	46
Masculinity Index	60.43	61	52	68	56	50	58	48	63	66	62
Power Distance Index	52.38	36	39	45	77	104	22	74	49	35	40
GNP per capita	17868.93	29222.88	22602.23	18060.00	670.00	5176.54	25058.18	20981.60	3331.82	25108.51	28477.50
MSCI Index	409.67	681.77	534.28	0.14	281.80	63.72	278.23	935.16	177.00	783.85	360.73
Vintage year of fund	2001.34	2001.60	2002.33	1999.00	2004.67	2002.00	1999.73	1999.00	2002.80	2002.00	2000.29
Outbound offshore	0.14	0.00	0.33	0.00	0.00	0.25	0.09	0.00	0.20	0.33	0.21
Inbound offshore	0.12	0.00	0.00	0.50	0.33	0.00	0.09	0.00	0.00	0.25	0.07
Fund manager characteristics											
Proportion of MBA/CFA (%)	78.38	66.67	64.00	90.00	100.00	80.00	61.82	100.00	79.40	66.08	75.79
Proportion of PhD (%)	9.04	10.40	3.33	2.50	2.00	7.13	7.36	33.33	1.60	14.58	8.21
Proportion of legally trained manager (%)	8.74	15.67	13.00	2.50	33.33	3.13	10.91	0.00	0.20	4.50	4.17
Years work experience	15.90	19.00	15.33	17.00	11.00	15.81	12.18	25.00	12.80	14.25	16.64
Funds raised	1.51E+08	2.45E+08	5.66E+07	2.45E+08	4.90E+07	3.40E+07	3.93E+07	5.30E+08	3.88E+07	1.63E+08	1.10E+08
Limited partnership funds	0.59	0.40	0.67	1.00	0.33	0.13	0.27	1.00	0.40	0.83	0.86
Industry market/book	4.52	4.43	2.95	4.37	10.22	3.72	3.39	4.21	3.92	3.99	3.96
Early-stage investee focus	0.38	0.20	0.67	0.00	0.67	0.13	0.27	1.00	0.20	0.33	0.29

This table summarizes the different characteristics of the funds forming the sample. Funds are classified by country in which they were formed, and countries are grouped in two categories: civil law and common law. The average values of each variable per country are reported (except for Clawbacks and Cash distribution, where the number of funds is reported).

TABLE III

Summary statistics

	Median	Mean	Min	Max
Legal and market conditions				
Management fees (%)	2.5	2.320	0.8	5
Carried Interest (%)	20	18.32	6	21
Clawbacks	0	0.276	0	1
Cash distribution	1	0.707	0	1
Corruption Perception Index	7.5	7.008	2.4	9.7
Rule of law	8.98	8.568	2.73	10
Efficiency of the judiciary	9.25	8.748	4.75	10
Legality Index	20.41	19.167	8.51	21.91
Uncertainty Avoidance Index	53	57.675	8	94
Masculinity Index	64	50.154	14	70
Power Distance Index	40	53.024	22	104
GNP per capita	23168.4	21400.170	480.9	46543.7
MSCI Index	483.446	2673.854	−0.629713043	173293.1
Year of fund formation	2001	2000.919	1980	2008
Outbound offshore	0	0.163	0	1
Inbound offshore	0	0.073	0	1
Fund manager characteristics				
Proportion of MBA/CFA (%)	80	64.794	0	100
Proportion of legally trained manager (%)	3	8.572	0	100
Proportion of PhD (%)	5	12.751	0	100
Years relevant work experience	15	14.833	4	40
Fund characteristics				
Funds raised	70,900,000	144667817.7	263377.5	930,000,000
Bank institutional investors	0.1	0.179	0	1
Government investors	0.03125	0.102	0	1
Pension investors	0.1	0.178	0	1
Endowment investors	0	0.054	0	0.5
Limited partnership funds	1	0.585	0	1
Industry market/book	3.528	3.945	0.82	24.74
Early-stage investee focus	0	0.309	0	1

Eighteen percent of the funds in the data are outbound offshore funds, and 8% are inbound offshore funds. As indicated in Table I, an outbound offshore fund is one that obtains its capital from investors from a certain jurisdiction but fund investments are made primarily in assets other than in the jurisdiction of the fund and the fund investors. With reference to Canadian jurisdictional boundaries, a fund will be considered to be an outbound offshore fund if it obtains capital from Canadian investors, but it invests outside Canada. An inbound offshore fund is one that obtains its capital from investors from various jurisdictions but fund investments are made primarily in assets in a certain jurisdiction. With reference to Canadian jurisdictional boundaries, an inbound offshore fund will be a fund located offshore that invests primarily in assets within Canadayet obtains its capital from non-Canadian investors. As these distinctions appear to be important in practice for private investment fund management in an international setting, we control for these variables in our empirical analyses.

A majority of funds are managed by MBA graduates, and a typical fund manager has relevant work experience of about 15.5 years. Science and law graduates exist among some of the funds in the data,

and some fund managers had partial training (i.e., some non-degree courses) in law and/or sciences (and this partial training is reflected in our data by recording the proportionate number of years of training). We control for the specific training of the fund managers in our empirical tests.

Seventy two of 123 funds were set up as limited partnerships, and the remainder were set up as limited liability companies or trusts (see e.g., Cumming and Walz, 2010; Cumming et al., 2005 and accompanying text on limited partnerships versus other types of fund structures). Thirty one percent had a pure venture capital (early-stage) focus, and most had a significant exposure to high-tech industries (as reflected by the industry market/book ratio of the investee firms in which the fund had invested). The range across each of the different funds and countries for these and the other variables is detailed in Table II.

The summary statistics are presented in Table III. From the data, we can see that 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.

A correlation matrix is provided in Table IV. Consistent with Hypotheses 1 and 2, Table IV shows a strong negative correlation between less corruption (higher Corruption Perception Index) and fixed fees (−0.53) and higher performance fees (0.47). Also, Table IV shows 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 Hypothesis 3, Table IV shows clawbacks are associated with weaker legal conditions (−0.27) and greater power distance (0.32). Table IV also supports Hypotheses 4 and 5 as covenants mandating cash-only distributions are more likely in weaker legal conditions (−0.16), and for offshore funds (0.19). Finally, note that Table IV shows many variables are correlated, and as such, in our multivariate analyses below, we consider collinearity by presenting various specifications.

Econometric tests

We analyze four different dependent variables in this section: fixed fees (Table V), Carried interest performance fees (Table VI), clawbacks (Table VII) and cash-only distributions (Table VIII). The various right-hand-side explanatory variables were identified in "Data" section and defined in Table I. For each dependent variable we provide four alternative sets of regressions to show robustness (for a total of 16 different models, consecutively numbered across Tables V, VI, VII and VIII). The models do not reflect unusually high variance inflation factors to warrant concern regarding collinearity. Tables V and VI make use of standard OLS regression methods corrected for heteroskedasticity with White's estimator (1980). The dependent variable in Tables V and VI are bounded below by zero and above by one; we considered different methods of estimating fractions (Bierens, 2004), but did not find any material differences to the conclusions drawn. The dependent variables in Tables VII and VIII are binary variables; as such, we make use of simple logit regressions and again correct for heterockedasticity. We use logs where indicated to account for diminishing effects associated with larger values. The results are also robust to inclusion/exclusion of most of the countries in the data and potential outliers.[8] Other aspects of the data, including alternative definitions of variables and other variables not employed, are not explicitly presented for reasons of conciseness. The results are quite robust and alternative specifications are available upon request.

The regression results for fixed fees and performance fees are presented in Tables V and VI, respectively. In Tables V and VI, Models 1 and 5 show that legal conditions significantly (at the 1% level) negatively influence fixed fees and positively influence performance fees, respectively, consistent with Hypotheses 1 and 2. The economic significance is such that the model predicts that a move from India (Legality is 12.8; see Table II) to Canada (Legality 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, indicated in Table II, is 1.67% for fixed fees and 1.33% for performance fees). Models 2 and 6 show English legal origin countries have lower fixed

TABLE IV

Correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
(1) Management fees (%)	1.00																						
(2) Carried interest (%)	−0.28	1.00																					
(3) Clawbacks	0.25	−0.09	1.00																				
(4) Cash distributions	−0.05	−0.10	0.00	1.00																			
(5) Legality Index	−0.62	0.51	−0.27	−0.16	1.00																		
(6) Rule of law	−0.56	0.51	−0.26	−0.12	0.96	1.00																	
(7) Efficiency of the judiciary	−0.50	0.53	−0.20	−0.19	0.82	0.76	1.00																
(8) Corruption Perception Index	−0.53	0.47	−0.30	−0.16	0.92	0.87	0.83	1.00															
(9) Uncertainty Avoidance Index	0.02	0.13	0.01	0.12	0.00	0.13	−0.35	−0.09	1.00														
(10) Masculinity Index	0.20	−0.14	0.07	0.08	−0.30	−0.31	−0.21	−0.32	−0.22	1.00													
(11) Power Distance Index	0.34	−0.14	0.32	0.04	−0.67	−0.62	−0.53	−0.73	0.18	0.02	1.00												
(12) Log(GNP per capita)	−0.54	0.44	−0.28	0.05	0.86	0.89	0.56	0.76	0.24	−0.17	−0.62	1.00											
(13) Log(1 + MSCI Index Return)	0.12	0.02	0.02	0.55	−0.15	−0.09	−0.27	−0.17	0.35	0.05	0.11	0.16	1.00										
(14) Year of fund formation	0.03	−0.04	0.08	0.18	−0.14	−0.16	−0.04	−0.09	−0.13	0.08	−0.02	−0.04	0.22	1.00									
(15) Outbound offshore	−0.26	−0.12	−0.12	0.19	0.08	0.03	0.18	0.13	−0.23	−0.08	−0.12	−0.01	−0.27	0.06	1.00								
(16) Inbound offshore	0.03	0.05	0.04	0.18	−0.03	−0.07	0.00	−0.03	−0.15	0.11	−0.03	−0.07	−0.16	0.06	0.13	1.00							
(17) Proportion of MBA	−0.01	−0.09	−0.10	−0.17	−0.09	−0.13	0.07	−0.05	−0.35	0.09	−0.03	−0.23	−0.30	0.00	0.12	0.14	1.00						
(18) Proportion of PhD	0.08	−0.01	0.01	0.07	−0.10	−0.06	−0.14	−0.08	0.19	0.06	0.20	−0.01	0.15	−0.11	−0.02	0.08	−0.30	1.00					
(19) Legally trained managers	0.17	0.07	0.21	−0.01	−0.11	−0.07	−0.11	−0.12	0.13	−0.03	0.10	−0.09	0.14	0.10	−0.22	−0.14	−0.19	0.01	1.00				
(20) Work experience	0.06	−0.15	0.02	0.06	−0.05	0.01	−0.02	−0.04	−0.09	0.20	0.04	0.06	0.12	0.14	−0.09	0.03	−0.08	−0.02	−0.08	1.00			
(21) Log(Funds raised)	−0.18	0.01	−0.08	0.24	0.10	0.15	0.00	0.08	0.13	0.02	−0.10	0.23	0.26	0.05	0.11	−0.02	−0.10	0.00	−0.16	0.09	1.00		
(22) Limited partnership fund	−0.13	−0.03	−0.07	0.22	0.11	0.11	0.03	0.10	−0.08	0.11	−0.22	0.20	0.20	0.08	0.15	0.05	−0.08	0.06	−0.07	0.05	0.18	1.00	
(23) Log(Industry market/book)	−0.09	0.03	0.00	−0.07	0.07	0.04	0.12	0.10	−0.11	0.01	−0.12	−0.05	−0.18	−0.10	0.14	−0.07	0.00	−0.07	0.22	−0.17	−0.05	−0.06	1.00
(24) Early-stage fund focus	0.10	0.19	−0.02	0.16	0.00	0.02	−0.01	0.00	0.03	0.08	−0.06	0.04	0.20	0.07	0.04	−0.12	−0.13	0.05	0.15	−0.17	0.10	0.06	0.11

This table presents correlation across select variables that are defined in Table I. Correlations greater than 0.15, 0.18, and 0.23 in absolute value are significant at the 10, 5, and 1% levels, respectively.

TABLE V

Regression analyses of management fees

	Model 1		Model 2		Model 3		Model 4	
	Coefficient	*t*-Statistic	Coefficient	*t*-Statistic	Coefficient	*t*-Statistic	Coefficient	*t*-Statistic
Constant	22.000	0.90	6.685	8.16***	44.341	1.58	20.282	0.78
Legal conditions								
Legality Index	−0.139	−8.69***						
Efficiency of judiciary system					0.103	1.33		
Rule of law					−0.164	−2.22**		
Corruption			−0.239	−4.78***	−0.332	−5.60***	−0.351	−6.83***
English legal origin			−0.344	−1.56				
French legal origin			−0.109	−0.48				
German legal origin			0.300	1.08				
Scandinavian legal origin			0.428	1.39				
Tax difference					0.011	1.64	0.009	1.37
Hofstede cultural dimensions								
Power Distance Index					−0.010	−2.85***	−0.008	−2.35**
Masculinity					−0.007	−1.89*	−0.005	−1.41
Uncertainty Avoidance Index					0.007	1.87*	0.004	1.35
Market conditions								
Log(GNP per capita)			−0.136	−1.68*	0.048	0.58	−0.033	−0.48
Log(1 + MSCI Index Return)			0.014	0.87	0.028	0.91	0.024	0.75
Year of fund formation	−0.008	−0.67			−0.019	−1.38	−0.007	−0.56
Outbound-offshore fund	−0.381	−2.89***			−0.350	−2.54**	−0.338	−2.43**
Inbound-offshore fund	0.139	0.75			0.002	0.66	0.001	0.38
Fund manager characteristics								
Proportion of PhD			−4.550E−04	−0.23	8.18E−04	0.33	0.001	0.42
Proportion of legally trained fund managers			0.002	0.52	0.002	0.66	0.001	0.38
Proportion of MBA/CFA			−0.001	−0.60				
Work experience of principal fund managers			0.005	0.53	6.59E−03	0.65	0.001	0.15
Fund characteristics								
Log(Funds raised)	−0.047	−1.46	−0.042	−1.29	−0.039	−1.43	−0.045	−1.63
Banks institutional investors			−0.096	−0.48	−0.040	−0.19	−3.77E−02	−0.18
Government investors			0.502	1.87*	0.697	2.43**	0.760	2.63***

TABLE V
continued

	Model 1		Model 2		Model 3		Model 4	
	Coefficient	*t*-Statistic	Coefficient	*t*-Statistic	Coefficient	*t*-Statistic	Coefficient	*t*-Statistic
Pension investor					0.221	1.03	0.227	1.05
Endowment investor					0.627	1.08	0.558	0.95
Limited partnership funds	−0.022	−0.22			−1.39E−01	−1.37	−0.153	−1.5
Log(Industry market/book)			−0.155	−1.45	−0.034	−1.51	−0.028	−1.25
Early-stage investee focus	0.191	1.84★			0.169	1.62	0.161	1.53
Observations	123		123		123		123	
Adjusted R^2	0.426		0.509		0.485		0.470	

This table presents OLS regressions of the fixed management fee % for the private investment fund managers. The sample comprises 123 funds from 23 countries in Africa, Australasia, Europe, and North and South America. ★, ★★, ★★★Significant at the 10, 5, and 1% levels, respectively.

fees and higher performance fees, respectively, consistent with Hypothesis 1 since English legal origin countries offer superior flexibility and investor protection (La Porta et al., 1997, 1998). Similarly, Model 3 shows higher rule of law countries have lower fixed fees, while Model 7 shows higher efficiency of the judiciary countries have higher performance fees. Overall, the data provide very strong support for Hypothesis 1 regarding the effect of legality on fixed and performance fees.

Corruption is one of five components of the aggregated Legality Index (defined in Table I) used in Models 1 and 5 in Tables V and VI. It is worth considering whether corruption matters separately on its own, controlling for other things equal. Models 2–4 in Table V show that for all specifications, the corruption index is significantly negatively related to fixed fees. Table VI shows that corruption is significantly positively related to performance fees, but the significance of the effect depends on the specification (significantly only in Model 8 in Table VI). A move from India (corruption of 3.4) to Canada (corruption 8.63) gives rise to lower fixed fees by 1.84% and higher performance fees by 4.2% (based on the Models 4 and 8, respectively). Again, the data are strongly consistent with the predicted effect in Hypotheses 1 and 2. The effect of corruption on fees is graphically illustrated in Figure 1.

In addition to corruption and legal conditions, we assess at the same time whether culture affects fees. The data indicated in Models 3 and 4 are shown in Table V and Models 7 and 8 in Table VI that 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 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 Hypotheses 1 and 2 that corruption, culture, and legal settings all matter for the structure of fees. Moreover, although some of the control variables in Tables V and VI are 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

TABLE VI

Regression analyses of carried interest

	Model 5		Model 6		Model 7		Model 8	
	Coefficient	*t*-Statistic	Coefficient	*t*-Statistic	Coefficient	*t*-Statistic	Coefficient	*t*-Statistic
Constant	−36.31	−0.29	5.243	1.05	−102.156	−0.75	62.672	0.43
Legal conditions								
Legality Index	0.591	6.95***						
Efficiency of judiciary system					1.616	4.28***		
Rule of law					0.135	0.38		
Corruption			0.003	0.01	−0.115	−0.40	0.804	2.80***
English legal origin			2.536	1.90*				
French legal origin			1.389	0.99				
German legal origin			1.948	1.16				
Scandinavian legal origin			2.9	1.54				
Tax difference					−0.024	−0.75	−0.065	−1.85*
Hofstede cultural dimensions								
Power Distance Index					0.040	2.31**	0.052	2.72***
Masculinity					0.022	1.18	0.024	1.17
Uncertainty Avoidance Index					0.055	2.83***	−0.006	−0.35
Market conditions								
Log(GNP per capita)			1.564	3.17***	1.130	0.28	1.200	3.17***
Log(1 + MSCI Index Return)			−2.04E−03	−0.02	−3.010E−03	−2.00**	−3.31E−03	−1.89*
Year of fund formation	0.022	0.35			0.051	0.74	−0.027	−0.38
Outbound-offshore fund	−1.558	−2.28**			−1.604	−2.38**	−1.301	−1.67*
Inbound-offshore fund	−1.468	−1.53						
Fund manager characteristics								
Proportion of PhD			3.38E−03	0.23	−0.010	−0.84	−0.014	−0.97
Proportion of legally trained fund managers			2.81E−02	1.48	−0.003	−0.18	−0.007	−0.33
Proportion of MBA/CFA			−1.94E−03	−0.18				
Work experience of principal fund managers			−0.132	−2.20**	−0.083	−1.68*	−0.046	−0.83
Fund characteristics								
Log(Funds raised)	−0.068	−0.4	−0.129	−0.64	−0.126	−0.09	−0.077	−0.50
Banks institutional investors			1.639	1.36	−0.416	−0.41	−0.356	−0.30
Government investors			−0.241	−0.15	−0.721	−0.52	−0.813	−0.50

TABLE VI
continued

	Model 5		Model 6		Model 7		Model 8	
	Coefficient	*t*-Statistic	Coefficient	*t*-Statistic	Coefficient	*t*-Statistic	Coefficient	*t*-Statistic
Pension investor					−1.186	−1.13	−1.857	−1.53
Endowment investor					−0.308	−0.11	−0.752	−0.23
Limited partnership funds					0.284	0.57	−0.018	−0.03
Log(Industry market/book)	−0.543	−1.05	−0.149	−0.23	−0.005	−0.05	0.071	0.56
Early-stage investee focus	1.551	2.87***			1.099	2.16**	1.064	1.81*
Observations	123		123		123		123	
Adjusted R^2	0.305		0.184		0.449		0.258	

This table presents OLS regressions of the carried interest performance fee % for the private investment fund managers. The sample comprises 123 funds from 23 countries in Africa, Australasia, Europe, and North and South America. *, **, ***Significant at the 10, 5, and 1% levels, respectively.

investor and fund manager characteristics, their education and experience, as well as fund factors such as stage and industry focuses, among other control variables.

Some of the control variables are significant in Tables V and VI in ways that are expected (as described in "Control variables for analyzing…"). Government investors have higher fixed fees (Table V), 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.

As in Tables V and VI, Model 9 in Table VII indicates that the legal environment is the most statistically and economically significant determinant of clawbacks among private investment funds across countries, strongly supporting Hypothesis 3 ("The role of corruption, culture …" section). In terms of the economic significance, a reduction in the quality of legal conditions by 1 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.

We 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 (Tables V, VI). However, with regard 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 (Table VII). 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 we break out corruption from other components of the Legality Index, we discover that corruption is significant in Model 10. However, the statistical significance of corruption goes away when cultural variables are added to the regressions. Models 11 and 12 show that Power Distance is the most statistically and economically

TABLE VII

Regression analyses of clawbacks against fund managers

	Model 9 Marginal effect	Model 10 Marginal effect	Model 11 Marginal effect	Model 12 Marginal effect
Legal conditions				
Legality Index	−0.034***			
Efficiency of judiciary system			−0.168	
Rule of law			−0.027	
Corruption		−0.056**	0.201	0.105
English legal origin		0.064		
Tax difference			−0.020	−0.015
Hofstede cultural dimensions				
Power Distance Index			0.043**	0.041**
Masculinity			0.025	0.025
Uncertainty Avoidance Index			−2.192E−03	0.005
Market conditions				
Log(GNP per capita)			1.35E−02	−2.08E−02
Log(1 + MSCI Index Return)		−0.001*	−0.002	−0.002
Year of fund formation	0.007		0.048	0.060
Offshore fund (inbound or outbound)	−0.022	−0.035	−0.984	−1.010
Fund manager characteristics				
Proportion of Ph.D.		−0.001	−0.008	−0.007
Proportion of legally trained fund managers		0.004	0.017	0.018
Proportion of MBA/CFA		−0.002		
Work experience of principal fund managers		−0.001	0.009	0.007
Fund characteristics				
Log(Funds raised)	−0.015	0.001	−0.049	0.080
Banks institutional investors		−0.108	−0.910	−0.932
Government investors		0.424	2.472*	2.500*
Pension investor			−0.588	−0.474
Endowment investor			2.255	2.241
Limited partnership funds	−0.032		0.119	0.172
Log(Industry market/book)		−0.053	0.025	0.030
Early-stage investee focus	−0.015		−0.070	−0.053
Observations	123	123	123	123
Pseudo R^2	0.265	0.312	0.183	0.180

This table presents logit regressions of the probability that a fund has a clawback against the private investment fund manager (and without clawbacks against any of the fund investors). We report the marginal effects, not the standard logit coefficients, to highlight economic significance (and hence do not report the constant even through the model includes a constant, and do not report *t*-statistics but highlight statistically significant coefficients). The sample comprises 123 funds from 23 countries in Africa, Australasia, Europe, and North and South America. *, **, ***Significant at the 10, 5 and 1% levels, respectively.

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, Models 11 and 12 indicate that government investors are more likely to have clawbacks, but this effect is significant only at the 10% level of significance.

Table VIII analyses the relation between legality and payment terms to a fund's institutional investors

TABLE VIII

Regression analyses of cash versus share distributions

	Model 13 Marginal effect	Model 14 Marginal effect	Model 15 Marginal effect	Model 16 Marginal effect
Legal conditions				
Log(Legality Index)	−0.038**			
Efficiency of judiciary system			0.103	
Rule of law			−0.164**	
Corruption		−0.095**	−0.332***	−0.351***
English legal origin		−0.100		
Tax difference			0.011	0.009
Hofstede cultural dimensions				
Power Distance Index			−0.010***	−0.008**
Masculinity			−0.007*	−0.005
Uncertainty Avoidance Index			0.007*	0.004
Market conditions				
Log(GNP per capita)			0.048	−0.033
Log(1 + MSCI Index Return)		0.087***	0.028	0.024
Year of fund formation	0.014		−0.019	−0.007
Offshore fund (offshore or outbound)	0.207***	0.298***	0.350**	0.338**
Fund manager characteristics				
Proportion of Ph.D.		−0.003	0.001	0.001
Proportion of legally trained fund managers		−0.003	0.002	0.001
Proportion of MBA/CFA		−0.001		
Work experience of principal fund managers		−0.002	0.007	0.001
Fund characteristics				
Log(Funds raised)	0.054**	−0.014	−0.039	−0.045
Banks institutional investors		−0.034	−0.040	−0.038
Government investors		−0.153	0.697**	0.760***
Pension investor			0.221	0.227
Endowment investor			0.627	0.558
Limited partnership funds	0.18475**		−0.139	−0.153
Log(Industry market/book)		−0.030	−0.034	−0.028
Early-stage investee focus	0.145*		0.169	0.161
Observations	123	123	123	123
Pseudo R^2	0.381	0.496	0.485	0.470

This table presents logit regressions of the probability that a fund mandates cash distributions to institutional investors, such that the fund manager does not have the opportunity to distribute shares. We report the marginal effects, not the standard logit coefficients, to highlight economic significance (and hence do not report the constant even though the model includes a constant, and do not report *t*-statistics but highlight statistically significant coefficients). The sample comprises 123 funds from 23 countries in Africa, Australasia, Europe, and North and South America. *, **, ***Significant at the 10, 5 and 1% levels, respectively.

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 in Model 13, consistent with Hypothesis 4. 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 (Models 14–16). Corruption is significant at the 5% level in Model 14 and at the 1% level in Models 15

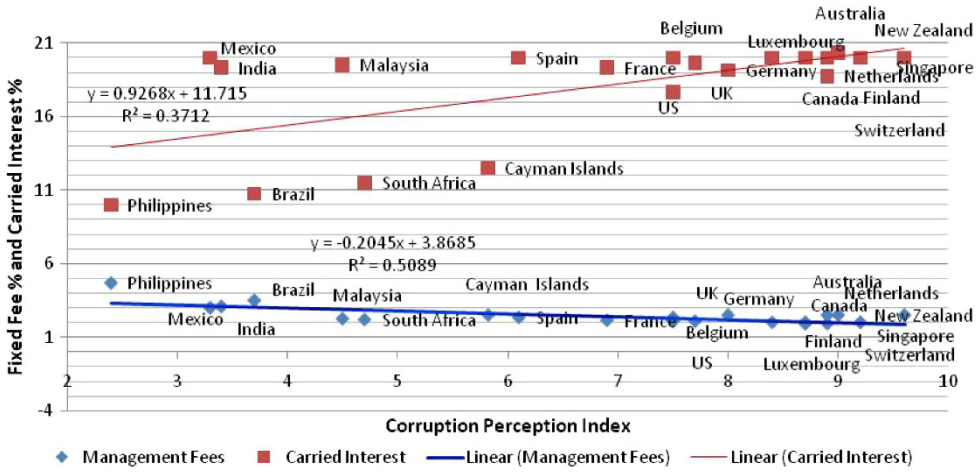

Figure 1. Corruption, fixed fees and carried interest.

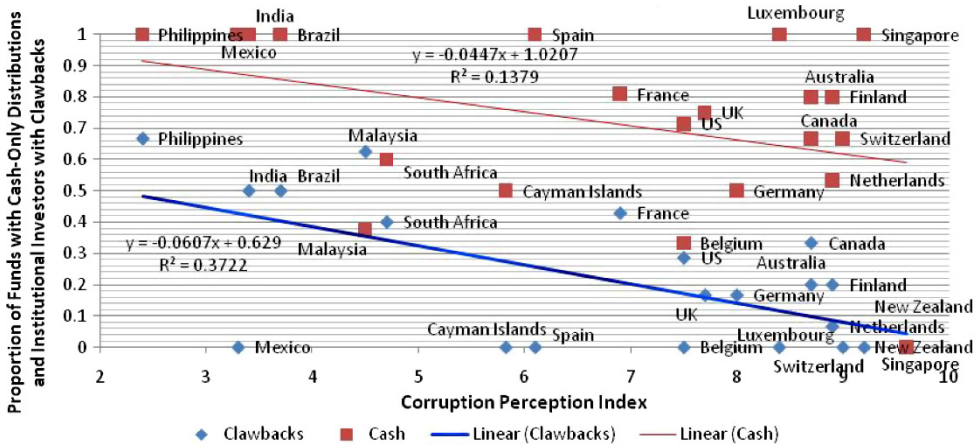

Figure 2. Corruption, cash, and clawbacks.

and 16. The strong effect of corruption on cash distributions and clawbacks is graphically illustrated in Figure 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 Models 15 and 16 (significant at the 1% level in Model 15 and the 5% level in Model 16). 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 (Hypothesis 5). 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 in "The role of corruption, culture …" section.

Finally, the data indicated in Table VIII illustrate 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 (Table VII). 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.

Conclusion

There has been a growing concern over the fee structures since the financial crisis. International law firms such as S. J. Berwin have been highlighting the role of corruption and law in setting fees and governance in the private equity industry[9]: "Private 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."

Based on a sample of 123 venture capital and private equity funds around the world, we find 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 us align the interests of managers and shareholders. We extend our empirical analyses to ascertain what specific legal conditions matter across countries. 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 that affect the payment conditions of fund managers and institutional investors across countries have 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 (see also study by Cumming et al. (2011), and Gainet (2011), both in this special issue).

Notes

[1] http://www.economist.com/research/articlesBySubject/displayStory.cfm?story_ID=13235025&subjectid=987105.

[2] http://seekingalpha.com/article/78111-royal-bank-of-scotland-ceo-deathwatch.

[3] http://en.wikipedia.org/wiki/American_International_Group.

[4] http://www.swissinfo.ch/eng/business/Credit_Suisse_avoids_shareholder_bonus_revolt.html?cid=8785404.

[5] http://www.sjberwin.com/latestpublicationdetails.aspx?title=privateequitycomment.

[6] These different cultural dimensions are formally defined in "Data" section.

[7] See http://vcexperts.com/vce/library/encyclopedia/glossary_view.asp?glossary_id=188 for a formal definition of clawbacks: "A clawback obligation represents the general partner's promise that, over the life of the fund, the managers will not receive a greater share of the fund's distributions than they bargained for. Generally, this means that the general partner may not keep distributions representing more than a specified percentage (e.g., 20%) of the fund's cumulative profits, if any. When triggered, the clawback will require that the general partner return to the fund's limited partners an amount equal to what is determined to be "excess" distributions."

[8] One exception to the robustness of results to exclusion of countries is that where the number of observations is significantly reduced by excluding countries, some of the results reported are not robust. Excluding countries with just one fund did not affect the primary results reported.

[9] *Supra* note 5.

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Legal Protection, Corruption and Private Equity Returns in Asia

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Mai Takeuchi

ABSTRACT. This article examines how private equity returns in Asia are related to levels of legal protection and corruption. We utilize a unique data set comprising over 750 returns to private equity transactions across 20 developing and developed countries in Asia. The data indicate that legal protections are an important determinant of private equity returns in Asia, 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. We also find that private equity managers, irrespective of the quality of legal system they are operating within, can mitigate the potential impact of corruption. 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. Our findings are robust to inclusion of controls for Hofstede cultural variables, economic conditions, and transaction specific characteristics, as well as consideration of econometric sample selection methods for unexited investments.

KEY WORDS: corruption, law and finance, buyouts, returns

Introduction

Institutional capital flows into Asian private equity have increased substantially over the last 10 years. Strong economic growth in Asian economies has encouraged many investors to allocate capital to the region, on the belief that Asian private equity returns will be the same, if not higher, than returns available in developed markets such as the United States or Western Europe (Fleming, 2004). However, Asian private equity markets are, at many levels, still in their infancy and investors are faced with making investment decisions where there is a diverse set of opportunities across financial market structures, legal and political systems, and business culture and language. While the internationalization of leveraged buyout (LBO) activity has resulted in the transmission of investment practices and financial technology to new markets in Asia, there is as yet little evidence that private equity can be successfully executed over the long term in countries where legal protection is less clear, corruption is more commonplace, and the economic rents from private equity can be expropriated by the state.

This article provides the first quantitative analysis of the relationship between legal protection, corruption, and private equity returns in Asia. Our work is related to a growing body of work consistent with the view that legal protections are important in explaining the size, structure, and success of private equity markets, albeit with some differences in findings depending on datasets examined (Cao and Lerner, 2009; Cumming et al., 2006; Cressy et al., 2007; Johan, 2011; Lerner and Schoar, 2005).[1] However, none of this research considers the interplay between corruption across markets and the financial returns to private equity investments. On one hand, we may conjecture that countries with worse 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 organization change in their investees are able to make companies more efficient

and mitigate the economic costs of corruption, thereby facilitating higher returns. We provide a direct test of these competing hypotheses, made possible with an international sample of Asian private equity investments spanning 21 years (1989–2009) and 20 countries.

Our empirical analysis begins with the first comprehensive description of the financial returns to Asian LBOs and growth investments by geography and type of exit. We compare and contrast the key features of these returns to those available in the United States and European markets. We then present evidence on governance and operational change in Asian private equity transactions. Finally, we explicitly test our hypotheses on corruption, legal protection and private equity returns. Our results show that legal protections are an important determinant of private equity returns in Asia, 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. We also find that private equity managers, irrespective of the quality of legal system they are operating within, can mitigate the potential impact of corruption. We find 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, we consider econometric sample selection methods for unexited investments.

Our analysis contributes to the growing literature on ethics, corruption, private equity, and leverage buyouts. While there have been comparatively few papers on this topic, there are related studies examining institutional investment in socially responsible private equity funds (Cumming and Johan, 2007), as well as the ethics of private equity fund relationships with investee firms (Filatochev et al., 1994; Houston and Howe, 1997; Jones and Hunt, 1991; Schadler and Kahns, 1990). Prior work has not, however, considered the role of private equity funds in alleviating corruption and how these actions impact on financial returns. Our paper also adds to the international comparative literature on private equity (see Cumming et al., 2006, 2007; Kaplan and Stromberg, 2009; Wright, 2007b; Wright et al., 2003, 2005).

The article is organized as follows. The first section develops testable hypotheses. The second and third sections describe the institutional context for Asian private equity and our dataset. Multivariate empirical tests follow the presentation of the data and summary statistics. The last section provides a discussion of future research and concluding remarks.

Testable hypotheses

In this article, we focus on two central hypotheses relating to how private equity returns are potentially influenced by the level of legal protections in an economy and levels of corruption. We also identify control factors which have been shown to impact private equity returns (and which are important to consider in empirical tests).

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., 1998b), countries with better legal environments enable private equity funds to more efficiently provide advice and effect organization change to bring about higher returns in their investee firms. This is the basis of our first hypothesis.

The law and finance factors (based on La Porta et al., 1998a, b) 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 buyout 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., 1998a, b). Private equity funds see 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.

Hypothesis 1: Buyout 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, 2009). 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, 2008; 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.

Hypothesis 2: Buyout 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. Private equity funds are limited partnerships that last for 10–13 years. Investments often take anywhere from 2–7 years to come to fruition for sale in an IPO, acquisition, 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. These econometric methods and control variables used in our empirical analyses of our testable hypotheses are described in detail below after we explain the institutional context in which the data are derived and provide summary statistics from the dataset.

Institutional context: the Asian buyout market

Our study draws upon data from Asian private equity transactions over the last 20 years, covering a period of rapid change in the nature and structure of the market. Therefore, it is important to chart broad changes in Asian private equity as background to our empirical tests. The development of the Asian LBO market can be charted from the mid-to-late 1990s when private equity firms successfully raised dedicated pools of capital to attempt control-oriented investments in private companies in the region. Prior to this, the first wave of buyouts in the US (and then Europe) did not spill over to the Asian region to any great degree (Kaplan, 1997; Kaplan and Stromberg, 2009). Demand for private capital in Asian markets was motivated by first generation entrepreneurs seeking venture or growth capital, with a strong preference from the founders to maintain equity (and operational) control over their companies. Private equity in Asia in the late 1980s and early 1990s was predominantly the provision of growth financing to small and mid-sized companies which were the engine of economic development in newly industrialized countries (e.g. South East Asia) (Naqi and Hettihewa, 2007). In more developed economies, private equity played a niche role filling financing gaps in formal capital markets (e.g. financing small companies in Australia; see Ferris, 2001).

The first wave of private equity fund raising for Asian LBOs took place between 1998 and 2001, and was associated with a coincidence of regional buyout funds (and specialist local teams) being established by leading US and European LBO firms (e.g., The Carlyle Group; Texas Pacific Group (TPG)); several larger Asian economies offering corporate restructuring investment opportunities following the Asian currency crisis (specifically, South Korea, Japan); and institutional investor appetite for alternative asset exposure in the Asian region, which increased the growth rate of new fund management firms offering investment services in private equity.

Figure 1 presents capital commitments to Asian private equity funds between 1992 and 2009. The increase in capital under management in the region between 1998 and 2001 is noticeable, with capital raised during this period almost 2.0 times greater than the pre-1998 period.

The global LBO boom between 2004 and 2008 was the impetus for the second phase of development of the Asian LBO market. As Kaplan and Stromberg (2009) have documented, the growth in the LBO market at this time was magnified by the availability of debt (in particular, growth in size of the securitization market), the emergence of

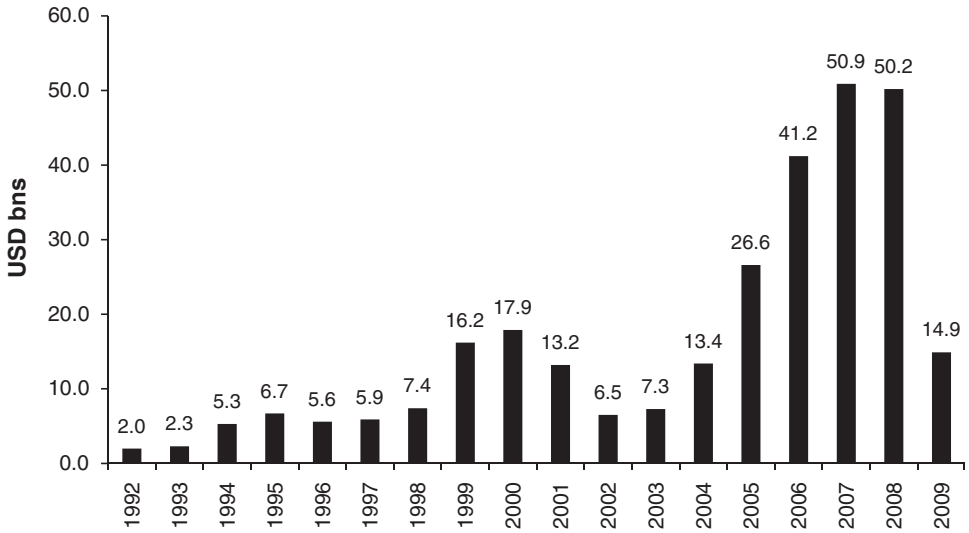

Figure 1. Asian private equity capital commitments 1992–2009. This figure presents capital committed to Asian private equity funds, by vintage year. All values are current 2009 United States dollars (billions). *Source*: Asian Venture Capital Journal (various years).

secondary buyouts and an increase in the number of public-to-private transactions. In addition, LBOs in ''less traditional'' industries such as ''non-manufacturing continued to grow in relative importance, and private equity spread to new parts of the world, particularly Asia'' (2009, p. 128). Capital committed to Asian private equity increased over threefold between 1998–2001 and 2004–2008.

The institutional development of the Asian LBO market between 1998 and 2008 was concentrated on the developed economies of Japan, Australia, and (in the first phase) South Korea. As historical comparative studies have shown, it was these economies which attracted the earliest attention from investors in terms of capital flows (see Wright, 2007a on LBOs; Jeng and Wells, 2000; Mayer et al., 2005 on venture capital). Japanese economic performance during the 1990s and the pressure for corporate restructuring resulted in the emergence of a small LBO industry (see Wright and Kitamura, 2003; Wright et al., 2003, 2005). While commentators believe that the Japanese market did not reach its potential, attitudes toward LBOs and private equity as a form of governance changed in the late 1990s and 2000s. In particular, LBOs became more accepted as a form of ownership due to global competitive pressures on Japanese corporations, shareholder demands for higher equity returns, excessive debt burdens of conglomerates, divestment of inefficient subsidiaries, and a change in attitude toward mergers and acquisitions (M&A) given the breakdown of the implicit contract of lifetime employment (Wright, 2007a, pp. 284–292; Wright et al., 2003).

The Australian LBO market grew for different reasons. A small, open developed economy with established finance markets provided a conducive environment for the growth of LBO transactions. Koh (2005), Wright and Bruining (2008), and Kaplan and Stromberg (2009) identified the Australian market as benefiting most from the increased internationalization of the LBO industry during the mid-2000s. Transaction technology developed in the US or Europe could more easily be transferred to the Australian market, where institutional structure (laws, language and culture values) and availability of debt financing was more in tune with developed LBO markets. Martin (1999) and Ferris (2001) document the growth of the Australian market from the earliest LBOs in the mid-1980s to the increasing role of government in supporting the Australian market through policy initiatives and a robust pension system. As Cumming (2007) noted, the Australian market also increased in professionalization and scale due, in large part, to government policies facilitating investment in private companies.

The second phase of development also saw the re-emergence of growth capital as an important part of the Asian private equity landscape (Naqi and Hettihewa, 2007). These investments were primarily located in China and India, where rapid macroeconomic growth, demographic change, and legal and financial reforms were providing opportunities for entrepreneurs to create new businesses and markets, or expand existing companies.[3] Fang and Leeds (2008a, b and associated cases) illustrate that growth transactions involved substantial minority equity positions and the use of ''negative control'' clauses in shareholders agreements (including meaningful board participation, veto on key decisions, right to hire senior executives and so forth).[4] Lerner et al. (2008) observe that companies in these countries do not require leverage (as in more traditional LBO markets) as much as strategic advice and operational support from growth capital investors.

The Chinese and Indian private equity markets combined grew between 2004 and 2008 to provide 60% of investments (by number), with a corresponding increase in investment value (as measured by invested capital) (49%). In absolute terms, Chinese investments increased from 61 transactions in 2004 to 303 transactions in 2008, a fivefold increase (similarly, Indian investments increased from 45 transactions in 2004 to 262 transactions in 2008, a sixfold increase). By comparison, the total number of Asian transactions increased three-fold during the period (311 transactions to 939 transactions), with more developed markets such as Japan and Australia growing less rapidly (by 200 and 127% respectively).[5]

Where do we stand today? Asian private equity has continued to experience strong capital inflows, especially into the growth economies of China and India. This inflow of capital into Asia has led to renewed questions about whether private equity can be executed within different legal and economic structures. As we have seen, the early development

of the market was located in developed economies in the region, which possess larger debt and equity markets, certainty over creditor rights, tax transparency and an acceptance of change in control. This is consistent with the law and economics view (and our first hypothesis) which highlights the importance of legal institutions in the development of finance markets and economic growth (Cao et. al. 2010; La Porta et al., 1998b, 2002). By contrast, the recent development of private equity in the growth equity markets of China and India supports the notion that private equity investors have the ability to mitigate impediments in the institutional environment, including the potential for corruption (our second hypothesis). Clearly, an empirical examination of the relationship between legal protection, corruption and private equity returns across the Asian region is warranted to improve our understanding of the market and its operation. We turn next to the data used in our study, and summary statistics.

Data and summary statistics

The data in this article are derived from proprietary information obtained by a leading international fund-of-funds manager, from a population of private equity managers operating in Asia. 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), 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 UK (3), and the US (8). The main variables available in the dataset are defined in Table I and summarized in Table II. Although information is not available for each variable for each investment, coverage is quite complete.

Financial returns statistics

Table III reports return on investment (ROI) and internal rate of return (IRR) for fully realized Asian LBOs and control-oriented investments 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 this study).[6] Consistent with US and European studies, Asian LBOs 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.

Trade sales to strategic buyers are the most common form of exit for Asian LBOs, consistent with larger US and European data sets reviewed by Kaplan and Stromberg (2009, p. 129). Trade sales make up 50% of all exits, with IPO (18%) being the second most common exit strategy. Secondary sales (5%) are relatively less common than that observed in US and European data. Kaplan and Stromberg report 24% of all exits were due to secondary buyouts between 1970 and 2007, although there was large variation across time. The lower incidence of secondary buyouts in Asia is most likely due to the less developed nature of private equity markets and the fewer number of managers operating in the region. Write-offs comprised 17% of all exits, higher than in more developed countries due to the inclusion of growth LBOs and control-oriented minority investments.

Asian LBOs which were exited via IPOs provided the highest returns to investors, generating a median IRR of 61% per annum (and median ROI of 3.2 times cost). Secondary sales (although only 5% of total exits) also performed well, followed by the sale of private investments in public entities (PIPEs) back into the market, trade sales and management buybacks.

TABLE I

Variable definitions

	Definition
Returns	
IRR	The internal rate of return of the investment, in decimals
Realized exit	A dummy variable equal to 1 for a fully realized investment
Cultural and legal factors	
Corruption perception index	The corruption perception index from transparency international. Ranges from 0 to 10. Higher numbers indicate less corrupt countries
Power distance index	The Hofstede power distance index. Ranges from 0 to 100. Higher numbers indicate higher power distance. The index measures how much the less powerful members of institutions and organizations expect and accept that power is distributed unequally. In cultures with small power distance (e.g., Australia, Austria, Denmark, Ireland, New Zealand), people expect and accept power relations that are more consultative or democratic. People relate to one another more as equals regardless of formal positions. Subordinates are more comfortable with and demand the right to contribute to and critique the decisions of those in power. In cultures with large power distance (e.g., Malaysia), the less powerful accept power relations that are autocratic or paternalistic. Subordinates acknowledge the power of others based on their formal, hierarchical positions. Thus, small vs. large power distance does not measure or attempt to measure a culture's objective, ''real'' power distribution, but rather the way people perceive power differences
Masculinity index	The Hofstede masculinity index. Ranges from 0 to 100. Higher numbers indicate higher Masculinity. The value placed on traditionally male or female values (as understood in most Western cultures). In so-called 'masculine' cultures, people (whether male or female) value competitiveness, assertiveness, ambition, and the accumulation of wealth and material possessions. In so-called 'feminine' cultures, people (again whether male or female) value relationships and quality of life. This dimension is often renamed by users of Hofstede's work, e.g., to Quantity of Life vs. Quality of Life. Another reading of the same dimension holds that in 'M' cultures, the differences between gender roles are more dramatic and less fluid than in 'F' cultures; but this strongly depends on other dimensions as well
Uncertainty avoidance index	The Hofstede uncertainty avoidance index. Ranges from 0 to 100. Higher numbers indicate higher uncertainty avoidance. How much members of a society are anxious about the unknown, and as a consequence, attempt to cope with anxiety by minimizing uncertainty. In cultures with strong uncertainty avoidance, people prefer explicit rules (e.g., about religion and food) and formally structured activities, and employees tend to remain longer with their present employer. In cultures with weak uncertainty avoidance, people prefer implicit or flexible rules or guidelines and informal activities. Employees tend to change employers more frequently
Legality	The weighted average of the La Porta et al. (1998b) legal variables. Weights used are as in Berkowitz et al. (2003). The index includes the Rule of Law, Efficiency of the Judiciary, Contract Repudiation, and Expropriation, but does not include corruption (it is assessed separately herein). Higher numbers indicate better legal systems. Values range from 8.73 to 19.44 in the data
Economic conditions	
GDP per capita	The country's GDP per capita in constant 2009 USD
MSCI return (%)	The annualized return over the contemporaneous MSCI investment period from investment date to exit date

TABLE I
continued

	Definition
Transaction specific characteristics	
Post investment acquisitions	A dummy variable equal to 1 for investments which involved subsequent acquisitions by the investee firm
Post investment divestitures	A dummy variable equal to 1 for investments which involved subsequent divestitures of the investee firm
Syndication	A dummy variable equal to 1 for syndicated investments
Enterprise value at investment	The pre-money valuation of the investment in $m USD
Cost of investment ($m USD)	The amount invested by the PE fund in $m USD
Equity share of PE Fund Managers	The equity share (in decimals) held by all of the PE fund investors
Managerial replacement	A dummy variable equal to 1 if the PE investor(s) replaced the management (CEO, CFO, COO) of the investee
GP office in country of company	A dummy variable equal to 1 if the PE investor(s) had an office in the same country as the investee
Multinational division	A dummy variable equal to 1 if the PE fund bought the investment from a multinational division
Domestic conglomerate division	A dummy variable equal to 1 if the PE fund bought the investment from a domestic conglomerate division
Founder	A dummy variable equal to 1 if the PE fund bought the investment from a founder
Sponsor to Sponsor	A dummy variable equal to 1 if the PE fund bought the investment from a sponsor
Receiver	A dummy variable equal to 1 if the PE fund bought the investment from a receiver
Public to private	A dummy variable equal to 1 if the PE fund bought the investment from a public-to-private transaction
Government	A dummy variable equal to 1 if the PE fund bought the investment from a government office
PIPE	A dummy variable equal to 1 if the PE fund bought the investment from a PIPE deal
Industry dummy variables	Dummy variables equal to 1 for a dozen different industry categories

This table defines the variables used in the dataset. The data comprise 756 observations from 20 countries. Dollar amounts are all expressed in constant 2009 USD. Sources: Wilshire Private Markets, MSCI http://www.mscibarra.com/, http://www.geerthofstede.nl/, La Porta et al. (1998b), Berkowitz et al. (2003), Transparency International http://www.transparency.org/.

The higher returns to IPOs is consistent with US and European studies which show that private equity investors aim to list only their best investments. Cumming and MacIntosh (2003) argue that the probability of an IPO exit is positively associated with the quality of the investment. Firm quality is evident in the low levels of information asymmetry between buyers and sellers in the IPO process (the need for earnings history, public company accounting and governance standards, and so forth), stable, established management team and significant growth potential. The priority of IPO returns is also supported by a reputation argument, first applied to venture capital. Private equity firms (like their venture counterparts) wish to generate a reputation for presenting high quality firms to public markets (Barry et al., 1990; Megginson and Weis, 1991). We find that financial returns to Asian LBOs are consistent with the asymmetric information and reputation arguments.

Governance and operation change statistics

Governance changes and operational engineering associated with private equity ownership has not been studied to any great degree in Asian companies. Until

TABLE II

Summary statistics

	No of observations	Mean	Median	SD	Min	Max
Returns						
IRR	273	0.496	0.31	1.275	−1	8.3146
Realized exit	756	0.394	0	0.489	0	1
Cultural and legal factors						
Corruption perception index	756	6.247	7.3	2.519	2.2	9.6
Power distance index	756	57.763	58	19.592	22	104
Masculinity index	756	62.221	61	13.773	34	95
Uncertainty avoidance index	756	50.504	51	20.698	8	92
Legality	756	18.266	19.53	3.158	8.51	21.55
Economic conditions						
GDP per capita	756	16,126	17,500	9212	300	31,490
MSCI return (%)	756	0.052	0.002	0.454	−0.877	8.825
Transaction specific characteristics						
Post investment acquisitions	758	0.047	0	0.213	0	1
Post investment divestitures	756	0.265	0	0.560	0	10
Syndication	756	0.265	0	0.560	0	10
Enterprise value at investment	258	394.671	67.7	1589.337	0	15,300
Cost of investment ($m USD)	749	33.049	13.395	63.929	0.003	770
Equity share of PE fund managers	528	0.493	0	0.312	0.0001	1
Managerial replacement	756	0.193	0	0.395	0	1
GP office in country of company	756	0.919	1	0.273	0	1
Multinational division	756	0.049	0	0.216	0	1
Domestic conglomerate division	756	0.142	0	0.349	0	1
Founder	756	0.454	0	0.498	0	1
Sponsor to sponsor	756	0.029	0	0.168	0	1
Receiver	756	0.013	0	0.114	0	1
Public to private	756	0.082	0	0.275	0	1
Government	756	0.020	0	0.140	0	1
PIPE	756	0.009	0	0.096	0	1

This table reports number of observations, as well as the mean, median, standard deviation, minimum and maximum values of each variable in the data. Variables are as defined in Table 1.

recently, researchers have not possessed firm-level data on Asian companies other than that available through individual case studies (see Fang and Leeds, 2008a, b). The international literature shows that active private equity ownership improves managerial behavior and accountability (Acharya et al., 2009; Kaplan and Stromberg, 2009, p. 131). Private equity owners are also more active in operational engineering – initiating operational and strategic change such as value creation plans, acquisitions, divestitures, strategic repositioning, new product development, and so forth (Acharya et al., 2009; Bernstein et al., 2009; Nikoskelainen and Wright, 2007).

The equity ownership of Asian private equity-backed companies is reported in Table IV for a sample of 528 companies for which we have definitive information. The Table differentiates between countries in which private equity ownership, on average, tends to be majority equity positions (LBO-centric economies), and countries where private equity funds have, on average, minority equity ownership (growth-centric economies). We also show the extent to which minority equity ownership has control features (that is, the private equity fund holds at least 20% equity and is able to exert influence, and block,

TABLE III

Realized returns and exit statistics

	N	%	ROI		N	%	IRR	
			Average	Median			Average (%)	Median %
Country								
Australia	136	47	2.72	2.10	136	50	46	37
China	28	10	11.98	1.76	27	10	87	33
Hong Kong	12	4	0.52	0.06	10	4	−52	−83
India	30	10	3.71	3.00	20	7	133	76
Japan	24	8	3.86	2.01	24	9	89	55
New Zealand	22	8	2.40	2.72	21	8	18	24
Singapore	8	3	4.70	4.04	8	3	78	66
South Korea	3	1	1.46	1.04	3	1	30	1
Taiwan	2	1	2.62	2.62	2	1	34	34
Thailand	7	2	2.66	1.91	7	3	6	13
Other	17	6	1.07	0.23	15	5	−38	−47
Total	289				273			
Type of exit								
IPO	43	18	5.60	3.18	43	18	142	61
Mgmt buyback	10	4	1.59	1.65	10	4	12	20
PIPE	16	7	3.17	2.85	14	6	122	101
Secondary sale	12	5	3.43	3.32	11	5	41	37
Trade sale	117	49	2.81	2.17	117	50	50	33
Write-off	41	17	0.09	0.00	41	17	−75	−100
Total	239				236			

This table reports return on investment (ROI) and internal rate of return (IRR) for fully realized Asian LBOs and growth capital investments by country and by type of exit. Country is defined as the primary location of the LBO company. ROI is defined as the multiple of total return to cost. IRR is the internal rate of return for the investment, using the cash flows of the private equity investor, as reported by the investor. In cases where the IRR was not provided, we have calculated the IRR using the holding period (month and year of entry and exit), the cost and total return. PIPE is defined as a private equity investment in a public company.

decisions which may be against minority equity holders' interests).[7]

Australia and Japan are the two largest developed economy LBO markets in the Asian region, and transactions in those markets are characterized by control equity positions. The average equity ownership of majority equity transactions in the LBO-centric economies is between 77 and 91%, with the remainder held by the management team (and in some cases the original seller). Growth transactions in these markets are also more likely to be substantial minority positions and have blocking stakes in the company. With the exception of Hong Kong, most minority equity deals have blocking stakes and can be regarded as control oriented. Asian LBOs, therefore, feature many of the characteristics of LBO transactions in the US and Europe. Sponsors hold the majority of equity and management have equity interest via shares and/or options. In minority deals, control is provided by blocking stakes and the use of negative control features such as veto rights on key decisions, multiple board seats etc. The similarities suggest that LBO structuring technology can be transmitted across different business cultures and legal jurisdictions.

Private equity ownership in the growth-centric economies of China and India is usually minority equity (87% of Chinese private equity deals; 71% of Indian deals). Furthermore, the equity positions are, on average, below 30% and very often do not involve blocking states. This is consistent with the evidence we have reviewed previously in this paper,

TABLE IV

Governance statistics

Equity ownership	*N*	Equity holding		% Deals with majority equity	Average equity ownership (%)	% Deals with minority equity	Average equity ownership (%)	% of Minority deals with "Blocking" stake
		Average (%)	Median (%)					
Australia	147	65	70	69	79	31	37	91
Hong Kong	13	50	60	54	79	46	18	33
Japan	80	64	71	70	82	30	23	50
New Zealand	11	74	91	73	91	27	31	67
Singapore	14	59	66	71	77	29	16	50
Thailand	14	58	69	57	85	43	23	50
China	133	28	27	13	66	87	23	58
India	49	32	27	29	67	71	18	43
South Korea	33	37	32	30	73	70	23	43
Taiwan	10	27	18	20	85	80	13	25
Other	24	48	49	50	79	50	17	42
Total	528							

This table reports equity ownership by LBO and growth capital funds in Asian companies. Equity ownership is measured as the percentage of equity held by the private equity owner (or in club deals the total equity held by all private equity investors). Minority equity is defined as equity positions of 49% or less. Minority "Blocking Stakes" is defined as equity ownership between 20 and 49%.

where the demand for private equity in growth-centric economies is from founder entrepreneurs who are not seeking to exit their companies to a private equity buyer. Taiwan and South Korea are also growth-centric markets where private equity has played an important role in financing the growth and development of small and medium sized enterprises. Equity ownership in Taiwan and South Korea is between 27–37%, on average, with median equity holdings in Taiwan substantially smaller than other markets. It is also less likely that minority private equity in Taiwan has a blocking stake.

Overall, the Asian private equity market presents two types of control-oriented private equity: "traditional" LBO transactions, and growth control-oriented transactions. Transaction structures are similar across traditional Asian LBOs and take their lead from the US and Europe. However, in growth economies equity investments often do not involve equity control. Private equity investors rely on agreement and alliance with the founder/entrepreneur on key decisions and strategies to ensure that an investment generates the required return (see Fang and Leeds 2008a, b for examples). The transaction structure of control-oriented growth equity in Asia provides researchers with a valuable institutional variation to other private equity markets.

Recent studies have found that private equity owners hold company management accountable for financial and operational performance. As a result, it is not uncommon for LBO companies to have turnover at senior management positions due to poor performance. LBO owners (typically) are active in corporate governance and are able to make management changes because they have majority equity ownership and the majority of board seats. Acharya et al. (2009) studied private equity transactions in the UK between 1996 and 2004, and found that one third of CEOs are replaced in the first 100 days of an LBO, and two-thirds are replaced at some point over a 4-year period.

Table V reports managerial change in Asian LBOs in our data. Managerial turnover is lower in Asian LBOs than that recorded by Acharya et al. (2009). Only one third of LBOs experienced a change in senior management (CEO, chief financial officer, and/or chief operating officer), even though the average hold period (4.2 years) for Asian LBOs is similar to the UK study. Indeed, given the wider definition of management change used herein

TABLE V

Managerial change statistics

Country	*N*	Hold period	Senior management	
		Years	No change (%)	Change (%)
Australia	157	3.4	67	33
China	48	3.8	60	40
Hong Kong	16	5.4	63	38
India	23	3.3	48	52
Japan	82	5.3	68	32
New Zealand	11	2.6	82	18
Singapore	21	3.5	67	33
South Korea	27	4.8	63	37
Taiwan	14	4.2	79	21
Thailand	11	5.0	73	27
Other	14	5.7	57	43
Total	424	4.2	66	34

This table reports managerial change in Asian LBOs during the period in which a private equity fund was an owner. The data derives from company reports and private equity manager fund reports on company management composition and key changes of senior management reported each quarter/year. A change in senior management is defined as the departure of any of the Chief Executive Officer (CEO), Chief Financial Officer (CFO) or Chief Operating Officer (COO).

(i.e. including three senior officers), we believe that it is highly possible that Asian LBOs are distinctive from LBOs in the US and Europe in this regard.

It should also be noted that the incidence of senior management change is not significantly different across countries, including Japan. Private equity ownership is active ownership despite the structure of the local labor market, or other cultural factors which may *a priori* lead one to believe that removal of senior management is difficult. For example, Wright et al. (2005) believe that the receptiveness of private equity in Japan has been associated with a change in attitude toward M&A and the breakdown of the implicit contract of lifetime employment. Consistent with this view, it does not appear the labor market rigidities in the Japanese economy make it any more difficult for Japanese private equity investors to remove management, than in other Asian markets.

Table VI provides the first data on operational change instigated by private equity owners in Asian companies. Two types of operational changes were analyzed – acquisitions and divestitures. Asian LBOs are more likely to involve acquisitions than divestitures, with companies operating in the growth markets of China, India, South Korea and Taiwan most active in acquisitions. These observations can likely be explained by the growth opportunities which face established businesses in economies undergoing rapid economic growth. Private equity helps these companies improve their competitive position, and acquisition is a strategic (and perhaps more rapid) approach to increasing market share (over and above organic growth). Lerner et al. (2008) describe how operational and strategic skills are highly valued by private equity-backed companies in these markets. Divestitures in these countries are less common.

Leveraged buyouts in the established markets of Japan, Australia (and New Zealand) are more likely to be associated with restructuring, where both acquisitions and divestitures are undertaken by companies. Acquisitions are less common in Australia (52%) and New Zealand (58%) than Japan (93%), while divestitures rates are similar. Japanese LBO deal flow goes some way to explaining why acquisitions are common as a growth strategy in this market. Wright (2007a) notes that divestments by corporations of non-core divisions have consistently provided the largest source of deal flow in Japan. Private equity investors help ''orphan'' divisions leave their corporate parent and position themselves

TABLE VI

Operational change statistics

Country	*N*	Acquisition		*N*	Divestiture	
		Yes (%)	No (%)		Yes (%)	No (%)
Australia	157	52	48	141	11	89
China	34	85	15	34	9	91
Hong Kong	15	80	20	16	13	88
India	20	70	30	17	6	94
Japan	82	93	7	82	12	88
New Zealand	12	58	42	11	9	91
Singapore	13	69	31	13	0	100
South Korea	27	85	15	27	4	96
Taiwan	11	73	27	10	0	100
Thailand	14	93	7	14	7	93
Other	21	76	24	21	10	90
Total	406			386		

This table reports acquisition and divestment activity by Asian LBOs during the period in which a private equity fund was an owner. The data derives from company reports and private equity manager fund reports on company performance and strategic change each quarter/year.

as independent companies. This structural (and financing) freedom may also provide the company with opportunities to increase market position by acquisition, a strategy stifled inside the wider corporate grouping.

Finally, operational change can involve changes to the capital-labor mix. Internationally, there is no conclusive evidence that LBOs are associated with lower employment levels (Cumming et al., 2007) and may be associated with higher total factor productivity (Kaplan and Stromberg, 2009). Li and Rozelle (2003) found no difference in employment growth between government-owned Chinese firms taken private by management and government-owned firms. Westcott (2009) reviews recent arguments in Australia that private equity owners would seek to generate financial returns by reducing employment costs. Westcott argues that employment was not reduced, suggesting that private equity seeks to improve a range of financial and operational areas of the company in order to maximize equity returns.

These summary statistics provide a context for our empirical analyses of the two central hypotheses introduced above. The data cover a wide scope of buyout transactions across many countries and over time. The empirical tests are presented in the next section.

Empirical tests

In this section, we test the two central hypotheses introduced in the first section of this paper pertaining to legality and returns (Hypothesis 1) and corruption and returns (Hypothesis 2). Table VII provides univariate tests in the form of a correlation matrix.[8] The correlations provide useful preliminary insights into the relations observed in the data. IRRs and legality are positively correlated (0.011), consistent with Hypothesis 1, albeit the correlation is not statistically significant. IRRs and corruption are significantly negatively correlated (−0.24), consistent with Hypothesis 2. 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 our econometric tests below we are careful to show our central results with different sets of explanatory variables.

The correlations in Table VII further show that IRRs are positively associated with MSCI returns over the same investment horizon, confirming the

TABLE VII

Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
(1) IRR	1.00																				
(2) Corruption perception index	−0.24	1.00																			
(3) Power distance index	0.20	−0.89	1.00																		
(4) Masculinity index	0.11	0.29	−0.19	1.00																	
(5) Uncertainty avoidance index	−0.01	0.23	−0.31	0.43	1.00																
(6) Legality	0.011	0.70	−0.59	0.49	0.51	1.00															
(7) GDP per capita	−0.14	0.66	−0.52	0.74	0.37	0.84	1.00														
(8) MSCI return (%)	0.07	−0.06	0.05	0.18	0.14	−0.05	0.06	1.00													
(9) Post investment acquisitions	−0.01	0.14	−0.10	−0.01	−0.01	0.12	0.15	0.00	1.00												
(10) Post investment divestitures	0.15	0.06	−0.07	0.11	0.09	0.04	0.04	−0.13	−0.01	1.00											
(11) Syndication	−0.20	0.25	−0.25	−0.01	0.09	0.22	0.18	−0.06	−0.10	0.00	1.00										
(12) Enterprise value at investment	0.21	0.08	0.00	−0.02	−0.13	0.00	−0.02	0.10	0.29	0.27	−0.04	1.00									
(13) Cost of investment ($m USD)	0.16	−0.08	0.06	0.08	0.08	−0.10	−0.07	0.21	0.25	0.27	−0.10	0.80	1.00								
(14) Equity share of PE fund managers	−0.02	−0.39	0.31	0.03	−0.08	−0.28	−0.22	0.13	−0.04	0.11	−0.16	0.05	0.28	1.00							
(15) Managerial replacement	−0.14	−0.15	0.10	−0.05	0.43	−0.18	0.00	0.02	0.21	−0.08	−0.02	0.04	0.14	−0.11	1.00						
(16) GP office in country of company	0.16	0.14	−0.11	0.08	0.04	0.28	0.20	−0.06	−0.02	0.08	0.14	0.10	0.07	0.07	−0.05	1.00					
(17) Multinational division	−0.06	0.19	0.04	−0.10	−0.18	0.13	0.05	−0.08	0.07	−0.10	−0.05	0.20	−0.03	−0.11	−0.02	0.06	1.00				
(18) Domestic conglomerate division	0.15	0.21	−0.19	0.30	0.46	0.21	0.32	0.26	0.13	−0.14	0.05	0.06	0.03	−0.02	0.20	0.09	−0.12	1.00			
(19) Founder	−0.20	−0.17	0.11	−0.13	−0.13	−0.07	−0.02	−0.02	0.26	0.03	−0.04	−0.08	0.07	0.18	0.02	−0.38	−0.17	−0.23	1.00		
(20) Sponsor to sponsor	−0.07	0.10	−0.15	−0.11	0.03	0.05	−0.02	0.10	−0.01	0.04	0.11	0.11	0.16	−0.16	−0.08	0.08	−0.10	−0.14	−0.20	1.00	
(21) Receiver	−0.09	−0.02	0.03	0.25	0.45	0.01	0.19	−0.19	−0.14	0.16	0.03	−0.08	−0.01	−0.01	0.40	0.05	−0.06	−0.09	−0.13	−0.08	1.00
(22) Public to private	0.17	−0.13	0.09	−0.05	−0.08	−0.15	−0.17	0.19	0.02	0.16	0.03	0.00	−0.04	0.12	0.05	0.05	−0.06	−0.09	−0.13	−0.08	−0.05

This table reports Pearson correlation coefficients across selected variables in the data. Variables are defined in Table 1. Correlations greater than 0.11, 0.13, and 0.17 in absolute value are statistically significant at the 10, 5, and 1% levels, respectively.

basic intuition that returns are better when public markets are performing better. IRRs are likewise positively associated with domestic investments, suggesting a value to proximity and local bias. IRRs are negatively associated with syndication and managerial replacement, which suggests that private equity funds replace management when they are expected to underperform, and do not share equity in high expected value projects with other private equity fund sponsors. The correlations further show that the source of the transaction matters, where IRRs are higher for purchases from domestic conglomerate divisions, and public-to-private transactions but lower for multinational divisions, founder sales, sponsor-to-sponsor sales, and receiver sales.

Our multivariate analyses of Hypotheses 1 and 2 are presented in Table VIII. Table VIII shows both OLS regressions on the subsample of fully exited investments (Models 4–6), as well as Heckman (1976, 1979) corrected investments (Models 1–3). Models 1–3 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). The Heckman corrected regressions use the sample set of variables as reported in Table VIII in the second step regressions, but further include additional first step dummy variable for the year of first investment.

Specifically, our 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 our results are quite robust to alternative specifications of the sample selection corrections (alternative specifications not specifically reported are available upon request), but not as robust relative to the standard OLS estimates on the subsample of fully realized exits. Specifically, our 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 particular variables are defined in Table I and summarized in Table II. Other variables present in the data were considered but deemed less relevant. We present regressions in which the left- and right-hand-side variables are in levels. We also considered the regressions in logs; those results were very similar, and are available upon request.

Table VIII provides strong support for Hypothesis 1 in Models 2, 3 and 5 for the Legality index. The effect is marginally statistically insignificant (t-statistics between 1.20 and 1.54) in the other models, and the statistical significance is largely influence by the inclusion of cultural variables for power distance and masculinity. We note that the variance inflation factor is around 2.70 for the models, and hence not influenced by the other variables; albeit the variance inflation factors are indicative of collinearity issues in models with some of the other cultural variables included in Models 1 and 4. On average, from Models 2, 3 and 5 we would estimate that a 1-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.

Table VIII also provides strong support for Hypothesis 2 (indeed, 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 the 5% level in Models 1, 2, and 6, and at the 1% level in Models 3, 4, and 5. The economic significance is fairly robust in the reported models whereby a 1-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% (as reported in an earlier draft of this paper).

The statistical and economic significance associated with Hypotheses 1 and 2 is graphically illustrated in Figure 2 which presents the results for

TABLE VIII

Regression analyses

	Model 1: Heckman 2nd step		Model 2: Heckman 2nd step		Model 3: Heckman 2nd step		Model 4: OLS		Model 5: OLS		Model 6: OLS	
	Coefficient	*t* Statistic	Coefficient	*t* Statistic	Coefficient	*t* Statistic	Coefficient	*t* Statistic	Coefficient	*t* Statistic	Coefficient	*t* Statistic
Constant	−4.020	−1.05	−4.316	−1.98**	−3.627	−1.73*	−0.281	−0.11	−0.854	−0.52	−3.584	−1.25
Cultural and legal factors												
Corruption perception index	−0.325	−2.02**	−0.318	−2.20**	−0.367	−2.64***	−0.302	−2.95***	−0.321	−3.82***	−0.381	−2.09**
Legality	0.336	1.49	0.348	1.82*	0.028	2.21**	0.184	1.20	0.249	1.97**	0.394	1.54
Power distance index	−0.002	−0.09					−0.006	−0.43				
Masculinity index	0.026	1.05	0.025	1.08			0.015	1.01				
Uncertainty avoidance index	0.023	1.34	0.024	1.85*	0.387	2.05**	0.000	0.03	0.005	0.66	0.030	1.92*
Economic conditions												
GDP per capita	−1.096E−04	−2.13**	−1.114E−04	−2.32**	−8.440E−05	−2.03**	−4.350E−05	−1.23	−3.700E−05	−1.2	−8.520E−05	−1.50
MSCI return	0.007	0.01	0.001	0	0.134	0.19	1.760	3.40***	1.802	3.51***	0.084	0.09
Transaction specific characteristics												
Post investment acquisitions	0.349	1.14	0.349	1.14	0.383	1.24	0.386	1.59	0.410	1.72*	0.361	0.87
Post investment divestitures	0.715	1.60	0.711	1.59	0.754	1.69*	0.429	1.21	0.459	1.3	0.740	1.21
Syndication	−0.152	−0.55	−0.149	−0.54	−0.186	−0.67	−0.296	−1.45	−0.284	−1.4	−0.179	−0.47
Enterprise value at investment	0.001	1.68*	0.001	1.73*	0.001	1.66*					0.001	1.45
Equity Share of PE Fund Managers	−1.411	−2.83***	−1.406	−2.84***	−1.211	−2.54**	−0.812	−2.34	−0.756	−2.22**	−1.253	−1.99**
Managerial replacement	−0.921	−1.99**	−0.923	−1.99**	−1.064	−2.36**	−0.136	−0.51	−0.172	−0.65	−1.054	−1.71*
GP office in country of company	0.633	0.78	0.615	0.78	0.253	0.35	0.265	0.63	0.131	0.34	0.243	0.25
Multinational division	0.317	0.51	0.283	0.56	0.217	0.43	0.147	0.33	0.068	0.16	0.179	0.26
Domestic conglomerate division	0.918	1.8	0.905	1.85*	0.907	1.81*	0.287	0.9	0.244	0.78	0.858	1.31
Founder	0.513	1.13	0.512	1.13	0.301	0.73	−0.131	−0.45	−0.223	−0.81	0.318	0.56
Sponsor to sponsor	−0.152	−0.31	−0.160	−0.34	−0.181	−0.36	−0.210	−0.46	−0.283	−0.63	−0.257	−0.43
Receiver	0.549	0.64	0.533	0.64	0.793	0.93	0.079	0.1	0.105	0.14	0.652	0.64
Public to private	0.961	1.56	0.966	1.57	0.881	1.35	−0.453	−1.12	−0.490	−1.23	0.971	1.20
Government							−1.343	−1.15	−1.462	−1.27		
PIPE							1.979	1.63	1.770	1.49		
Industry dummy variables?	Yes		Yes		Yes		Yes		Yes		Yes	
Number of observations	229		229		229		161		161		64	
$\chi 2$ (F for OLS)	88.01***		87.95***		85.32***		2.49***		2.63***		1.58*	
Adjusted R^2 for OLS							0.241		0.246		0.211	

This table reports Heckman corrected (Models 1–3) and OLS (Models 4–6) estimates of the determinants of IRRs. The Heckman correction in the first step for Models 1–3 are not reported for conciseness, but include all of the included variables in the 2nd step as well as investment year dummies for identification. Variables are as defined in Table 2. *, **, ***Significant at the 10, 5, and 1% levels, respectively.

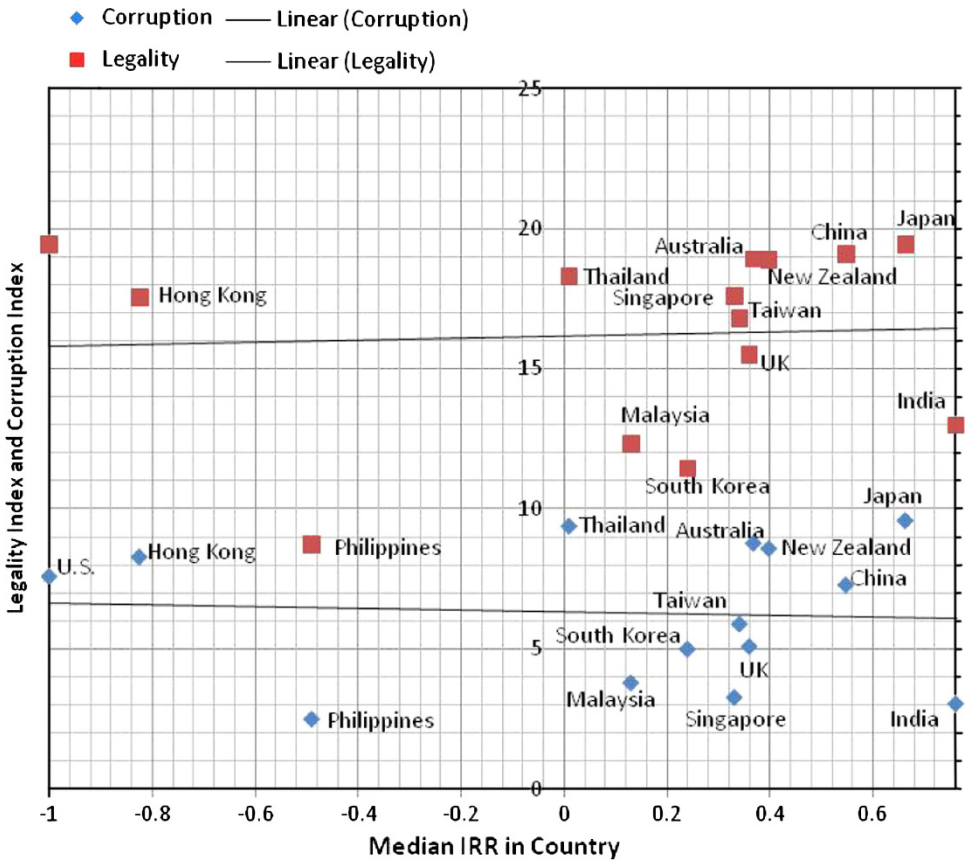

Figure 2. Country-level relation between corruption, legality and buyout returns. This figure presents country levels for legal and corruption plotted against median IRRs in the country. Investments in the UK and the US are cross-border deals, and the slope of the plot lines is not materially affected by inclusion or exclusion of such cross-border deals. As defined in Table 1, higher levels of the corruption index mean less corruption, while higher levels of the legality index mean better legal systems.

median levels by country. Figure 2 shows a negative relation between the corruption index and returns, consistent with Hypothesis 2 and the regressions in Table VIII, and a positive relation between corruption and legality, consistent with the Hypothesis 1 and the regressions in Table VIII.

There is further evidence in Table VIII 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. GDP is negative and significant in Models 1–3. That effect, however, is not robust in Models 4–6 and influences by collinearity in the other models. MSCI returns are positive and significant in Models 4 and 5, but not Models 1–3 with the Heckman correction for the decision to exit (which is largely due to the first step variables for the year of investment). In Models 4–6, 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).

Some of the transaction specific factors are statistically significant as well in Table VIII. There is evidence that post investment acquisitions are positively related to IRRs in Model 5, and post investment divestitures are positively related to IRRs in Model 3, but these effects are not robust. Enterprise value at the time of investment is positively associated with IRRs in Models 1–3. Equity share of the

PE manager(s) is negatively associated with IRRs in all the Models, 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 in Models 1–3 and 6, which is likely attributable to the fact that private equity funds are more likely to replace management when expected returns are lower. We 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.

Concluding remarks

In this article, we have considered, for the first time, the relationship between legal protection, corruption and private equity returns in Asia, using transaction data spanning 20 countries between 1989 and 2009. We have found that private equity returns are positively associated with legality and negatively associated with corruption. Investors in the region should be cognizant of this relationship. Legal systems matter for private equity returns in Asia. In addition, investors 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 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 the Asian LBO and growth equity market is in its infancy. This is not surprising as the institutional history of the market is substantially younger than the US 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 Asia. Our paper is a first contribution to what we hope is a growing body of work on this topic.

Notes

[1] The interplay between law and private equity has likewise attracted much attention in political and economic debate. For a representative discussion of the regulatory debate on private equity funds after the mid-2007 financial crisis, see *The Economist,* 19 November 2009, "*Europe's War on Hedge Funds*".

[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 corruption economies. However, we include a number of transaction specific variables in our empirical tests that account for this view.

[3] Practitioner publications have led the commentary on the development of these markets. See, for example, Bruton et al. (1999) and Ippolito (2007).

[4] The emergence of venture capital markets in these countries has also been documented. On China see Ahlstrom et al. (2007), and Wright (2007b). On India see Pruthi et al. (2003).

[5] As Lerner et al. (2008) note, LBOs in China are being transacted with "uniquely Chinese characteristics that reflect the country's legal and economic realities". Li and Rozelle (2003, 2004) and Li et al. (2005) examine Chinese privatizations and management buyouts in more detail.

[6] The IRR data uses the cash flows of the private equity investor, as reported by the investor. The authors have completed reasonableness checks on the IRR calculations. In cases where the IRR was not provided, the authors calculated the IRR using the holding period (month and year of entry and exit), investment cost and total return. This method biases the IRR downwards, by assuming all cashflows into the company occur on the first day of the investment, and are returned to the investor on the last day (i.e., it does not allow for interim cashflows which could increase the IRR).

[7] Private equity-backed companies do not tend to suffer from the separation of voting rights from cash flows rights which has been a common feature of Asian corporations (see Claessens et al., 2000).

[8] Comparison of means and medians statistics yielded similar univariate inferences and are available on request.

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Exploring the Impact of Legal Systems and Financial Structure on Corporate Responsibility

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ABSTRACT. This study investigates how diverse European legal systems and financial structures influence corporate social and environmental responsibility. The argument is developed by means of a framework that integrates legal systems and financial structures. Hypotheses relating to environmental responsibility have been tested using Innovest data gathered between 2002 and 2007 from 645 companies in 16 countries; and hypotheses relating to social responsibility have been tested using Innovest data gathered between 2004 and 2007 from 600 companies. The findings demonstrate that legal systems influence corporate responsibility (CR) in both social and environmental spheres. They also support the claim that corporations are more likely to act in environmentally responsible ways when there are strong and well-enforced state regulations in place to ensure such behavior. Company size is shown to have a greater impact on CR than either excess cash or performance. Large companies tend to be more visible than small ones do, and society expects them to behave in a more socially and environmentally responsible manner regardless of their financial performance or available cash. Finally, these findings support the hypothesis that capital structure significantly influences CR: companies with a high number of publicly held shares and a low percentage of debt are more likely than others to commit themselves to social and environmental activities.

KEY WORDS: corporate social responsibility, Europe, influence of financial structures, influence of legal systems

Introduction

While the European Union (EU) has been increasingly active, during the last 15 years, in tackling environmental and social issues, significant differences remain across Europe. In accordance with the view that the nature of corporate responsibility (CR) is directly linked to a company's cultural and regulatory environment (Matten and Moon, 2008), this study focuses on the European market, which has distinct historical, philosophical. and religious traditions that distinguish it from the American market (Crane and Matten, 2007). Although there is a burgeoning academic literature on CR in the United States, very little research focuses on European countries. Continental Europe and the US approach governance in very different ways, so there is no reason to assume that empirical evidence from Europe will duplicate findings from North America (La Porta et al., 1998, 1999; Matten and Moon, 2005; Pagano and Volpin, 2005; Shleifer and Vishny, 1997). By focusing on Europe, this study provides an opportunity to compare European and American results.

While some studies do attempt to capture the historic and abiding differences between European countries (Midttun et al., 2006), further in-depth investigations are needed. Europe remains a heterogeneous entity when it comes to economic conditions, business activities, legal issues, and even cultural legacies. Rather than list exhaustively the wide range of social and environmental regulations that exist in Europe, this article focuses on regulations that are shared by all European countries, and on those that are most significantly different.

CR is embedded in national business and legal systems. The idea of a socially embedded modern market economy features in many branches of political economy literature (Midttun et al., 2006), in studies of the welfare state, labor market (Esping-Andersen, 1990; Mjøset, 2001; Sapir, 2005), business systems and varieties of capitalism (Hall and Soskice, 2001), and negotiated tripartite governance

(neo-corporatism), with its ties to the French regulation school (Boyer and Saillard, 2002). The comparative conceptualization of CR draws upon three areas of research: institutional economics, regulation theory, and the ''varieties of capitalism,'' to explain how various European legal systems approach social and environmental issues in different ways, and with different consequences.

The well-known article by DiMaggio and Powell (1983) concludes that organizations face three types of external pressure: coercive (regulatory), normative, and mimetic. This article focuses on coercive pressure, encompassing the legal constraints that organizations must comply with. Whether one believes that CR begins when legal regulation ends, or that it requires minimum acceptable standards to be set by law, CR and law remain intrinsically linked. Utilizing a macro-analysis of the various European approaches to social and environmental issues, this article analyzes the impact of diverse European legal standards on the adoption and practice of corporate social responsibility (CSR) and corporate environmental responsibility (CER).

Environmental and social outcomes in particular countries interrelate not only with regulatory requirements and the degree of enforcement, but also with more general aspects of the institutional environment (Berkowitz et al., 2003; Kogut and Ragin, 2006). While focusing on legal systems, this study necessarily considers the interrelated institutional environment.

Previous research suggests that business financial structures,[1] such as organization size, are important variables linked to CR ratings (McWilliams and Siegel, 2001; Orlitzky and Benjamin, 2001; Orlitzky et al., 2003; Waddock and Graves, 1997). I investigate three major theories that consider the influence of business financial structures on CR: slack resource theory, the corporate visibility concept, and information asymmetry theory. In doing so, I attempt to provide an integrative framework for analyzing the influence of business financial structures on CR.

This article examines how the existence of many different legal systems and business financial structures influences corporate social and environmental responsibility in Europe. In addition to introducing and evaluating a new data set, this study also contributes to several areas of research. First, it contributes to an emerging line of research that examines country-level institutional features, such as the origin of a particular legal system, to explain national differences in corporate social and environmental responsibility. There has been little attempt to develop a model that can evaluate CR in diverse environments with differing regulatory and market settings. I attempt to fill this gap by developing a conceptual framework that focuses on legal systems and is tested empirically in the European context. My results confirm the validity of this conceptual framework in the European environment. The analysis of CER shows a direct correlation between intense regulation and high corporate ratings. With regard to CSR, the findings are more ambiguous; while civil and German civil laws significantly influence CSR, common and Scandinavian civil laws do not. Furthermore, mean test results indicate that corporate social rating averages differ only slightly across the countries of Europe, despite a variety of legal systems. This article suggests ways to interpret this finding.

Second, this study adds to the sparse but growing literature that assesses the links between CR and corporate financial performance on the European market. Most relevant research focuses on the US market. One reason why earlier studies have not considered the effect of financial performance on CR in the European market is that CR data for European firms are produced by very few rating agencies and are not widely available. In this article, data relating to the European market have been collected from Innovest for ten consecutive years (for some years, the data are insufficient). It is therefore possible to examine the effects of financial performance on CR in a large, diverse sample of European firms.

Third, this article makes an important contribution to the literature on private equity and bank lending in relation to CR. In analyzing the links between various financial factors and CR, the extant literature concentrates on the relation between CR and financial performance and does not extend to other financial considerations such as levels of debt or levels of privately held shares. In this article, I show that debt has only a weakly negative impact on CR, and that social and environmental ratings are positively linked with the level of publicly (as opposed to privately) held shares.

Finally, this article analyzes the impact of company size and excess cash on CR. As these results take into account liquidity as well as size, they offer a wider perspective on the financial structures that encourage high levels of CR. The new evidence relating to the European market complements previous studies by assessing the relative importance of corporate visibility and available resources.

The remainder of this article presents an integrative framework relating to legal systems and financial structures. Hypotheses account for the influence of legal systems and financial structures on CR, while introducing and evaluating a new set of data that reveals levels of CR across Europe. The results are presented, finally, analyzed, and their meaning discussed.

Literature review and the development of hypotheses

Definition of CR

This study examines corporate environmental and social policies. As the term ''social'' in CSR may be misleading (Waddock, 2008), the term ''corporate responsibility'' (CR) is used ''to signal an emerging sense that responsibilities are fundamental to all actions, decisions, behaviors and impacts of business'' (Waddock, 2003). I focus on CR, rather than related concepts, for two reasons. First, there is a growing use and acceptance of the term CR by both practitioners (e.g., EABIS Conference, 2006; Eco Conference, 2006; Zadek, 2004) and academics (e.g., Andriof and Waddock, 2002; Hillenbrand and Money, 2007; Waddock, 2003, 2008). Second, CR is a broad concept that allows both the social and environmental aspects of responsibility to be investigated in the same study (MacMillan et al., 2004; Waddock, 2003). CR is a broader concept than CSR, encompassing not only day-to-day operating practices and business strategies, but also impacts on society and the environment (Ahmad et al., 2003; Andriof and Waddock, 2002). Thus, the term corporate responsibility (CR) is the core concept, embracing various dimensions of responsibility. The terms CSR and CER are used to differentiate social and environmental issues. McWilliams and Siegel (2001), defined corporate (social) responsibility as *actions that appear to further some social good, beyond what is required by law*. In this article, CR refers to corporate activity that advances a social, environmental, or ethical agenda beyond that required by law (Siegel and Vitaliano, 2007).

Influence of legal and economic systems on CR

The legal systems of EU countries fall into three main groups: the first based on common law, the second derived from civil and German civil law, and the third originating in Scandinavian civil law (Berkowitz et al., 2003; La Porta et al., 1998). One consequence of these varied legal origins is a difference in legislation covering social and environmental policies. Environmental and social outcomes in particular European countries are interrelated not only through regulatory requirements and the degree of enforcement, but also more broadly through the institutional environment (Berkowitz et al., 2003; Kogut and Ragin, 2006). By focusing on legal systems, the investigation field of this study is inextricably linked with the institutional environment.

Grouping European countries in accordance with the origins of their legal systems might suggest a dichotomy between common law countries, which favor explicit CR policies, and all other countries, in which companies tend to adopt implicit CR policies (Matten and Moon, 2008). ''Explicit'' CR refers to corporate policies that openly assume responsibility for the interests of society; firms operating in this way develop voluntary, self-interest driven policies and strategies to address social issues within a perceived area of CR. By contrast, implicit CR refers to a national formal and informal structure in which every corporation is assigned an agreed share of responsibility for society's interests and concerns. This framework reflects the traditional dichotomy between liberal market economies and coordinated market economies. Matten and Moor's model assumes a dichotomy between common law countries, which develop explicit CR, and the rest of Europe, where implicit CR policies prevail. The model needs to be specified to describe how CR varies across European countries. While the EU has been increasingly active during the past 15 years in addressing environmental and social issues, significant national differences remain.

Within the EU, a distinction can be made among common law countries, civil law and German civil law countries, and Scandinavian civil law countries. This distinction is based on analyses of the legal systems per se, and on the effectiveness of these legal systems in addressing social and environmental issues.

According to Berkowitz et al. (2003), "the English common law, the French civil law and the German civil law dominated the process of consolidation and formalization of formal legal orders in Europe. The English common law has evolved over centuries and, in contrast to the French and German civil systems, was never systematized and codified. (…) Statutory law gained importance since the mid-nineteenth century, but case law remains the hallmark of the English legal system to this day. (…) Comparative legal scholarship also distinguishes a fourth legal system, the Scandinavian one. The Scandinavian legal system is not built around a major codification, like the French or the German legal system, nor does it have a body of case law like the English common law. Early codification of existing business practices and the close political and economic relations among the four Scandinavian countries has given rise to a legal system based on statutory law that is distinct from the legal systems described above."

One consequence of these different legal traditions is a variation in the laws that cover social and environmental policies, and the disclosure of information about these issues. Table I presents the major differences among Europe's three legal systems in relation to social and environmental issues. Because corporate commitments can be evaluated only if they are disclosed, disclosure policies are also investigated. The aim is not to list exhaustively every regulation that impinges on social or environmental issues, but to highlight major differences among the three identified European legal systems.

Higher levels of environmental and social involvement might be expected in legal systems on the Scandinavian model (Aguilera et al., 2007), which push businesses to take responsibility for environmental and social issues (Campbell, 2006, 2007). According to Matten and Moon (2008), "companies practicing explicit CSR use the language of 'CSR' in communicating their policies and practices to their stakeholders while those practicing implicit CSR would normally not describe their activities this way." Because companies from liberal market economies[2] communicate more explicitly about environmental and social issues, one would expect them to score better on environmental and social responsibility. On the other hand, companies based in civil law countries may fully comply with the law and customary ethics, even if they do not publicize their CR activities.

From Table I and on the basis of the previous considerations, the following hypotheses about the impact of legal systems on CR can be derived.

H1: The stricter the law and its enforcement with regard to social and environmental issues, and their disclosure, the higher the average ratings.

H1-A: The average CR rating is higher for companies headquartered in Scandinavian civil law countries than for companies headquartered in other legal systems.

H1-B: As voluntary disclosure is fostered by the legal environment for companies headquartered in common law countries, the average CR rating should be higher for companies headquartered in common law countries than for companies headquartered in civil and German civil law countries.

H1-C: As voluntary disclosure tends to be neglected by companies headquartered in civil and German civil law countries, the average CR rating observed should be lower for companies headquartered in civil and German civil law countries than for companies headquartered in other legal systems.

Influence of financial structures on CR

The main three conceptual and theoretical foundations that predict the influence of financial structures on CR are slack resource theory, corporate visibility, and information asymmetry theory. The taxonomy of these different financial structures is summarized in Table II.

The *corporate visibility* concept states that the more visible a company becomes (generally through growth), the more it will invest in CR. Numerous studies (e.g., Amato and Amato, 2007; Burlingame and Frishkoff, 1996; Johnson, 1966) have concluded

TABLE I

Differences related to CR/disclosure per legal system

	Disclosure	Social	Environment
Common law countries	High level of information disclosure informing outsiders of investment decisions (La Porta et al., 2000). As the stock market is the most important source of capital, firms have to provide a high degree of transparency and accountability to shareholders and investors (Crane and Matten, 2004)	*A liberal welfare state regime* (Palier et al., 2001) Market-oriented capitalism in which commercial logic, adapted by the competition supervision entities, constitutes the main organizing principle for almost all coordination procedures. Regulation is very market-oriented, controlled by sophisticated legal mechanisms E.g.: Significant decentralization of wage bargaining, individualization of pay and segmentation of labor (Boyer, 2005) Dominant role to shareholders (Crane and Matten, 2004)	Common law remedies that protect environmental rights – although effective in many cases – are often considered insufficient (Lowry and Edmunds, 2000; Schoenbrod, 1999; Sollner, 1994). Due to informational problems and the large number of individuals often involved (Sollner, 1994), statutory law is needed: long-term reforms must be left to the legislators, whether in Parliament or in the EU (Cocks, 2000) In the English legal system, the Human Rights Act 1999 has some possible impacts on the substantive law and the potential liability of the state for failure to provide adequate levels of production (Hart, 2000; Tromans, 2001)
Civil law countries/ German civil law countries – the continental European model	Voluntary (and mandatory) disclosure levels are lower in civil-law countries (Hope and Pope, 2003; Jaggi and Low, 2000; Webb et al., 2008)	*A conservative (continental) welfare state regime* (Palier et al., 2001) Countries "whose governments play a large role in the economy, emphasize distributional considerations, and favor employees over capital-owners when the two conflict" (Roe, 2000) Stakeholders other than shareholders also play an important role, sometimes even equivalent to or above that of shareholders; employees are among the most important stakeholders (Crane and Matten, 2004) leading to an active employment policy, an employment protection, and job stability (Amable, 2003)	With statute law, there is no guarantee for an efficient outcome as the legislative process is influenced by different pressure-groups pursuing their own interests (Sollner, 1994). However, statute law has the capacity to adopt broader, more inclusive solutions Comparing environmental concerns to social ones, Civil Law country executives have been found to rank ecological concerns lower than social concerns (Canarutto and Nidasio 2005; Fernández and Melé, 2005)

TABLE I
continued

	Disclosure	Social	Environment
Scandinavian civil law countries	Due to legislation prepared during the 1990s on environmental reporting (Kolk, 2000), Scandinavian firms appear to have a strong policy requiring environmental disclosure (Kolk et al., 2001)	*A social-democratic (Nordic) welfare state regime* (Palier et al., 2001) Frequent negotiations between social partners and public authorities concerning the rules governing most of the components of social life and economic activities. Tripartite bargaining (employers–unions–state) lies at the heart of institutional reforms. Policies aim to enhance employment and competitiveness (Boyer, 2005)	Nordic legal (and economic) systems largely favor business environmental issues (Aguilera et al., 2007)

that firm size has an important impact on CR levels. In their studies of corporate giving and the US market, Atkinson and Galaskiewicz (1988), Boatsman and Gupta (1996), and Buchholtz et al. (1999) found that large firms considered CR more carefully than small ones. Because larger companies tend to be more visible, they are generally more concerned about their social policies and environmental impact. Hence,

H2: The average CR rating is higher for the most visible companies.

H2-A: Socially (environmentally) more responsible companies tend to be larger than socially (environmentally) less responsible companies.

Based on *slack resource theory*, very profitable companies with excess cash are more likely than others to invest in CR.

– *Available cash*. The slack resource theory view of CR argues that companies commit themselves to socially and environmentally responsible behavior when slack resources allow it (McGuire et al., 1988; Roberts, 1992; Ullmann, 1985). From this perspective, the more available cash a company has, the more it should invest in CR activities.
– *Accounting performance/profitability*. Slack resource theory also suggests a link between profitability and corporate social and environmental responsibility. For instance, McGuire et al. (1988) and Waddock and Graves (1997) found strong relationships between CR and financial performance.

Hence,

H3: The average CR rating is higher for companies with extra resources.

H3-A: Socially (environmentally) more responsible companies have more available cash than socially (environmentally) less responsible companies.

H3-B: Socially (environmentally) more responsible companies are more profitable in terms of accounting results than socially (environmentally) less responsible companies.

According to *information asymmetry theory*, companies invest more or less in CR as a function of corporate capital structure. More specifically, capital providers may require the right to examine the CR

TABLE II

Conceptual framework relative to the influence of financial structures on CR

	Mechanism	Studies	Operationalization
Slack resource theory	Availability of slack resources provides an opportunity for companies to invest in CR actions	E.g., Buchholtz et al. (1999), Waddock and Graves (1997), McGuire et al. (1988)	Available cash, accounting performance (+)
Corporate visibility	More visible companies are subject to a higher level of scrutiny from external agents and tend to invest more in CR actions	E.g., Brammer and Millington (2006), Amato and Amato (2007), Miles (1987)	Size (+)
Information asymmetry theory	Capital providers may require the right to approve CR actions promoted by managers To limit information asymmetry effects, managers should disclose their policies and limit their involvement in discretionary activities	E.g., Scholtens (2006), Goss and Roberts (2006)	Capital structure, Publicly and privately held shares (±)

This table summarizes the different financial structures influencing corporate responsibility.

activities that company managers choose and promote. Most of the existing literature focuses on the role of public shareholders in improving CR and neglects the potential impact of the credit channel and privately held shares on companies' non-financial policies. ''Privately held shares'' refers to shares held by insiders, i.e., any person who could potentially impact a company's policy (including corporate managers, directors and large blockholders). Two opposing views about the role of the structure of capital are defended in the literature.

Scholtens (2006) argues that the public stock market has a weak impact on acts of CR for three reasons. First, the public stock market rarely provides new finance to help companies invest in social and environmental projects. Second, shareholders do not feel responsible for the non-financial performance of companies they invest in, because liability is limited and share ownership often widely dispersed. Third, because environmental and social activity involves long-term responsibilities, the short-term market approach does not permit the evaluation or regulation of CR. Banks and venture capitalists, by contrast, do have an opportunity to investigate the social and environmental policies of the companies in which they want to invest. Goss and Roberts (2006) found that companies with the worst social responsibility scores tend to pay higher loan spreads. Firms mostly owned via long-term debt invest more in CR activities than firms held by equity. Similarly, firms owned predominantly through privately held shares invest more in CR activities than firms owned through publicly held shares.

Hence,

H4: Privately owned capital has a positive influence on CR ratings.

H4-A: Socially (environmentally) more responsible companies are more leveraged than socially (environmentally) less responsible companies.

H4-B: Socially (environmentally) more responsible companies are owned through privately held shares more often than socially (environmentally) less responsible companies.

Private capital and bank credit can, however, be more opaque than market-based financing (Boot and Thakor, 1997), reducing the pressure on companies to act responsibly and disclose their CR policies and

activities. Bank debt is known to limit free cash flow, thereby reducing a manager's ability to invest (Lang et al., 1995). It is possible that, quite apart from liquidity constraints, investment in corporate social issues is lower for firms with relatively high levels of bank debt. Furthermore, contrary to what is usually asserted, financial markets do have the capacity to support long-term projects (Thesmar and Landier, 2007). Hence, firms that are mostly equity-owned tend to invest more in CR policies than firms that are mostly held by long-term debt. Firms mostly owned through publicly held shares tend to invest more in CR than firms mostly owned through privately held shares.

Hence,

H4′: Publicly owned capital has a positive influence on CR ratings.

H4′-A: Socially (environmentally) more responsible companies are more leveraged than socially (environmentally) less responsible companies.

H4′-B: Socially (environmentally) more responsible companies tend to be owned through publicly held shares more often than socially (environmentally) less responsible companies.

Methods

Sample

Banks, insurance, and financial companies were excluded from this sample to prevent an inconsistent analysis incorporating accounting variables from other industrial sectors. The final sample of companies headquartered in 16 European countries is composed of 631 companies for the CER analysis, and 577 companies for the CSR analysis. The CER study availed data from 2002 to 2007, and the CSR study the data from 2004 to 2007. The data are unbalanced, that is, the total number of companies in the CER sample over the whole period studied is 631 and in the CSR sample 577; however, the number of companies in the sample varies year by year. For example, the maximum number of companies in the CER sample in one single year is 597 (2003), and in the CSR sample 406 (2006).

Dependent variables

Corporate social responsibility and environmental responsibility were considered separately, and measured through two Innovest constructs that rate major corporate acts of social and environmental responsibility on a scale ranging from 0 to 2000; these scores are then transformed into ratings that range from AAA (outperform) to CCC (underperform). Innovest utilizes no exclusion criteria. Their analytic model attempts to balance levels of environmental and social risk with the managerial and financial capacity of a company to manage future sustainability issues. The metrics used are based on quantitative data whenever possible, with the objective of analyzing a company's actual performance to substantiate its claims. Innovest's social data scores reflect company responsibility in the areas of sustainable governance, human capital, stakeholder capital, products or services, and emerging markets. Hence, the view of social performance is quite broad. Environmental data scores balance the economic value that a company adds (e.g., by producing products and delivering services) against the waste it generates in creating that value. Factors considered by Innovest's analysts can be grouped into five broad categories: historical liabilities (risk resulting from previous actions); operating risk (risk exposure from recent events); sustainability and eco-efficiency risk (future risks initiated by the weakening of a company's material sources of long-term profitability and competitiveness); managerial risk efficiency (the ability to handle environmental risk successfully); and environmentally related strategic profit opportunities (business opportunities available to the company relative to its industry peers).

The main benefits of these scores are their completeness. Making use of about 20 information sources, both quantitative and qualitative, Innovest's analysts evaluate a company relative to its industry peers via an analytic matrix. Approximately, 40 aspects of the company are evaluated, and these individual scores together constitute its final rating. For each factor, the company receives a score between 1 and 10. As variables are not considered equally important, factors are weighted differently. The final numerical rating assigned to a company is converted into a relative score based on the total spread of scores in the sector to which that company

belongs. Five main sectors are considered, ranging from service companies (sector 1, measured in terms of industrial intensity) to heavy industries (sector and industrial intensity level 5). The first, low intensity sector includes commercial, consumer and employment services, and internet software and consulting companies. The second sector is made up of retail trade, and biotechnology and telecommunications companies. The third sector – rising in its level of industrial intensity – comprises airlines, and firms that produce communications equipment, computers, construction, and electronic equipment. The fourth sector includes automobile companies, industrial conglomerates, and pharmaceutical companies. The fifth and most intensive sector covers chemicals, metals, and mining, and oil and gas companies.

Independent variables

Legal systems

This empirical study relies on per capita GDP to assess the three groups of countries identified earlier: those with common law, civil or German civil law, and Scandinavian civil law.

As this empirical analysis was conducted both before and after 2004, it focuses on the 15 countries that belonged to the EU in January 2004. Switzerland and Norway, both members of the European Free Trade Association (EFTA) are also included because of their strong links with EU member countries.

Between 2002 and 2007, companies headquartered in common law countries (Great Britain and Ireland) represented 43–64% of the sample. Companies headquartered in civil law countries (France, Belgium, Greece, Spain, Italy, Portugal, and the Netherlands) and German civil law countries (Austria, Germany, and Switzerland) made up 29–42% of the sample. Companies headquartered in Scandinavian countries (Finland, Denmark, Norway, and Sweden) accounted for 7–13.5%.

Financial structures

Regarding financial structures, the following variables were added (from Thomson Financial, Worldscope, and DataStream): size (total capital), available cash (cash-flow-to-assets), accounting performance/profitability (return-on-assets), capital structure (long-term-debt-to-total-capital), and privately versus publicly held shares (the proportion of privately held shares to total shares). All time-varying variables were lagged by 1 year, as most business policy decisions are based on the financial data from the previous year. This 1-year lag helps us to prevent problems of endogeneity.

Control variables

Economic conditions

The economic performance of individual countries, as well as their legal differences, may also influence CR. It is generally assumed that higher levels of national economic development promote CR through additional resources and a greater awareness of issues (Li and Zhang, 2010). The development of economic systems is proxied by the per capita gross domestic product in purchasing power standards (per capita GDP), as it offers the broadest, most all-encompassing measure of how the economy is performing. The per capita GDP has been lagged by 1 year, to be consistent with financial data (see above) and to prevent problems of endogeneity.

Industry sectors

Corporate environmental and social performance is also controlled for industry bias. As detailed above, sectors are categorized into five groups, based on their global level of impact on the environment; they range from service companies (sector intensity 1) to heavy industries (sector intensity 5).

Table III recaps the variables used in this study.

Time frame

The CER and CSR data provided by Innovest analysts have increased over time; in 2002 and 2004, respectively, the accumulated observations on CER and CSR became substantial enough to make this study possible. Table IV shows the growth in valid observations relating to corporate environmental and social responsibility ratings.

The decision to study CER from 2002 to 2007 and CSR from 2004 to 2007 reflects the number of valid observations available.

TABLE III

Variable definitions

Variables	Content
Environmental ratings	Scores between 1 and 2000 evaluating a company's environmental activities. Data provided by Innovest
Social ratings	Scores between 1 and 2000 evaluating a company's social activities. Data provided by Innovest
Common law countries	A dummy variable equal to 1 for companies headquartered in one of the following countries: Great Britain or Ireland
Civil and German civil law countries	A dummy variable equal to 1 for companies headquartered in one of the following countries: Belgium, France, Netherlands, Greece, Spain, Italy, Portugal, Austria, Germany, or Switzerland
Scandinavian civil law countries	A dummy variable equal to 1 for companies headquartered in one of the following countries: Finland, Denmark, Norway or Sweden
Per capita gross domestic product in purchasing power standards	Gross domestic product (GDP) is a measure for the economic activity. It is defined as the value of all goods and services produced less the value of any goods or services used in their creation. Per capita GDP is expressed in PPS, i.e., a common currency that eliminates the differences in price levels between countries allowing meaningful volume comparisons of GDP between countries. It is expressed in relation to the EU average set to equal 100. If the index of a country is higher than 100, this country's level of GDP per head is higher than the EU average and vice versa
Total assets	Sum of total current assets, long-term receivables, investment in unconsolidated subsidiaries, other investments, net property plant and equipment, and other assets
Cash-flow-to-assets	(Income before extraordinary items and preferred and common dividends and after operating and non-operating income and expense, reserves, income taxes, minority interest, and equity in earnings + depreciation, depletion, and amortization)/Total Assets * 100
Return-on-assets	(Net income before preferred dividends + ((interest expense on debt − interest capitalized) * (1 − tax rate)))/last year's total assets * 100
Total debt per total assets	Sum of all interest bearing and capitalized lease obligations/total assets * 100
Privately held shares per total shares	Number of shares held by insiders/Common shares outstanding * 100 (An insider could be an officer, director, person with a policy-making role, or beneficial owner of a company's stock. Insiders are both individuals and corporations)
Industry sectors	Five main sectors in terms of industrial intensity are considered, ranging from services companies (sector intensity 1) to heavy industries (sector intensity 5). Main clusters in the first sector include commercial, consumer, and employment services, internet software and services, and consulting companies; in the second sector, retail trade, biotechnology and telecommunication services companies; in the third, airlines, communications equipment, computers, construction, and electronic equipment companies; in the fourth, automobiles companies, industrial conglomerates, and pharmaceuticals companies; and in the fifth, chemicals, metals and mining, and oil and gas companies

This table defines the variables used in this research.
Sources: Innovest, Thomson Financial, Worldscope, Datastream.

TABLE IV

Number of valid observations based on corporate social and environmental responsibility ratings

	2002	2003	2004	2005	2006	2007
Number of valid observations relating to the CER analysis	397	597	585	457	460	442
Number of valid observations relating to the CSR analysis	40	40	205	457	460	442

This table reports the number of valid observations based on corporate social and environmental responsibility ratings from 2002 to 2007. Variables are as defined in Table III.

Results

Descriptive statistics

Descriptive statistics are reported below. Table V reports the means, standard deviations and Table VI the correlations of the sample. As of a matter of simplification, only the correlations relating to the year 2007 are reported.[3]

From 2002 to 2007, the environmental ratings variables are correlated with other variables, with the following exceptions: common law countries in 2004 and 2005, civil and German civil law countries from 2004 to 2007, Scandinavian civil law countries in 2004, per capita GDP in 2003, 2005, and 2007, return-on-assets from 2003 to 2005 and in 2007, and total-debt-assets from 2002 to 2004 and in 2007. With these exceptions, CER correlates with every independent variable over the period studied. CSR ratings from 2004 to 2007 are correlated with the following variables: total-debt-to-total-assets and the percentage of privately held shares. They are correlated with the three groups of countries in 2004 and with the civil and German civil law countries as well as the common law countries in 2005. These basic statistics suggest that CSR may be less well correlated with legal systems and financial structures than CER.

t-*Test results*

Table VII reports means and standard deviation values for variables of interest in sub-samples based on the three identified groups of legal systems as well as the *t*-test values of the equality of means between the sub-samples.

Regarding CER ratings, *t*-test values show that companies headquartered in Scandinavian law countries have significantly higher ratings than companies headquartered in civil law and German civil law countries, which in turn are significantly higher than their counterparts in common law countries. There are three exceptions. In 2005–2006, the average environmental ratings of companies headquartered in civil and German civil law countries were not significantly higher than the ratings received by their common law counterparts. In 2007, companies headquartered in civil law and German civil law countries received almost the same ratings as those from Scandinavian civil law countries.

Regarding the CSR ratings, *t*-test values show that Scandinavian companies do significantly better than common law companies in 2004, and that these, in turn, receive higher ratings in 2004 and 2005 than their counterparts headquartered in civil and German civil law countries. Apart from these three results, the differences between the CSR rating averages of the three country groups are not statistically significant.

Regression results

Model design

The panel data methodology allows cross-sectional and time series data to be combined to test the impact of legal systems and financial structures on CR ratings. The following specifications were decided[4]:

$$\begin{aligned} ER_{it} = {} & \alpha + LS1_i + LS2_i + \log(Assets_{it-1}) \\ & + CashA_{it-1} + ROA_{it-1} + DebtAt_{it-1} \\ & + PrivatelyHeldSh_{it-1}\ \text{Per Capita GDP}_{it-1} \\ & + \text{Industry Sector}_i + \varepsilon_{it} \end{aligned} \quad (1)$$

TABLE V

Means and standard deviations

Variables	2002		2003		2004		2005		2006		2007	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1. Environmental ratings	920.9	352.8	957.5	309.7	976.4	303.7	1057	317.9	1070	311.1	1096	323
2. Social ratings					1125	387.1	1202	273.5	1203	259.9	1212	269
3. Common law countries	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
4. Civil and German civil law countries	0.3	0.5	0.4	0.5	0.4	0.5	0.4	0.5	0.4	0.5	0.4	0.5
5. Scandinavian civil law countries	0.1	0.3	0.1	0.3	0.1	0.3	0.1	0.3	0.1	0.3	0.1	0.3
6. Per capita GDP	121.9	8.1	120.8	10.5	121.3	11.5	119.5	11.7	119	12.7	117.8	13
7. Total assets (in billions)	7974.6	1736.4	7820.2	1618.8	7921.4	1584.8	8267.3	1508.6	8359.9	1526	8442.1	1547.9
8. Cash-to-assets	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
9. Return-on-assets	0.9	15.7	4.3	10	5.9	8.7	7.4	8.2	8.4	9.9	9.2	9.6
10. Total debt/total assets	28.1	17.6	27.9	17.6	26.6	16.4	27.5	16	27.3	17	28	17.1
11. Privately held shares %	20.9	19.4	25.4	22.3	25.5	22.5	25.2	22.9	25.4	22.9	25	22.9
12. Industry sectors	2.9	1.3	2.9	1.2	2.9	1.2	3	1.3	3	1.3	3	1.3
No of obs.[a]	397	397	597	597	585	585	457	457	460	460	442	442

This table reports number of observations, as well as the mean and standard deviation of each variable in the data from 2002 to 2007. Variables are as defined in Table III.

[a]No of observations with regard to every variable, to the exception of social ratings. For social ratings, as indicated hereinabove, the numbers of observations are equal to, respectively 205, 457, 460, and 442 for 2004, 2005, 2006 and 2007.

TABLE VI

Correlations for year 2007

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Environmental ratings											
2. Social ratings	0.67925***										
3. Common law countries	−0.07892*	−0.03511									
4. Civil and German civil law countries	0.03456	0.01892	−0.77104***								
5. Scandinavian civil law countries	0.0665*	0.02439	−0.35332***	−0.32329***							
6. Per capita GDP	0.04096	0.02522	0.00369	−0.23003***	0.33245***						
7. Total assets	0.40127***	0.34524***	−0.3556***	0.41706***	−0.08646*	−0.12751***					
8. Cash-to-assets	−0.09038*	−0.0852*	0.14518***	−0.11944**	−0.03829	0.15208***	−0.24514***				
9. Return-on-assets	0.04409	0.03153	0.03035	−0.10411**	0.10576**	0.11587**	−0.10698**	0.12258**			
10. Total debt/total assets	−0.04668	−0.10404**	0.03932	−0.01338	−0.03736	−0.13418***	0.11784**	−0.19774***	−0.19099***		
11. Privately held shares %	−0.11488**	−0.17801***	−0.41608***	0.40278***	0.02521	−0.12827***	0.04692	−0.07134	−0.05261	0.01	
12. Industry sectors	0.33824***	0.0745*	−0.15748***	0.08054*	0.11569***	0.04215	0.3239***	−0.046	0.03668	−0.05285	0.01079

This table reports Pearson correlation coefficients across each variable in the data. As of a matter of simplification, only the correlations relating to the year 2007 are reported. Correlation statistics were of course carried out for each year. The results remain similar over the whole period studied and are available upon request. Variables are defined in Table III.

Statistically significant at *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$ level (two-tailed).

TABLE VII

Means, standard deviations, and mean tests relating to the sub-samples

	(1) Sub-sample of companies headquartered in common law countries			(2) Sub-sample of companies headquartered in civil and German civil law countries			(3) Sub-sample of companies headquartered in Scandinavian Civil law countries			Equality of means – *t*-test value and significance (1) vs. (2)	Equality of means – *t*-test value and significance (2) vs. (3)	Equality of means – *t*-test value and significance (1) vs. (3)
	Nb of obs.	Mean	SD	Nb of obs.	Mean	SD	Nb of obs.	Mean	SD			
Env. ratings												
2002	238	855.57	346.67	107	973.98	356.89	25	1224.7	309.91	−2.91***	−3.24***	−5.11***
2003	285	900.05	314.38	206	974.75	309.21	65	1132.6	253.46	−2.62***	− 3.74***	−6.36***
2004	261	935.78	303.1	224	972.21	296.33	63	1125.8	273.53	−1.33*	− 3.69***	−4.55***
2005	203	1046.3	311.47	181	1042.5	323.37	49	1156.4	309.62	0.12	−2.21**	−2.22**
2006	205	1050.3	316.77	177	1072.3	311.88	56	1174.7	299.64	−0.68	−2.16**	−2.63***
2007	189	1067.9	332.54	175	1129.6	328.98	57	1155.4	305.33	−1.78*	−0.52	−1.77*
Soc. ratings												
2004	101	1239.6	262.99	57	1151.1	239.64	18	1114.5	214.58	2.10**	0.58	1.91*
2005	190	1213.2	269.62	162	1169.4	270.55	51	1223.1	275.21	1.52*	−1.23	0.23
2006	197	1200.6	266.75	168	1188.9	249.58	57	1232.5	262.79	0.43	−1.13	−0.80
2007	183	1203.5	274.44	169	1226.4	265.64	57	1205.4	269.52	−0.80	0.51	−0.05

This table reports means and standard deviation values for variables of interest in sub-samples based on the three identified groups of legal systems as well as the t-test values of the equality of means between the sub-samples. Variables are defined in Table III.

Statistically significant at *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$ level (two-tailed).

and

$$SR_{it} = \alpha + LS1_i + LS2_i + \log(Assets_{it-1}) + CashA_{it-1} + ROA_{it-1} + DebtAt_{it-1} + PrivatelyHeldSh_{it-1}\ \text{Per Capita GDP}_{it-1} + \text{Industry Sector}_i + \varepsilon_{it} \quad (2)$$

where ER_{it}, Environmental Rating on company i in year t; SR_t, Social Rating on company i in year t; $LS1_i$, dummy that takes the value of 1 if company i is headquartered in a country whose legal system is based on common law and 0 otherwise; $LS2_i$, dummy that takes the value of 1 if company i is headquartered in a country whose legal system is based on civil and German civil law and 0 otherwise; $\log(Assets_{it-1})$, log of total Assets of company i in year $t-1$ (in million); $CashA_{it-1}$, available Cash to total Assets of company i in year $t-1$; ROA_{it-1}, Return-on-assets of company i in year $t-1$; $DebtA_{it-1}$, total Debt to total Assets of company i in year $t-1$; $PrivatelyHeldSh_{it-1}$, Privately held Shares to total shares of company i in year $t-1$; Per Capita GDP_{it-1}, Per capita Gross Domestic Product in year $t-1$ of the country in which company i is headquartered, expressed in Purchasing Power Standards and in relation to the EU average[5]; Industry $Sector_i$, the industry Sector to which company i belongs (five main sectors were defined)[6]; and ε_{it}, an error term at t.

With regard to the three legal system groups, the two country groups included in the regression are the common law country group and the civil and German civil law country group. The Scandinavian civil law country group serves as the reference group. Also, it is important to note that the models incorporate a yearly trend variable to account for differences over time.

Model specifications

Fixed and random effects model.[7] Three criteria were taken into account in categorizing between-firms variation as fixed or random: (1) whether the variation is central to control for the unmeasured characteristics of firms; (2) whether the substantial loss of information resulting from discarding the between-firms variation can be tolerated; and (3) whether it is nonessential to estimate the effects of stable covariates (Allison, 2005). As it was not necessary to control for unmeasured characteristics of firms, but crucial to estimate the effects of stable covariates such as the legal system in which a firm is headquartered, a random effects approach is therefore adequate. Nevertheless, when I tested the random effects model to see whether time-varying predictors are uncorrelated with firm-specific fixed effects, my results rejected the hypothesis that random firm effects are uncorrelated with the measured predictor variables. These results are presented in Table VIII.

Regarding the tests for specific variables, CER results show significant differences at the 0.01 significance level for the variables "Return-to-assets" and "Privately held-shares-to-total-shares," while CSR results show significant differences for the variables "Debt-to-assets" and "Privately held-shares-to-total-shares." Differences between the four other variables in each model are not statistically significant, despite the large sample size. These results

TABLE VIII

F-tests on the fixed effects coefficient and random effects coefficients

	Contrasts *F* value
Equation 1	
Overall	2.18**
Per capita GDP	2.43
Total assets	0.06
Return-on-assets	3.24*
Cash-to-assets	2.61
Total debt/total assets	0.24
Privately held shares %	3.5*
Nb of obs.	2870
Nb of groups	645
Equation 2	
Overall	3.36***
Per capita GDP	0.02
Total assets	1.34
Return-on-assets	1.75
Cash-to-assets	1.21
Total debt/total assets	9.19***
Privately held shares %	4.58**
Nb of obs.	1487
Nb of groups	600

This table reports the *F*-test results on the correlation of time-varying predictors with firm-specific fixed effects. Variables are defined in Table III.
Statistically significant at $*p < 0.1$, $**p < 0.05$, $***p < 0.01$ level (two-tailed).

show that the random effects method may produce estimates that are markedly different from fixed effects estimates, as it does not control for the stable, unmeasured characteristics of individuals.

Making use of a hybrid method that combines some of the virtues of the fixed effects and random effects methods[8] provides coefficient estimates identical to those generated by the fixed effects method alone, but with more robust standard errors and test statistics.

Following the approach taken by Allison (2005), the time-varying predictors for which I rejected the null hypothesis above (namely ''Return-to-assets'' and ''Privately held-shares-to-total-shares'' for the CER model, and ''Debt-to-assets'' and ''Privately held-shares-to-total-shares'' for the CSR model) are broken down into two parts representing within-firm, between-firm variations. Both components are used as predictors in the regression model. The coefficients for the within-firm components are identical to those used for classic fixed effects estimates. For the other time-varying predictors, I have added one constraint – that the mean and deviation coefficients must be equal. This is easily accomplished by using the original variables rather than centered variables.

In order for the error term to account for both within-firm and between-firm variations on the dependant variable, models were evaluated using the restricted maximum likelihood method. As the data set is unbalanced, White's (1980) method, which allows for heterogeneous variances and unstructured correlations, is used for producing robust standard errors and test statistics. Standard errors are clustered by both firm and time.

Results

The industry sector, legal systems, corporate size (i.e., assets), between-firm return-on-assets, and the percentage of privately versus publicly held shares all influence CER ratings with statistical significance over the period 2002–2007. In contrast, cash-to-assets and within-firm return-on-assets, as well as the relation of total debt to the total, have a statistically insignificant impact.

Table IX recaps the results relating to Eq. 1.

Regarding CSR, civil and German civil law countries, corporate size (i.e., assets) as well as the relation of between-firm total debt to total assets and the between-firm percentage of privately versus publicly held shares all have a statistically significant influence on CSR ratings over the period 2004–2007.

Table X reports the results relating to Eq. 2.

Discussion

This empirical analysis makes three distinct contributions. First, it contributes to the literature on regulation theory, national business systems, and varieties of capitalism, as well as to the literature on social and environmental issues in management, by demonstrating the influence of legal systems on corporate social and environmental responsibility. Second, it contributes to the literature on CR in the European markets by investigating the relationship between CR ratings and corporate financial performance in 16 European countries. Third, it shows the influence of financial structures on CR. In evaluating more broadly the links between CR ratings and financial structures, I assess competing theories and conclude that corporate visibility theory is more persuasive than slack resource theory in accounting for CR ratings. Results relating to the influence of the various industrial sectors on CER are also discussed.

Influence of legal systems on CR

The results of the mean tests and fixed and random effects models vary with regard to environmental and social issues.

Influence of legal systems on CER

Legal systems significantly influence corporate environmental ratings at the 0.01 significance level according to regression results from the fixed and random effects model presented above. The sign of both estimates, for common law countries and civil law and German civil law countries, is negative. These two variables are compared with Scandinavian findings; the sign and values of these estimates suggest that the ''Scandinavian civil law countries'' variable has a stronger positive influence on CER than the ''common law countries'' and ''civil law and German civil law countries'' variables do. The difference between estimates of the variables

TABLE IX

Fixed and random effects model – Eq. 1 – environmental ratings

Independent Variables	Estimate	Standard error	*t*-stat.
Intercept	396.33	138.32	2.87***
Civil and German civil law countries	−118.22	33.9362	−3.48***
Common law countries	−109.67	32.495	−3.37***
Per capita GDP	1.2095	0.8744	1.38
Total assets	64.9365	8.4694	7.67***
Cash-to- assets	−29.994	69.6335	−0.43
Within firm – return-on-assets	−0.6122	0.4334	−1.41
Between firm – return-on-assets	2.3314	1.221	1.91*
Total debt/total assets	−0.6893	0.4871	−1.42
Within firm – privately held shares %	−0.652	0.4246	−1.54
Between firm – privately held shares %	−1.8933	0.5339	−3.55***
Industry sectors	59.64	8.79	6.78***
Year 1	−180.22	16.3013	−11.06***
Year 2	−116.84	13.123	−8.9***
Year 3	−97.3711	12.1531	−8.01***
Year 4	−35.2931	8.9818	−3.93***
Year 5	−21.3519	5.7353	−3.72***
Nb of obs.	2870		
Nb of groups	645		

This table reports empirical results corresponding to the multifactor regressions formulated by Eq. 1: $ER_{it} = \alpha + LS1_i + LS2_i + \log(Assets_{it-1}) + CashA_{it-1} + ROA_{it-1} + DebtAt_{it-1} + PrivatelyHeldSh_{it-1}$ Per Capita GDP_{it-1} + Industry $Sector_i + \varepsilon_{it,}$ where ER_{it} is the environmental Rating on company i in year t; $LS1_i$ is the dummy that takes the value of 1 if company i is headquartered in a country whose legal system is based on common law and 0 otherwise; $LS2_i$ is the dummy that takes the value of 1 if company i is headquartered in a country whose legal system is based on civil and German civil law and 0 otherwise; $\log(Assets_{it-1})$ is the log of total Assets of company i in year $t-1$ (in millions); $CashA_{it-1}$ is the available cash-to-total-assets of company i in year $t-1$; ROA_{it-1} is the return-on-assets of company i in year $t-1$; $DebtA_{it-1}$ is the total-debt-to-total-assets of company i in year $t-1$; $PrivatelyHeldSh_{it-1}$ is the privately held-shares-to-total-shares of company i in year $t-1$; Per Capita GDP_{it-1} is the per capita gross domestic product in year $t-1$ of the country in which company i is headquartered, expressed in purchasing power standards and in relation to the EU average; and $Industry\ Sector_i$ is the industry Sector to which company i belongs to (five main sectors were defined). Variables are more precisely defined in Table III. Estimates, standard errors, and *t*-statistics are presented. Sample period: 2002:01–2007:12.

Statistically significant at $*p < 0.1$, $**p < 0.05$, $***p < 0.01$ level.

''common law countries'' and ''civil law and German civil law countries'' (respectively −110 and −118) remains very small.

Judging by mean test results, companies headquartered in Scandinavian civil law countries receive significantly higher average environmental ratings than their counterparts in either common law countries between 2002 and 2007 or civil law and German civil law countries between 2002 and 2006. From 2002 to 2007 (except in 2005 and 2006), the average CER ratings of companies headquartered in civil law and German civil law countries are significantly higher than those in common law countries. Hence, observed empirical results support the first hypothesis (1A), which states that environmental rating averages are higher for companies headquartered in Scandinavian civil law countries than for companies headquartered in other legal systems. However, these results do not support the second and third hypotheses (1B and 1C) based on voluntary disclosure. According to this study's empirical results, the environmental rating averages of companies headquartered in civil law and German civil law countries are not significantly lower than the

TABLE X

Fixed and random effects model – Eq. 2 – Social ratings

Independent variables	Estimate	Standard error	*t*-stat.
Intercept	955.04	147.41	6.48***
Civil and German civil law countries	−129.31	43.9678	−2.94***
Common law countries	−16.0742	36.5256	−0.44
Per capita GDP	−1.0946	0.9492	−1.15
Total assets	72.5808	10.4502	6.95***
Cash-to-assets	−42.4577	72.7196	−0.58
Return-on-assets	0.3146	0.5861	0.54
Within firm – total debt/total assets	0.2541	0.6983	0.36
Between firm – total debt/total assets	−3.1111	0.7837	−3.97***
Within firm – privately held shares %	−0.4578	0.4981	−0.92
Between firm – privately held shares %	−1.9337	0.608	−3.18***
Industry sectors	−13.2478	10.4109	−1.27
Year 3	−50.1846	19.2796	−2.6***
Year 4	−6.6332	8.6918	−0.76
Year 5	−3.8142	5.1467	−0.74
No of obs.	1487		
No of groups	600		

This table reports empirical results corresponding to the multifactor regressions formulated by Eq. 2: $SR_{it} = \alpha + LS1_i + LS2_i + \log(Assets_{it-1}) + CashA_{it-1} + ROA_{it-1} + DebtAt_{it-1} + PrivatelyHeldSh_{it-1}$ Per Capita $GDP_{it-1} +$ Industry $Sector_i + \varepsilon_{it}$, where SR_{it} is the environmental Rating on company i in year t; $LS1_i$ is the dummy that takes the value of 1 if company i is headquartered in a country whose legal system is based on common law and 0 otherwise; $LS2_i$ is the dummy that takes the value of 1 if company i is headquartered in a country whose legal system is based on civil and German civil law and 0 otherwise; $\log(Assets_{it-1})$ is the log of total Assets of company i in year $t-1$ (in millions); $CashA_{it-1}$ is the available cash-to-total-assets of company i in year $t-1$; ROA_{it-1} is the return-on-assets of company i in year $t-1$; $DebtA_{it-1}$ is the total-debt-to-total-assets of company i in year $t-1$; $PrivatelyHeldSh_{it-1}$ is the privately held-shares-to-total-shares of company i in year $t-1$; Per Capita GDP_{it-1} is the per capita gross domestic product in year $t-1$ of the country in which company i is headquartered, expressed in purchasing power standards and in relation to the EU average; and Industry $Sector_i$ is the industry sector to which company i belongs to (five main sectors were defined). Variables are more precisely defined in Table III. Estimates, standard errors, and *t*-statistics are presented. Sample period: 2004:01–2007:12.

Statistically significant at $\star p < 0.1$, $\star\star p < 0.05$, $\star\star\star p < 0.01$ level.

environmental rating averages of companies headquartered in common law countries. This could be explained by the fact that Innovest ratings are sufficiently in-depth to take into consideration hidden and private corporate behavior, as well as publicly announced policies and initiatives. ''Coordinated market economies'' and ''social systems of production'' (Hollingsworth and Boyer, 1997) are better at fostering corporate social and environmental responsibility than are ''liberal market economies'' (Hall and Soskice, 2001). This study's empirical results strongly support the claim that corporations are more likely to act in environmentally responsible ways if there are strong and well-enforced state regulations in place to ensure such behavior (Campbell, 2006). In this perspective, on a continuum of regulation intensity relating to environmental issues, common law countries would stand at the lower end, and Scandinavian civil law countries at the higher.

Influence of legal systems on CSR

Unlike CER, CSR is not as obviously affected by legal system structures. The fixed and random effects model presented above shows that civil law and German civil law countries have a significant effect

on CSR, unlike common law countries. Where the level of influence in common law countries is relatively low (−16), the impact on CSR of civil law and German civil law countries is strongly negative (−129) in comparison with Scandinavian civil law countries.

As for the mean test results, they indicate that the CSR rating averages are largely the same in all three legal systems. A possible explanation for this very unclear pattern of influence follows.

Regulatory processes – as well as normative and cognitive ones – should lead to more standardized and rationalized concerns regarding environmental issues (Meyer, 2000). As environmental concerns are similar in all Western countries, the comparison of rating averages between country groups could be made on a single continuum, i.e., with more and less significant environmental issues judged in accordance with similar standards across all three groups.

Although human rights concerns are relatively similar in all Western countries (Meyer, 2000), this is not the case for labor issues. Liberal market economies exhibit largely deregulated labor markets in which relative wages demonstrate a significant reward-setting flexibility. Coordinated market economies promote employee cooperation and collective agreements in wage moderation (Boyer, 2005; Whitley, 1998). More specifically, within common law countries, decentralization and individualization strongly shape employment and wage formation. Within civil law and German civil law countries, one observes a clear institutionalization of the rules on employment, working hours, and even wages and social benefits, while in Scandinavian civil law countries, collective bargaining is centralized at the national level, under the constraint of short- and medium-term competitiveness (Boyer, 2005). According to Boyer (2005), such strong differentiations can be observed in almost any component of the "wage–labor" and the "skill–labor" nexus. Those distinct logics and mechanisms – leading to diverse balances – are hardly comparable and may explain why it is so difficult to assess the influence of legal systems on CSR ratings.

A second interpretation of the results showing the weak influence of legal systems on CR could be a progressive convergence, more advanced for social than for environmental issues, resulting in the CER results for the three country groups exhibiting greater differences than the CSR results. This argument proceeds from a more general debate about the convergence (as opposed to continuing diversity) of organizational practices in varying national settings.[9]

In the field of governance, other empirical studies support this convergence argument. In an IB-based study of 150 corporations from the UK, Germany, and Canada, Bondy et al. (2004, 2008) found evidence of some convergence of the German national business system model [i.e., the network-oriented model of "Rhenish capitalism," (Albert, 1991)] toward the UK's "Anglo-Saxon model of market-oriented shareholder capitalism." Similarly, Beyer and Hassel (2002), in a study examining the 100 largest companies in Germany from 1992 to 1998, revealed the emerging convergence of German corporate governance practices with Anglo-Saxon standards, guided by legal changes that encouraged the transparency and liberalization of financial markets. Nonetheless, Beyer and Hassel's study found no evidence of convergence in the relationship between management and employees.

In fact, the convergence argument relates better to governance than to other social issues. Since 1997, in the field of human resources, the EU has implemented a series of new policies to coordinate national reforms in employment and inclusion policies and in pension and health care systems (De la Porte et al., 2001). These are mainly "soft" policies, based on choosing common goals, objectives, and guidelines, and diffusing and comparing the results, ideas, and experiments of each member state. Although member states share many common objectives, they approach the conception and arrangement of CSR in fundamentally different ways (De la Porte et al., 2001). Whitley (1998), considering employer–employee relations and work systems, argues that internationalization has increased competition between national business systems and their associated institutions, rather than establishing a new cross-national system. In the same vein, Boyer (2005), analyzing labor market institutions, explains that "there is no clear force that would bring about the convergence of various capitalisms." Ferner et al. (2001) produced empirical evidence to show, in a 1996–1998 study based on semi-structured interviews with staff at 46 English and Spanish subsidiaries and 15 German headquarters, that despite

pressure on German companies to adopt standard ''Anglo-Saxon'' business practices in human resources (policies for appraisal, performance, management development, and explicit, formalized business objectives), traditional German business practices persist and have a strong influence, resulting in a distinctively ''German'' approach.

A third element should be added. The problem of bias could not be excluded, especially when considering CSR ratings that reflect governance and human resources as well as human rights issues. Whereas companies in common law countries are expected to perform better on governance issues (for empirical evidence, see Venanzi and Fidanza, 2006), companies in civil and German civil law countries and Scandinavia are traditionally considered to perform better on human resources issues (Jones and Haigh, 2007). This leads to zero sum ratings, with legal systems influencing corporate social ratings but achieving similar social rating averages.

Influence of economic conditions on CR

More developed countries generally exhibit a correspondingly higher incidence of CR policies (Cannon, 1994; Jones, 1999; Vogel, 1995). This is intuitively comprehensible: a society first needs to satisfy its members' basic needs for adequate food, shelter, and the like before it can address higher-level needs in areas such as self-actualization at work, governance, and long-term environmental sustainability (Jones, 1999). Nonetheless, as economic conditions are similar in all European countries, these conditions, as measured by per capita GDP, do not significantly influence corporate environmental or social responsibility ratings.

Influence of financial structures and financial performance

Corporate visibility – influence of size

Firm size is clearly the main differential between more and less environmentally and socially responsible companies. Hypothesis 2 is confirmed for both social and environmental ratings at the 0.01 significance level. The relationship between CER (CSR) and size is positive and the values of the estimates are the highest after the legal system and intercepts estimates. These results support previous studies (see, for instance, Burlingame and Frishkoff, 1996; Johnson, 1966).

These results strongly support the theory of corporate visibility. As they grow, firms attract more attention from external constituents and need to respond more visibly to stakeholder demands (Burke et al., 1986).

With a slight change of perspective, the explicit/implicit distinction proposed by Matten and Moon (2008) finds an echo here. In their study, ''differentiation focuses, first, on the language corporations use in addressing their relation to society: companies practicing explicit [CR] use the language of '[CR]' in communicating their policies and practices to their stakeholders while those practicing implicit [CR] would normally not describe activities this way. Second, [their] differentiation also exposes differences in intent: corporations practicing implicit [CR] might conduct similar practices to those practicing explicit [CR]. Implicit [CR], however, is not conceived as a voluntary and deliberate corporate decision but rather as a reaction to, or reflection of, the corporations' institutional environment while explicit [CR] is the result of a deliberate, voluntary, often strategic (Porter and Kramer, 2006) decision of the corporation.'' This distinction may apply equally well to large and small companies. Large companies develop voluntary and deliberate CR policies and practices and sophisticated approaches to communication. Small companies might develop similar practices but without clearly establishing, promoting, or communicating them.

It should nonetheless be noticed that the link between visibility and size observed in this study might change with rapid advances in information and communications technology, and the relative increase of public awareness regarding CER and CSR issues. As information spreads faster and reaches a broader audience, smaller companies may become more visible and need to enhance their reputations for environmental and social responsibility. If so, one might wonder whether the relationship between size and corporate commitment to environmental and social policies will persist in the future.

Slack resource theory – corporate performance

This hypothesis relates to a question that is widely debated in the US, but largely ignored in Europe,

where there is little empirical evidence: whether the level of CR is influenced by corporate performance.

Many studies have found positive links between corporate performance and CR in the US market (see for instance, Aupperle et al., 1985; Cochran and Wood, 1984; McGuire et al. 1988, 1990; Waddock and Graves, 1997). Our research shows that CER in Europe positively depends on the between-firm return-on-assets classified as variable under the fixed and random effects model. When a firm's return-on-assets is higher than its own average, the CER rating is generally not affected. However, over the period studied, the difference in the averages of return-on-assets between firms does influence CER ratings. Economic significance is estimated at 2.33, meaning that a 10% increase in the average of return-on-assets gives rise to a 2.3% increase in CER ratings. Hence, although significant, the influence of return-on-assets on CER remains relatively limited. The cash-to-assets variable had no significant impact on CSR.

These results offer some support to the slack resources theory. ''Firms with slack resources potentially available from strong financial performance may have greater freedom to invest in positive [CER]. Thus, it may well be that firms with available resources may choose to spend those resources on 'doing good by doing well,' and that those resource allocations may result in improved [CR] overall'' (Waddock and Graves, 1997). In other words, firms that do not perform well financially may have little ability to make investments in CER, while those doing well financially have resources to spend in ways that may have long-term strategic benefits (Waddock and Graves, 1997).

Nonetheless, the results of this enquiry do not support the slack resource theory: corporate performance does not clearly influence CSR. The results show slack resource theory to be neither sufficient nor particularly persuasive in explaining CR levels. It is questionable whether there is a clear link between doing good and doing well in the European market.

Slack resource theory – cash-to-assets

There is an abundant and controversial literature debating the available cash notion (Cleary et al., 2007; Fazzari et al., 2000; Kaplan and Zingales, 1997, 2000).

According to slack resource theory, the more slack resources a company has, the more likely it is to invest in non-core programs. Seifert et al. (2003), who recognized that cash resources, incorporating the idea of discretionary funds, could enable corporate investment in charitable and other purposes, found only a weak positive relationship between cash resources and corporate giving.

This study finds no link between CER or CSR ratings and available cash. The fixed and random effects model shows a significant influence on CER only of the deviation cash-to-assets variable, a within-firm variation. These results provide no support for the slack resource theory as applied to the cash-to-assets variable; Hypothesis 3A cannot be validated.

It is intriguing, although non-significant, that the relationship between CER/CSR and available cash is negative. It is possible that by spending more money on society and the environment, responsible firms increase operational expenses and deplete their cash reserves.

Information asymmetry theory: the influence of capital structure – privately versus publicly held shares

This study provides evidence to support the hypothesis that capital structure significantly influences both CER and CSR.

In both cases, the results of the fixed and random effects model suggest that the between-firm privately versus publicly held shares variable has a significant impact on CER and CSR (at a 0.01 significance level) while the within-firm variable does not. In other words, when a firm's ratio of privately to publicly held shares is above or below its own annual average, there is no impact on CER and CSR ratings. However, over the whole period studied, the fluctuating average values of privately versus publicly held shares do impact the CER and CSR ratings of firms. Therefore, these results provide some support for Hypothesis 2.

For both, the sign of the significant relationships is always negative, indicating that companies with a greater number of publicly held shares are more inclined to commit themselves to social and environmental activities.

Companies with more privately held shares may have stronger short-term profit objectives and fewer social and environmental concerns than companies with more publicly held shares. The first results of a work-in-progress study by Barnea and Rubin (2006) carried out on US corporations are proving similar to my own. They have found a negative correlation between privately held shares and CR, suggesting that insiders benefit personally from their association with firms that have high CR ratings. However, when insiders own a large part of the firm, they may worry that CR expenditure will reduce firm value; insiders may limit CR investment because they do not wish to bear the cost of corporate philanthropy or outreach.

Publicly held shares may also impose a certain number of obligations on companies, in particular in terms of social and environmental disclosures and requirements.

Nonetheless, the values of the estimates remain relatively small. Although statistically significant, "privately versus publicly held shares" is not the variable that most influences CER and CSR.

Information asymmetry theory: the influence of capital structure – debt versus capital

Does debt influence CR? These results show that the total-debt-to-total assets variable has a partial but significant effect on CER and CSR.

The fixed and random effects model reveals that the debt-to-assets variable has no significant impact on CER. However, the between-firm debt-to-assets variable does have a statistically significant influence on CSR. As noted with the privately versus publicly held shares variable, a debt-to-assets ratio above or below the firm's annual average has no impact on CSR ratings. Over the whole period studied, however, differences in the averages of firms' debt-to-assets ratios do impact CSR ratings. In common with the privately vs publicly held shares variable, the values of the estimates for debt-to-assets are relatively small. The debt-to-assets ratio and the privately vs publicly held shares variable have less influence on CR than do legal systems or total assets.

While the results on significance are unclear, those tracking the sign of the relationship of debt to assets on CER and CSR are unambiguous. The sign of the relationships is negative. Hence, private capital and bank credit could be considered as more opaque than financing via the market (Boot and Thakor, 1997).

Barnea and Rubin (2006), in the study mentioned above, found a negative correlation between the level of debt and CR. Consistent with Jensen (1986) and Zweibel (1996), they explain the negative relationship between CR and debt by considering that CR investments could be restricted when firms have high interest payments. Although debt holders do not have voting rights, firms do raise additional debt from creditors who may have the power to influence decisions.

Influence of industrial sectors on CER and CSR

The results show a strong relationship between CER and the various industrial sectors, and support earlier findings that industry differences are an important determinant of CER (see for instance Derwall et al., 2005). Depending on the environmental impact of their sectors, corporate environmental policies will be under more or less scrutiny; it will be correspondingly difficult for them to achieve positive environmentally responsible outcomes. While industrial sectors have an impact on CER ratings, they do not significantly affect CSR ratings.

Limitations and future research directions

In this study, I have developed and tested hypotheses relating to the influence of legal systems and financial resources on CR. First, my findings demonstrate that legal systems influence both corporate social and environmental responsibility, although the differences between the CR rating averages of the three country groups are clearly statistically significant only in relation to the environment. Second, corporate size is more important than extra cash or corporate performance (both regarding the significance level and the values of the estimates) in influencing levels of CR. Large companies tend to be more visible, and society expects them to behave in a socially and environmentally responsible manner regardless of financial performance or available cash. Third, this study provides evidence to support the hypothesis that capital structure significantly influences CR. Results show that companies with a greater number of publicly held shares and a lower percentage of debt are more likely to commit themselves to social and environmental activities.

Further in-depth investigations might be pursued. For instance, a study of companies in the San Francisco Bay area (Burke et al., 1986) found that not only the size but the age of a company influences its commitment to CR. While the age variable was not available for all the observations in the sample of this study, it would be interesting to collect this information and to analyze the impact of firm age on CR in Europe.

Control variables such as internationalization (Sullivan, 1994) could also be added. Whitley's analysis (1998) suggests that companies' levels of internationalization should not significantly alter these results. According to Whitley (1998), "the conditions required for significant changes to take place in the nature and behavior of firms as a result of expansion of their operations abroad are so stringent that present patterns of internationalization are unlikely to generate step changes in the characteristics and strategies of leading firms in most economies. This is not to say that firms never alter when they internationalize (…) but to emphasize that they are unlikely to change their central characteristics so radically that they become different kinds of economic actors. Thus, modifying some labor management practices in some foreign subsidiaries or developing closer supplier links in Japan does not, in this view, signify significant change in the control and strategies of, for instance, US corporations." The increase in international market competition and corporate pressures through the end of the twentieth century and the beginning of the twenty-first suggests the need to review Whitley's conclusions using contemporary data.

This study could also be expanded to include other economic and legal systems (Eastern European, North American (including Canada), and Asian).

Analytic precision could be improved by taking into consideration the ratings of more precise components of CER and CSR rather than the constructs resulting from those components. This would be especially interesting if several distinct issues of CSR were examined, such as corporate governance, human resources, and human rights protection policies. Although analyzing the different components of CER and CSR would yield complex results that might be difficult to interpret, this study has not considered more precise components because of the lack of sufficient data.

Finally, as Campbell (2006) reminds us, "because institutions are settlements, it follows that the institutional terrain within which corporations operate is not static. There are dynamic pressures that ebb and flow, causing this terrain to shift over time." It will be interesting to track these results and to see how they evolve during the years ahead.

Notes

[1] Over the past few years, the literature has tended to equate the terms "financial structure" and "capital structure." Although financial structure includes capital structure, its original sense is much broader. The concept of financial structure assembles elements from both the asset and the liability side of balance sheets (Chudson, 1937). Its definition is generally adapted to the specific context of its use. In this study, financial structure refers to assets and cash-to-assets, as well as debts-to-assets. The measurement of financial structures is based on individual company accounts data, i.e., on balance sheets.

[2] Liberal market economies include common law countries. According to Hall and Soskice (2001), national economies can be compared along a spectrum that has, at one extreme, liberal market economies (in which firms coordinate their activities primarily via hierarchies and competitive market arrangements) and, at the other, coordinated market economies (in which firms depend more heavily on non-market relationships to coordinate with other actors and construct their core competencies).

[3] The correlation statistics were carried out for each year. The results remain similar over the whole period studied and are available upon request.

[4] To address concerns about a potential endogeneity bias, I looked at the influence of CR on return-on-assets based on a similar methodology. It turned out that CR has no influence on corporate performance measured by return-on-assets under the present longitudinal analysis. It was then decided that a simultaneous equations methodology was not relevant here. (The results are available from the author on request.)

[5] The models were also run with "Per capita GDP" defined as a country's GDP per capita in US$. The results obtained remain similar to the ones obtained with "Per capita GDP" defined as a country's GDP per capita expressed in Purchasing Power Standards and in relation to the EU average.

[6] To further address the potential industry sector effect, I looked more specifically at the influence of each

industry sector (IS) on CR based on the model design presented here. To that end, I first created five dummy variables based on the five industry sectors identified in this study. I subsequently created new variables based on the following models:

New variable IS 1
= previous variable ⋆ dummy industry sector 1
New variable IS 2
= previous variable ⋆ dummy industry sector 2
New variable IS 3
= previous variable ⋆ dummy industry sector 3
New variable IS 4
= previous variable ⋆ dummy industry sector 4
New variable IS 5
= previous variable ⋆ dummy industry sector 5

I then ran a panel data analysis with those industry sector-specific variables. The results obtained provide five parameters for each of the variables used in the main panel data analysis presented in the core of this article, one corresponding to each of the five industry sectors identified. The density of these results makes them cumbersome to analyze. The results show, for instance, that common law countries have a statistically significant influence on environmental ratings with regard to all industry sectors, with the exception of industry sector 3 (i.e., airlines, communications equipments, computers, construction, and electronic equipment companies). Civil and German civil law countries have a statistically significant influence on environmental ratings with regard to all industry sectors, with the exception of industry sector 2 (i.e., retail trade, biotechnology, and telecommunication services companies). An analysis that focused on regulation variances with regard to industry sector intensity would be needed to better understand these particular results. In order to develop a more precise analysis with regard to industry sectors, future research should focus on specific industry sectors only. This would also take into consideration industry specific regulations and contribute to a better understanding of the nuances of the impact of legal systems on CR.

[7] Cross-sectional evidence could also be useful. However, it accounts only for differences in variables between subjects and not for changes in variables over time. It was nonetheless computed. The results are very similar to those presented in this article and are available from the author on request.

[8] The fixed effect models – with only the time-variant predictor – and the random effects models were nonetheless computed. The results obtained are similar to the ones presented in this article and are available upon request.

[9] Although less relevant here, the convergence debate also concerns CER issues. In the context of regulation, both EU level and government-specific regulations do influence CER, leading not only to progressive harmonization but also to substantive differences that persist between European countries (Haigh and Jones, 2006; Vogel et al., 2005).

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The UK Alternative Investment Market – Ethical Dimensions

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ABSTRACT. The UK Alternative Investment Market (AIM) was launched in 1995 and has been a great success with over 1200 companies now listed. In this article, we examine the development of AIM as it reaches its 15th year and discuss the potential pitfalls of the light touch regulation that is one of the attractions of AIM and identify potential corporate governance and ethical issues that may arise as a result of light touch regulation. We examine the central role of the nominated advisor (NOMAD) and draw on the findings of in depth interviews with 25 AIM participants including AIM company directors, institutional investors, nominated advisors and brokers. We highlight the influence of the NOMAD on these participants and potential governance and ethical implications. We also discuss some of the concerns that AIM participants have about the market. We examine some of the recent scandals on AIM to determine why these scandals occurred – were they, for example, attributable to corporate governance weaknesses? Finally, we offer some concluding comments to discuss the future of AIM. The findings of the article have important implications for investors and policymakers alike.

KEY WORDS: Alternative Investment Market, corporate governance, ethical issues, institutional investors, junior stock exchanges, second tier markets

Introduction

The UK Alternative Investment Market (AIM) was launched in 1995 and has been a great success with over 1200 companies now listed. 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 successfully exported its model to both Italy and Tokyo. Central to both is the concept of the NOMAD (nominated advisor), a unique feature of AIM.

The NOMAD's role is a core concept of AIM. The London Stock Exchange (LSE) states that every company seeking admission to AIM must appoint a NOMAD being

> a full-time corporate finance adviser[1] approved by the Exchange to act in this capacity. The NOMAD plays a key role at admission, assessing the company's overall appropriateness and suitability for AIM and assisting it throughout the flotation process. Once on the market, the company must retain a NOMAD at all times to help meet its continuing obligations, maximise the benefits of its AIM quotation and deal with market issues as they arise.

Moreover, the LSE recognises that

> the outstanding success of AIM since its launch in 1995 is largely due to the dedication and professionalism of NOMADs, making them integral to the market.

The motivation for this article with its focus on the role of the NOMAD is directly connected to ethics as the NOMAD – unique to AIM – plays a central role in the lifecycle of an entrant to AIM. They guide the company through the admissions process and maintain a continuing relationship with the company thereafter. It is this special relationship between the AIM company and the nominated advisor that facilitates AIM's lighter regulatory touch. Hence, the NOMAD is in a position of trust from a number of view points, that is, of the regulatory authorities, the AIM company and its shareholders/stakeholders. If a NOMAD is not performing its role as a trusted advisor as envisaged then there are ethical implications,

and indeed wider financial and reputational implications.

The lighter regulatory touch means that companies coming to AIM are not examined in as much detail as entrants to the main market. This means that companies which do not have sound corporate governance structures or unethical practices may be able to join AIM if the role of the NOMAD is not being carried out effectively. There have been instances of companies with poor governance which have nonetheless managed to join AIM and some of these have subsequently been at the centre of financial scandals or collapses on AIM, for example, Sky Capital, Torex Retail, Langbar International, Sibir Energy, Max Petroleum, Lonzim and Regal Petroleum (the latter is discussed in more detail later in the article). Such scandals and collapses may lead to a lack of confidence in AIM as a whole and also reflect badly on the UK markets and regulatory scene more generally.

The primary objective of this research is to examine the central role of the NOMAD and its influence by ascertaining the views of AIM company directors, AIM investors and other AIM participants about the role of the NOMAD highlighting some of the potential implications for corporate governance and ethical issues. In this context, we also highlight potential pitfalls of light touch regulation which may have an impact on corporate governance and ethical issues in AIM companies and we report on some recent AIM scandals and identify to what extent shortcomings in corporate governance may have attributed to these.

Face-to-face interviews were carried out with 19 AIM company directors; four institutional investors who invest in AIM companies; and two nominated advisors (NOMADs)/brokers of AIM companies.[2] The interviews provide a rich source of material for discussion and insights into the AIM market. In this article, we report on the findings relating to the NOMAD's role as this role is unique to AIM and plays a central role in the AIM model. Our findings indicate that directors of AIM companies seem to have had a mixed experience with their NOMAD, with some finding that their NOMAD has given support and advice throughout their time on AIM whilst others have found that their NOMAD has not been supportive post joining AIM and that they have had to seek advice elsewhere on corporate governance and other matters. The institutional investors interviewed did not tend to place much emphasis on which NOMAD had advised a company when it came to investing in an AIM company but if they had had a previous bad experience with a particular NOMAD, then they would look rather more carefully before investing in a company advised by that particular NOMAD. The NOMAD/brokers themselves appear to place more emphasis on their broking role rather than their NOMAD role; however, in terms of an AIM company's corporate governance, they recognise that companies must have certain minimum levels of corporate governance in order to be attractive to investors.

The article is structured as follows. The next section provides some background information about the development of the AIM and its lighter regulatory touch to set the context for this article. There follows a literature review of published work on the AIM; this section provides a theoretical basis for the development of our main hypotheses. We then discuss some of the recent shortcomings and scandals on the AIM. We next discuss the methodology, and the findings of interviews carried out with AIM company directors, institutional investors, and nominated advisors (NOMADs)/brokers. Finally, we consider the corporate governance and ethical issues emerging from the findings of the research, recent regulatory developments, the implications for policymakers and other interested parties, and possible future areas of research.

The Alternative Investment Market

The UK AIM was launched in 1995 and now has over 1200 companies listed. From Table I, it can be seen that there was a total of 1268 companies at the end of February 2010, of which 1030 were UK companies and 238 were international companies. The proportion of international companies joining AIM has increased over time and since 2006, international companies have generally 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

TABLE I

AIM 1995–2010

	Number of companies			Market value (£million)	Number of admissions		
	UK	International	Total		UK	International	Total
19/06/1995	10	0	10	82.2			
1995	118	3	121	2382.4	120	3	123
1996	235	17	252	5298.5	131	14	145
1997	286	22	308	5655.1	100	7	107
1998	291	21	312	4437.9	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	1021	31,753.4	294	61	355
2005	1179	220	1399	56,618.5	399	120	519
2006	1330	304	1634	90,666.4	338	124	462
2007	1347	347	1694	97,561.0	197	87	284
2008	1233	317	1550	37,731.9	87	27	114
2009	1052	241	1293	56,632.0	30	6	36
2010 to Feb	1030	238	1268	58,343.7	7	1	8
Launch to date					2587	519	3106

Source: London Stock Exchange: AIM Statistics (2010).

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 II. The most common market value for companies is in the range £10 million–£25 million with 286 companies having a market value in this range. There are 267 companies with a market value of more than £50 million accounting for 21.1% of the companies on AIM with a combined equity value of £44,549.9 million (76.4% of the AIM companies' equity value). However, the vast majority of AIM companies (986 companies) have a market value of less than £50 million with 792 of these companies having a market value of less than £25 million.

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…..there is no minimum market capitalisation, no minimum trading record and no minimum percentage of shares in public hands.

AIM membership rules therefore encourage a wide variety of companies to join whilst capital raising and membership costs are kept to a minimum. They also mention that

> 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.

The OECD (2009) discuss the role of stock exchanges in corporate governance and they cite the

TABLE II

Distribution of companies by equity market value

AIM (UK and International)				
Market value range (£million)	No. of companies	%	Equity market value (£million)	%
Over 1000	2	0.2	2261.3	3.9
500–1000	10	0.8	7008.0	12.0
250–500	36	2.8	11,469.6	19.7
100–250	102	8.0	15,599.8	26.7
50–100	117	9.2	8211.2	14.1
25–50	194	15.3	6943.2	11.9
10–25	286	22.6	4651.0	8.0
5–10	194	15.3	1415.8	2.4
2–5	193	15.2	646.4	1.1
0–2	119	9.4	137.5	0.2
Unvalued securities	3	0.2	–	–
Suspended	12	0.9	–	–
Total[a]	1268	100.0	58,343.7	100.0
More than £50 million	267	21.1	44,549.9	76.4
Less than £50 million	986	77.8	13,793.8	23.6
Less than £25 million	792	62.5	6850.6	11.7

Source: London Stock Exchange: AIM Statistics (2010).
[a]Excluding fixed interest securities.

different governance regimes that exist in some markets for certain tiers pointing out that

> AIM-listed companies are subject to lighter governance requirements that seek to address more basic shareholder protection issues (i.e. shareholder approval of significant transactions).

Becht et al. (2008) highlight how the deregulation of corporate law in the European Union (EU) affects the decision of entrepreneurs of which country they wish to incorporate in. They analyse foreign incorporations in the UK where incorporation of limited liability companies can be effected at a lower cost than in many other EU countries and they find evidence of a 'significant inflow of private limited companies from all EU Member States into the UK' and that 'relatively small differences in minimum capital requirements make a large difference in the rate of new company formation'.

In the context of the potential impact of a lighter touch regulatory environment, Jenkinson and Ramadorai (2010) analyse a sample of 218 companies that move to AIM from the Main Market, and 56 companies which move in the other direction, that is from AIM to the Main Market. AIM has a lighter regulatory environment and so many companies have chosen to switch to stock exchanges with lower regulatory requirements. They analyse the consequences of switching for smaller quoted companies and find that firms that switch to lighter regulation experience negative announcement returns of approximately 5%. However, it is interesting to note that the initial price reactions are reversed after the actual switch takes place and these firms then experience a longer-term upward drift in stock returns, which they relate to improved operating performance.

Colombelli (2010) investigates the relationship between firm performance after an Initial Public Offering (IPO) and its entrepreneurial orientation. For his sample of entrepreneurial firms, he focuses on companies that went public on AIM during the period 1995–2006. His findings confirm a positive impact of entrepreneurial orientation on investors' valuation and he states that the results 'underline the relevance of secondary markets, such as the AIM, as

a valuable alternative to traditional financial institutions in providing capital to small and entrepreneurial companies'.

The next section of the article reviews some of the literature on governance and ethics highlighting how the two are interlinked and setting the scene for the review of the literature on corporate governance and corporate social reporting (CSR) in AIM companies from which we develop the hypotheses that we subsequently test.

Literature review

Governance and ethics

There has been an increasing trend to link corporate governance and ethics in recent years. The Treadway Commission (1987) recommended that corporations have codes of conduct to help deter financial fraud but it also emphasised the 'tone at the top' highlighting that the ethics of directors and management are key to establishing an effective corporate culture which embraces ethical behaviour. Rockness and Rockness (2005) stated that a strong ethical corporate culture together with, *inter alia*, appropriate controls and laws will help ensure ethical, transparent financial reporting. Kalbers (2009) reviewed the influence of corporate governance and the role of ethics and behaviour in the context of earnings management and fraudulent financial reporting. He stated that

> codes of conduct are just one of many components within an organization that may influence ethical behaviour. There are numerous formal and informal organizational controls that influence ethical behaviour, which also interact with personal ethics and self control (Cassell et al., 1997).

The link between corporate governance and ethics is not limited to more developed markets. Lin (2010) discusses the internal and external mechanisms of Taiwan's corporate governance and emphasises the importance of business ethics highlighting how the upholding of business ethics can help prevent the occurrence of corporate governance dilemmas.

Holder-Webb et al. (2008) point out that the materiality and content of non-financial disclosures, including those relating to governance, is

> at present uninformed by input from the actual users of this information. The potential costs of engaging in this type of ad-hoc policy formulation are large. The indication is clear: the moment for developing a theory of governance and ethics disclosure is overdue.

An earlier paper by Bonn and Fisher (2005) made an interesting contribution to this area as they identify three areas of potential weakness in incorporating business ethics into corporate governance that they say are also evident in the development of strategic planning. They state that

> if an organisation's commitment to business ethics as identified in its corporate governance framework is to have a lasting impact, the ethical principles must be an integral part of how the organisation operates and be reflected in the organisation's code of ethical conduct, formal and informal controls, policies, processes and procedures.

Furthermore, the board and management need to behave in a way which is consistent with the ethical standards they set for the firm. Mansell (2008) in a paper exploring how the ideas of the French philosopher Levinas might offer insights into corporate governance and regulation, states that

> whilst the sort of ethical codes used by business can serve as an escape from real responsibility, they can at the same time (through their flexible and voluntary nature) offer the possibility for a degree of alignment with responsibility that a mandatory framework cannot capture.

From the above discussion of the literature, it is clear that governance and ethics are closely linked. The ethics of individuals will be fundamental to enabling a corporate culture that has ethics at its core and facilitates good governance. The comparison of an unethical director, or board of directors, may be made with a 'bad apple' causing rot to spread throughout a firm's actions in the same way as a bad apple can affect a whole barrel full. The directors' unethical behaviour can have a detrimental impact not only on the corporate governance and ethics of their firm, but also on the market more generally bringing it into disrepute and leading to a lack of confidence in the market. All too often it seems that a small number of unethical individuals act in ways which undermine their firm and may lead others to act unethically.

AIM is no different to other markets in this respect – to help ensure good corporate governance and ethical behaviour, it depends on the directors of AIM companies acting ethically and having the appropriate corporate governance in place. However, as mentioned earlier, the NOMAD plays a key role in bringing the company to market and subsequently advising the directors on corporate governance and other matters. AIM company directors are dependent on their NOMAD in a way that directors of other companies are not. Therefore, the NOMAD needs to be ethical and knowledgeable and play its trusted role to the full to facilitate AIM companies having sound corporate governance and being run ethically.

The next section of the literature review discusses the corporate governance and CSR of AIM companies providing insights into AIM companies' policies and practices in these areas.

AIM corporate governance and CSR

There has been relatively little academic research into AIM companies although there are a few studies looking at corporate governance and corporate social responsibility in AIM companies. Mallin and Ow-Yong (1998) found that AIM companies brought onto the market by a nominated advisor who also acts as nominated broker paid more attention to the Cadbury Code on corporate governance. Their findings suggested that the nominated advisor cum broker was concerned about their reputational risk and hence expected their AIM client companies to follow the Cadbury Code more closely.

In a later study, Mallin and Ow-Yong (2008) analysed the annual report and accounts of 300 AIM companies for the period ending between October 2005 and September 2006.[3] From the detailed analysis of the corporate governance statements in the annual report and accounts, it was found that the basic elements of good governance practice such as including a corporate governance statement, the presence of board sub-committees, identifying who the directors are and their responsibilities, and splitting the role of chairman and CEO are disclosed by the majority of the sample AIM companies. The Quoted Companies Alliance (QCA) Guidelines (2005) on what independence means and having at least two independent non-executive directors (NEDs) were moderately adopted. The level of disclosure was low for aspects of governance that reveal more personal matters like evaluating directors' performance and their attendance at their board meetings. Overall, Mallin and Ow-Yong (2008) found that the sample AIM companies disclosed less corporate governance practice than expected from the recommendations stated in the QCA Guidelines. This indicates that AIM companies can and should increase their disclosure levels especially in the areas that influence investors' decisions like the issue of NEDs' independence and reporting on the formal evaluation of directors' performance. A recent report published by Baker Tilly and Faegre & Benson (2009) surveyed 116 AIM companies and 55 AIM investors. They report that

> most institutional investors (58%) say they [standards of corporate governance in AIM companies] are not good enough. Fewer than 40% consider them even 'acceptable'.

Colombelli (2009) investigated the post-IPO performance of 665 listed firms on AIM over the period 1995–2006. He found that CEO educational level and age are critical to business' performance in AIM companies stating that 'educated and young CEOs positively influence firm growth'.

Mallin and Ow-Yong (2010) examined the relationship between company level and market-related variables, and the disclosure level of voluntary corporate governance practice in AIM companies. The results of their regression analysis indicate that young AIM companies are more likely to show a higher disclosure level. They also find that company size, board size, presence of turnover (i.e. the company generates revenue income from business activities), and being formerly listed on the Main Market are positively associated with the adoption, and disclosure, of recommended governance practice. Significant ownership by institutional investors and directors, the type of nominated adviser or audit firm does not appear to be influential in determining the disclosure level. However, their study shows that more highly geared AIM companies tend to make less disclosure. Overall, their findings suggest that the internal dynamics of AIM companies exert a greater influence on voluntary corporate governance disclosure than do market-related factors.

In relation to social reporting by AIM companies, Parsa and Kouhy (2007) analysed the disclosures of social information by 90 AIM companies. They found that the sample AIM companies reported social information irrespective of their limited resources and treated social reporting as a tool to establish and retain their corporate reputation.

AIM companies may often have a high degree of family ownership and influence. However, corporate governance is just as important for these firms. Cadbury (2000) states that establishing a board of directors in a family firm

> is a means of progressing from an organisation based on family relationships to one that is based primarily on business relationships…..once the firm has moved beyond the stage where authority is vested in the founders, it becomes necessary to clarify responsibilities and the process for taking decisions, pp. 24 and 25.

The above papers indicate some of the corporate governance issues facing AIM companies. Whilst they are expected to comply with fairly rigorous corporate governance best practice, they may likely have problems with recruiting and retaining an appropriate number of independent NEDs and hence with establishing board committees with an appropriate number of independent NEDs. Splitting the roles of Chair and CEO may also prove problematic for many AIM companies. The NOMAD is in a unique position to advise companies coming to AIM and throughout their time on AIM, on the corporate governance and other requirements, and so is in a position to influence the directors throughout the company's lifecycle on AIM.

Carcello (2009) examines the importance of corporate governance in ensuring reliable financial reporting and examines the roles of individuals involved in the governance process from the perspective of ensuring the common good. His discussion encompasses the roles of senior management, the board of directors, the audit committee, and the external auditor. There are, of course, other players or actors involved in the governance process and, in relation to AIM companies, one of particular importance is the nominated advisor (NOMAD), whose role is discussed below as a central player to AIM. Carcello points out that 'the good governance of business entities contributes to the common good of society', we therefore view the role of the NOMAD in helping ensure good governance in AIM companies as having ethical dimensions although these may be difficult to crystallise, as Carcello mentions 'as an academic discipline, corporate governance is still in its infancy, and the intersection between corporate governance and ethical behaviour is even more gestational'.

The review of the literature has highlighted the corporate governance and related ethical issues that AIM companies may face; it has highlighted that AIM has much lower listing requirements than the Main Market and that shareholders and other stakeholders may therefore benefit from the additional assurance provided by appropriate governance structures and disclosures. As mentioned previously, AIM is unique in having the NOMAD as a key feature of the market and the NOMAD plays a crucial role in advising the company during the admittance procedure to AIM and afterwards. Firms joining AIM find themselves in a new situation whereby they are accountable to their shareholders and other stakeholders who will be looking not just at their financial performance, but also at their non-financial performance in areas including corporate governance, CSR and their ethical approach to business.

It is clear that the distinctive feature of AIM is the presence and role of the NOMAD. We therefore frame our two hypotheses:

H1: The NOMAD has a positive influence on the directors of AIM companies.

H2: The NOMAD has a positive influence on institutional investors' perception of AIM companies.

We utilise a semi-structured interview methodology approach to elicit the views of various AIM participants regarding the role of the NOMAD. Before proceeding to the detail of the methodology, we briefly explain the corporate governance provisions for AIM companies.

Corporate governance in AIM companies

Companies on AIM are not required to comply with the principles of the Combined Code. However, 'good' corporate governance as embodied in the

recommendations of the Combined Code is considered desirable for AIM companies too.

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

In July 2005, the QCA published a set of Corporate Governance Guidelines for AIM companies as the Combined Code does not directly apply to them.[4] These QCA Guidelines are less rigorous than those applicable to companies listed on the main exchange under the Combined Code. All AIM companies are expected to comply at least with the QCA Guidelines with larger AIM companies aiming for higher standards of good governance practice nearer those of the Combined Code.

The QCA Corporate Governance Guidelines for AIM companies contains several sections: formal schedule of matters reserved for the board; timely information of a quality appropriate to enable the board to discharge its duties; internal controls review (the board should carry out a review, at least annually, of the effectiveness of the system of internal controls and report to the shareholders on this); Chairman and Chief Executive (the roles should be split but if they are not, then there should be an explanation of what procedures are in place to provide protection against the concentration of power within the company); independent NEDs (there should be at least two independent NEDs, one of whom may be the Chairman); re-election (all directors should be submitted for re-election at regular intervals, subject to continued satisfactory performance); audit committee (there should be an audit committee of at least two members who should all be independent NEDs); remuneration committee (there should be a remuneration committee of at least two members who should all be independent NEDs); nomination committee (recommendations for appointments to the board should be made by a nomination committee, or the Board as a whole, after due evaluation); dialogue with shareholders (there should be a dialogue with shareholders based on the mutual understanding of objectives).

The QCA also give guidance on reporting corporate governance including that companies should publish an annual corporate governance statement describing how they achieve good governance which can be published on a company's website and/or in the annual report and accounts. As well as describing how good governance is achieved that report should also include what the QCA term 'basic disclosures' which include, *inter alia*, a statement of how the board operates, the identity of all the board and board committee members including identifying those directors who are independent, biographical details for all directors, and the number of meetings of the board and board committees and directors' attendance at them. Furthermore, the terms and conditions of appointment of NEDs should be made available on the company's website, or available to shareholders on request, as should the terms of reference for the audit committee, remuneration committee and nomination committee.

As can be seen from the above summary of the QCA Corporate Governance Guidelines for AIM 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 QCA Guidelines set out in this Code……where this is not the case, the statement should describe how the features of good governance are being achieved.

However, despite attempts to ensure good governance in AIM companies, there have been a number of recent shortcomings and scandals on AIM. The discussion of these below highlights the sorts of governance and ethical issues that may arise.

Recent shortcomings/scandals on AIM

First, there was a collective failing to comply with Rule 26 which was introduced in February 2007 and required companies to include certain information relating to their financial and other activities. The LSE fined nine companies a total of £95,000 for

failing to have a website compliant with Rule 26. The nine companies did not have websites which contained all the financial details, including the annual report and accounts and regulatory new service announcements by the deadline set of 20th August 2007. In addition to the nine companies that were fined, another seven companies were given warning notices as their offences were less serious. Although none of the companies has been named, both the fined companies and those given warnings rapidly improved their websites so that they complied with Rule 26.

The action taken by the LSE against the companies that did not comply with Rule 26 was important as it helped establish that it was willing to take such action to enforce Rule 26 and that it had 'teeth' and was willing to ensure that AIM companies complied with rules and regulations on AIM.

The second example relates to an individual company, Regal Petroleum. Regal Petroleum, an oil exploration company, was fined £600,000 and also publicly censured by the LSE for various breaches of the AIM rules. Regal made a number of announcements in 2003–2005 whilst it raised funds as it searched for oil in the Aegean Sea. The AIM Disciplinary Committee found that on 11 different occasions Regal had failed to take reasonable care to ensure that announcements were not misleading, false or deceptive, and did not omit material information. There were also two occasions when Regal failed to release price sensitive information as quickly as it should have done. The Financial Times[5] quoted Nick Bailey, the Head of UK Regulation at the LSE, as saying that the case was 'unprecedented in terms of the seriousness of the rule breaches involved and the resultant market impact'.

The Regal Petroleum case was important as it showed that the LSE would be willing to 'name and shame' companies which broke the rules and fine them accordingly. The £600,000 penalty was AIM's highest fine to date and reflected the seriousness of the charges and the disrepute that such actions can bring to the market. Such errant actions may then have a wider reputational impact which is why it was so important for the LSE to take appropriate action and bring Regal Petroleum to account.

The examples of breaches of the rules detailed above indicate that the LSE is willing to introduce changes to help improve accountability and disclosure, for example, Rule 26 in relation to website disclosures, and that it is able to take and enforce action against companies which break the rules. Both of these aspects are important for helping to ensure that AIM retains its attractiveness as a market for small- and medium-sized businesses seeking a lighter regulatory touch, whilst still instilling confidence in investors in the market. If investors do not invest in the market then the source of external investment for new/growing businesses would not be there and this would undermine the rationale for AIM's existence.

It will also be important that in the markets which have adopted the AIM model and used the AIM name, that is, AIM Italia and Tokyo AIM, that the regulators will also be willing to take appropriate action against breaches of the rules.

In relation to the UK AIM, we have noted the expectations of the role of the NOMAD and how there may be significant issues relating to governance and ethical issues if this role is not carried out properly. Are the NOMADs carrying out their role appropriately, showing due diligence in their relationship with their AIM client? With the rapidly growing AIM market, is the role of NOMAD as originally envisaged still viable? Can potential ethical issues be successfully addressed? Does an appropriate monitoring mechanism need to be put in place to try to ensure that there is a fruitful relationship between the NOMAD and its AIM clients? We seek to address these issues in the interviews with AIM participants detailed below.

Methodology

It was decided to use a semi-structured interview approach as the use of face-to-face interviews can help elicit information which other methodologies cannot. Of course, there are some limitations to this approach which include the time intensity of the interview process and the potential for bias given that the semi-structured interviews are guided by a set of questions asked of all the interviewees. Equally having a common set of questions means that the interviewees are approached in a consistent way so this is also an advantage.

It was decided to interview directors of AIM companies, institutional investors who invest in AIM

and Nominated Advisors (NOMAD) who also act as brokers to elicit their views on corporate governance in AIM companies. Interviewing a range of participants in AIM which includes these various groups is a significant way of gaining useful insights into the different perceptions of the role of the NOMAD and facilitates insights into our hypotheses that the NOMAD has a positive influence on the directors of AIM companies (H1) and that the NOMAD has a positive influence on institutional investors' perception of AIM companies (H2).

Interviews were carried out with a sample of 19 AIM company directors, four AIM institutional investors and two Nominated Advisors cum Brokers in 2007. The companies were chosen on a random basis from the list of AIM companies on the LSE website supplemented with additional information about each company from Hemscott, an information service provider. Institutional investors and other market participants were selected randomly from those which have an interest in AIM companies.

Each interview usually lasted an hour, occasionally longer, and was guided by a semi-structured questionnaire.[6] In general, two interviewers were involved and in addition interviews were recorded as a back-up to written notes. The director being interviewed was usually the Finance Director and in some companies the Finance Director was also the Company Secretary. All interviews were given on the basis of confidentiality and therefore individual companies, investors and other market participants are not identified.

TABLE III

Key characteristics of companies interviewed

Characteristic	Number of companies
(a) Length of time on AIM	
Less than 3 years	10
3–5 years	2
More than 5 years	7
(b) Sector	
Oil and gas	3
Industrials	3
Financials	2
Basic materials	1
Technology	3
Healthcare	2
Consumer goods	1
Consumer services	4
(c) Turnover	
Less than £1 million	4
£1 million–£10 million	4
£11 million–£25 million	7
£26 million–£40 million	4

In terms of the size of AIM companies interviewed, the size (as measured by turnover) spanned a range from the smaller companies with a turnover of less than £1 million to larger companies with a turnover of between £26 million and £40 million.

In this article, we concentrate on the findings of the interviews in relation to the role of the NOMAD.

Background information about AIM companies

Table III shows the key characteristics of the companies interviewed. As can be seen the companies cover a range of ages, industry sectors, and size (as measured by turnover). The majority of the companies interviewed had been on AIM for <3 years, although a reasonable number of companies which had been listed for more than 5 years were also interviewed.

Companies in eight out of the 10 industry sectors were interviewed, the exceptions being the telecommunications and utilities' sectors where it was not possible to arrange interviews despite numerous attempts.

NOMAD involvement in corporate governance issues

(i) Directors' views

When asked about their NOMAD's involvement in corporate governance issues, the directors generally stated that the NOMAD was helpful in informing them of changes to do with corporate governance or other AIM issues, such as the new regulations regarding web disclosure. Whilst some companies found their NOMAD very helpful, others said that they had not heard from their NOMAD since their company floated on AIM.

One director stated 'NOMADs are part of the assets of the business as they can add a lot of value to your business if you choose them carefully and use

them properly. They can be a great source of advice for the company'.

Other comments about AIM

The directors generally thought that there were potential issues with AIM. The over-riding reservation expressed by directors was about the quality of some of the companies listing on AIM and especially some of the overseas companies listing on AIM as the following quotes from different directors indicate:

> AIM is fantastic as a way of accessing the capital market. I don't think that the light touch regulation is bad. However the authorities should think carefully about the extent and geographical reach; where companies are coming from countries which historically have weak governance, authorities should consider imposing tighter regulation.

> I'm slightly nervous about how it's taken off in the last year or two with some of the companies coming onto AIM from overseas. Some of these are high risk, and it only takes one or two to go pop, and it affects the whole market. It's not just AIM's responsibility, it's the responsibility of NOMADs too.

The directors of AIM companies seem to have differing experiences of the NOMAD with some indicating that their NOMAD has been very supportive whilst others are of the view that their NOMAD has given them little support. Moreover, there are concerns that some NOMADs may be involved in bringing companies to AIM which have poorer governance. Clearly some of these issues raise ethical concerns and worries about the potential impact on the AIM market of companies which have poor governance or are less reputable.

The analysis of the interviews with directors provides support for H1 that the NOMADs have a positive influence on the directors of AIM companies. However, there are also indications that some NOMADs perform their role much better than others do and that other NOMADs are not giving directors as much guidance as they feel they need in relation to, for example, corporate governance matters. There are therefore potential corporate governance and ethical issues if a NOMAD is not performing its role as a trusted advisor[7] as envisaged, and indeed potential wider financial and reputational implications, for the lighter regulatory touch regime of AIM.

(ii) Institutional investors' views

Interviews were carried out with four institutional investors who invest in AIM companies. The four institutional investors, for the purposes of this study called: A, B, C, and D, have each invested in AIM companies since the inception of AIM itself, and invest across all the industry sectors of AIM. For example, institutional investor A stated that in terms of the percentage held in each AIM company they invest in, that a 15% investment is not unusual for them.

In general, the institutional investors do not view the AIM company's NOMAD as being a significant factor in their investment decision. Similarly, the company's auditor and legal advisors do not impact on the investment decision. However, what did come through from the interviews was that if the institutional investor has had a bad experience with a particular NOMAD or company advisor in the past, then they will look a bit more carefully at the company.

Institutional investor C felt that

> More generally AIM companies (newly listed) often are simply not aware of some of the interests that minority shareholders might have. This may be due to a lack of advice from NOMADs. Remuneration practices stick out in my mind as an area of concern.

Other comments about AIM

In terms of other factors which might influence the investment decision, institutional investor B put emphasis on the location of the company 'For non-UK companies, the location of the company is considered (links in with shareholder rights), for example, Russia, there is a lot of risk involved'.

In relation to H2 that the NOMAD has a positive influence on institutional investors' perception of AIM companies, it seems that this hypothesis is generally not supported although the institutional investors' views may be coloured by their previous bad experience with a particular NOMAD.

(iii) NOMADs' views

It was decided to ask the NOMADs' views for 'the other side of the story', that is for completeness. The two NOMADs companies that were interviewed also

each acted as brokers to more than 80 client AIM companies covering all industry sectors. Given that together the two NOMADs advise more than 160 AIM companies, this means that they advise more than 10% of UK incorporated AIM companies. Both NOMADs have been advising AIM clients since AIM was founded in 1995. They act as NOMAD cum broker for the majority of their AIM clients with a broker only service to a handful of them. There is no AIM client that they acted as a NOMAD only to them. The two NOMAD companies are designated NOMAD A and NOMAD B in this section.

Regarding their roles pre and post AIM listing, NOMAD A said that their role before the IPO was mainly 'transaction focussed getting the company ready for the market in complying with due diligence' and post listing the role is less transaction focussed but more to do with 'providing advice on application of AIM rules and assistance with the announcements'. NOMAD B stated that 'the role is a chain that continues throughout'. Their views support the NOMAD's objective in providing advice on due diligence and AIM rules procedures.

In relation to factors influencing the decision to become an AIM company's NOMAD, NOMAD A's view is that the

> Initial factor is based on a pure assessment of the company. Is the company solid and interesting with growth prospects? Secondly, the company has to be of a certain size criteria, partly because of how we think we can help and be in a position to provide funds for them. Also from a funding angle, institutions are open to certain sizes more than others. Thirdly, the likely prospects of future work on the transaction and broking side. And finally, as a NOMAD, whether we believe the company is investment grade based on the AIM rules.

NOMAD B's view reinforced the importance of the broking service for the AIM client. In sum their views suggest the decision to become a NOMAD to their AIM clients is influenced by whether they can first act as their broker. It implies that NOMAD cum broker companies see their broking service as far more important than being a NOMAD.

Both NOMADs infer that an AIM company's corporate governance structure does affect their decision to accept a client. However, their responses again further support the inference that corporate governance is seen as a secondary issue for these NOMAD cum broker companies to that of fund raising via their broking activity. However, where possible, they would prefer to accept companies that are practising good governance. NOMAD A's response was

> There's no use in having clients which have dysfunctional board, or run by people with little regard to what is deemed as sensible corporate governance. It not only makes it much harder to get them to the governance level we want them to but also makes it unattractive to institutional investors. Institutional investors pay attention to corporate governance structures that are deemed important – proper full board etc. This might be box-ticking but it's important. Chair/CEO split is not crucial for small companies. It's important to look at the personalities involved.

There are difficulties faced by AIM companies in adopting good corporate governance practice. NOMAD A stated that

> Company size has a huge impact in corporate governance in terms of cost especially for pre-profit or pre-revenue companies…..It's much easier to recruit a NED if you are a company growing strongly. Foreign companies may have difficulties in complying because they have different cultures. However, if they wish to raise money here, they have to follow UK corporate governance rules because institutional investors are our clients.

Whilst in NOMAD B's view, AIM companies generally do not comply with good corporate governance practice

> They don't have the depth of management resources, don't produce board briefing packs, don't brief NEDs enough, don't pay NEDS enough for them to spend sufficient time in the business and dominant CEOs prevent NEDs to get across what they require.

Thus, the difficulties faced by AIM companies in complying with practising good corporate governance according to NOMAD A, are due to the company's size and for foreign companies, their business culture and practice. In contrast, NOMAD B has a general litany of problematic weaknesses that were found in the way AIM companies practice their corporate governance. Many of these difficulties lie with the attitude and behaviour of NEDs in

fulfilling their obligations. It would seem that the NOMAD expects – quite reasonably – that NEDs should behave ethically in that if they cannot perform their role, they should not have accepted their position.

The NOMAD interviewees were asked how frequently they meet with AIM company directors. NOMAD A responded by saying that they always meet the AIM company directors before accepting them as their clients. Once accepted, they may attend some of the board meetings depending on the company client's view. NOMAD A further said that

> Face to face meetings are reasonably regular, hopefully once a week to all AIM clients because if you are [the] NOMAD, things come up regularly. Issues discussed on include firm performance and what needs to be done from a regulatory perspective. NOMAD client is important as their brokering client too.

As for NOMAD B, they

> Meet up with executive directors face to face 3 or 4 times a year but typically speak to financial director or CEO every other week, partly because of broking and partly to inform them of the new obligations that come up from time to time.

This suggests that face-to-face meetings with AIM company directors are much more frequent with NOMAD A than with NOMAD B who typically contacts their client company directors more by phone.

Regarding whether a NOMAD would intervene in an AIM client company to try and ensure good corporate governance practice is followed, NOMAD A replied that for example if there was a board conflict due to personalities, they would

> Ask if a NED resigned, discuss why it happened. We are worried more about the broking rather than the NOMAD relationship. We would advise them to find a replacement as soon as possible. This is probably a good time to revisit what the board structure should be like.

However, NOMAD B said

> There's not a lot we can do to intervene. We can encourage and cajole them. We can also request any information if we need to acquit ourselves with our duties.

Their views suggest that they do not take effective steps as a NOMAD to intervene to ensure good corporate governance practice is followed. It highlights the relatively passive advisory role that NOMADs perform for their AIM clients and it could be argued that some NOMADs are less concerned about governance and ethical issues unless these issues affect their (broking) business.

Finally, the NOMADS were asked whether there were any other areas that they feel important being a NOMAD to AIM companies.

NOMAD A said that

> The issue of pre-emption rights is important from a broking perspective, but even though it has corporate governance implications, it is not a NOMAD's concern.

NOMAD B replied that how a NOMAD deals with corporate governance issues comes from experience

> The risks of overseas companies are higher so quality should be higher. Spend a lot longer/more time with overseas companies, even with the American companies. The thing that spurs us on in regard to any company is our good name. The fact that we raise money for a client and it then explodes on us can be disastrous to us as a broker. Having that hanging over our heads is more likely to make us do our job properly because broking is our daily bread rather than anything the SE can throw at us.

To sum up, first, the NOMAD companies that were interviewed, came across as perceiving their role as a broker to their AIM client company as far more important than that of being a NOMAD to them. And second, their role as a NOMAD is seen in a passive capacity in offering corporate governance advice, perhaps to fulfil the obligations of their AIM client companies to have a NOMAD.

(iv) Summary of interview findings

The interviews provide some pertinent findings. The analysis of the interviews with directors provides support for H1 that the NOMADs have a positive influence on the directors of AIM companies. However, there are also indications that some NOMADs perform their role much better than others do and that other NOMADs are not giving

directors as much guidance as they feel they need in relation to, for example, corporate governance matters. There are therefore potential corporate governance and ethical issues if a NOMAD is not performing its role as a trusted advisor as envisaged and indeed wider financial and reputational implications, for the lighter regulatory touch regime of AIM.

The institutional investors do not seem to place much emphasis on who the NOMAD is, except if they have had a less favourable experience with a particular NOMAD previously. Therefore, in relation to H2 that the NOMAD has a positive influence on institutional investors' perception of AIM companies, it seems that this hypothesis is generally not supported although the institutional investors' views may be coloured by their previous bad experience with a particular NOMAD.

Interestingly, and of some concern, is that a common theme from the AIM company directors, and the institutional investors, was a worry that with the rapid expansion of AIM, and with the admittance of an increasing number of overseas companies, the standards of corporate governance were sometimes not all that might be expected and a damaging financial collapse or scandal was only a matter of time. It can be argued that high corporate governance standards are associated with individuals, be they directors, NOMADs or investors, having a decent ethical perspective. In other words, the ethics dimension is a personal way of acting as well as a corporate behaviour. How a person behaves ethically may impact on his company's business practice including adopting good governance standards.

The findings from the interviews with the NOMADs/brokers that they do not perceive their NOMAD role as being as important as their role as a broker to AIM companies, and that they do not tend to actively give corporate governance advice is perhaps another aspect that may give added weight to concerns about the quality of some AIM companies. It seems that there may be occasions when a NOMAD may only intervene if the consequences of their client's lack of ethics is deemed potentially harmful to the NOMAD's business. As AIM Italia and Tokyo AIM have also adopted the NOMAD model, it will be important to ensure that the NOMAD role is being performed appropriately so that good standards of corporate governance and ethical behaviour are encouraged and upheld.

There are some clear governance and ethical implications here as AIM places great importance on the role of the NOMAD in helping to ensure appropriate governance in AIM companies, right through from the admittance process and onwards throughout the life of the company on AIM. If this key element is missing then there may be a propensity to have poorer governance or not to behave in an ethical way in conducting the business.

With the recent introduction of AIM Italia and Tokyo AIM there may be ramifications for these other markets as well as both markets utilise the original AIM concept of a NOMAD to guide a company through coming to the market and to provide ongoing advice on regulatory and other aspects including corporate governance. Both AIM Italia and Tokyo AIM emphasise that they are building on the established international reputation of the LSE's AIM with its lighter touch approach (a tailored regulatory model). Therefore, any potential problems with the AIM model, such as the role of the NOMAD or company failures in the UK AIM, would impact on these international markets as well.

Strengthening of regulatory environment

The LSE now has a regular cycle of NOMAD reviews (started in 2007 after the introduction of the AIM Rules for Nominated Advisors). The primary objective of the reviews is to assess the compliance of NOMADs with the AIM Rules for Nominated Advisors. These rules cover both the obligations at admission of an AIM company and its continuing obligations.

There have been a number of instances where NOMADs have been the subject of disciplinary action by the LSE. For example, in June 2009, a NOMAD broker company called Blue Oar (since renamed as Astaire Securities) was censured and fined £225,000 for concerns about its role as NOMAD to the flotation of Worthington Nicholls in 2006. After flotation Worthington Nicholls issued a number of over optimistic trading statements which resulted in its share price more than tripling. However, subsequently the company issued a series of profit warnings and the share price crashed.

The LSE recently reported[8] that two NOMADs have been privately censured between December

2009 and July 2010 in disciplinary actions. Action was taken against one NOMAD including failure to properly assess a company's appropriateness for AIM which resulted in a private censure and fine of £90,000; and against another NOMAD there was an action for a number of breaches including inadequate written procedures and record keeping and failure to keep itself updated with the company's financial performance which resulted in a private censure and a fine of £80,000.

Since April 2010, the LSE has started a new programme of NOMAD reviews with the primary focus being a much broader risk-based review of the regulatory risks relevant to the NOMAD status of each NOMAD firm. These reviews will encompass, *inter alia*, the size and scope of the NOMAD firm and its client base, its management, its risk appetite, compliance procedures and disciplinary record. The visits will therefore be much more tailored to the individual characteristics (especially risk assessment) of each NOMAD firm.

Concluding comments

As identified at the start of the article, AIM is a fast growing and important market in the UK. A prominent financial scandal or collapse in that market has the potential to shake confidence not just in AIM itself but also more widely, therefore it is important for AIM companies to have appropriate corporate governance structures and to behave ethically. 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 insufficient 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.

In order to determine how successfully the NOMADs carry out this role, interviews were carried out with AIM company directors, institutional investors and NOMADs/brokers. The analysis of the interviews with directors of AIM companies, institutional investors and other AIM participants provided some useful insights regarding perceptions of the importance of the role of the NOMAD highlighting potential shortcomings which might have ethical and governance implications. However, in general, the 'lighter touch' on corporate governance for AIM companies seems to be working quite well, with directors' own sense of best practice and investor expectation usually helping to ensure that appropriate governance practices are adopted. Institutional investors seem to act with an appropriate degree of flexibility towards corporate governance in AIM companies, whilst perhaps being wary of companies which are advised by NOMADs with whom the institutional investors have had a bad experience previously.

Earlier in the article, we posed some questions regarding the due diligence carried out by NOMADs, whether their role is still viable, whether potential ethical issues can be addressed and whether an appropriate monitoring mechanism needs to be put in place to try to ensure that there is a fruitful relationship between the NOMAD and its AIM clients. From the interview findings and the disciplinary actions brought against certain NOMADs by the LSE, we can conclude that not all NOMADS are carrying out their role with due diligence although the majority seem to be performing their role well. The role of the NOMAD has stood the test of time and a rapidly growing market over the 15 years of AIM's existence and therefore is still a viable role. Potential ethical issues, whether relating to corporate governance shortcomings or due diligence pre or post listing, can be largely be overcome by the more rigorous processes and reviews established recently by the LSE, and especially the monitoring mechanism of regular reviews of NOMADs.

However, perhaps one of the most worrying aspects of the interviews with the AIM company directors was their concern about the quality of some

of the companies that have been admitted in recent years. The institutional investors also expressed some doubts, particularly in relation to some of the overseas companies. The admission of overseas companies to AIM should perhaps be more closely scrutinised, particularly when the company's home country has much weaker corporate governance than in the UK. Companies from countries with weaker corporate governance may also be operating in an environment where business ethics are weaker and where, for example, corruption is more prevalent. Also, the regulatory authorities should monitor more closely the governance of AIM companies which have yet to start trading so that the monies raised during Admission are not being misused.

In terms of policy implications, we have seen that a number of policy implications arise from the foregoing analysis of current corporate governance practices in AIM companies. One area that is particularly important is to ensure that, given the significant role played by the NOMAD, both for companies coming to AIM and for those already on AIM, the role of the NOMAD is strongly and appropriately carried out. If it is not then there may be significant corporate governance and ethical issues arising in AIM companies which would have a detrimental effect on the reputation of the AIM. The regular cycle of NOMAD reviews now carried out by the LSE should help ensure that potential corporate governance and ethical problems are recognised in a timely way. It could be argued that the system would be strengthened by more public censure of NOMAD firms which are the subject of disciplinary action, rather than the private censure which is often currently used.

Possible areas for future research include a comparison of AIM with other junior markets around the world; and a review of AIM pre versus post financial crisis.

Notes

[1] The London Stock Exchange (LSE) gives as examples 'an investment bank, a corporate finance firm or an accountancy firm'.

[2] The two NOMADs interviewed also acted as brokers although this is not necessarily the case with NOMADs of other AIM companies.

[3] The study was carried out before Rule 26 mandating AIM companies to maintain corporate websites providing information on specific financial and governance matters came into effect on 20th August 2007.

[4] 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.

[5] David Blackwell and Michael Kavanagh, Financial Times, 18th November 2009, p. 20.

[6] A copy of the questionnaire used for AIM company directors, and a copy of the questionnaire used for the AIM institutional investors and other AIM participants, is available from the authors.

[7] The case of Blue Oar, the NOMAD censured by the LSE in 2009, is discussed later in the article as an example of a NOMAD that was not performing its role as a trusted advisor appropriately. Blue Oar is now renamed Astaire Securities.

[8] 'Inside AIM Issue 2 July 2010'.

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Corporate Scandals and Capital Structure

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ABSTRACT. We analyze whether companies involved in a security class action suit (SCAS) exhibit differential capital structure decisions, and if the information revealed by a corporate scandal affects the security issuances and stock prices of industry peers. Our findings show that before a SCAS is filed, companies involved in a scandal show a greater amount of security offerings than their peers and, due to equity mispricing, are more likely to use equity as a financing mechanism. Following a SCAS filing, these companies exhibit a decreasing amount of total external finance raised and lower levels of book and market leverage. Industry peers' issuance patterns exhibit significant contagion, with reduced debt and equity issuance following the SCAS filing. Corporate scandals also have meaningful negative effects on stock prices and bond ratings. Similar to capital structure, we document contagion at the industry level with peers' share prices yielding negative returns as well.

KEY WORDS: corporate scandals, security offerings, capital structure, contagion effect, market timing

JEL CLASSIFICATION: G32, G33, K41

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 Chapter 11 filing announcements, financial report restatements, or financial distress announcements (Brewer and Jackson, 1997; Lang and Stulz, 1992; Palmrose et al., 2004). The early detection of scandals, if not their prevention, is therefore valuable to stakeholders. Agrawal and Chadha (2005) documented that appropriate corporate governance mechanisms may positively influence the probability of earnings restatements. Agrawal and Cooper (2007) supported this evidence, highlighting the higher turnover of top management and top financial officers soon before and immediately after an accounting scandal. Dyck et al. (2010) showed that non-traditional mechanisms and stakeholders-at-large play considerable roles in triggering fraud detection. Given the documented far-reaching effects of corporate scandals, we ask whether managerial behavior in companies engaged in a corporate scandal also affects financial decisions regarding capital raising, and in particular, whether managers anticipating the risks of a corporate scandal exhibit different capital structure policies than those of their peers. Surprisingly, this question is still unanswered. In this article, we try to fill this gap by looking at the security issuance patterns of companies engaged in security class action suits (SCAS) between 1996 and 2005. In particular, we address three main research questions:

(a) What is the ex-ante and ex-post financing pattern of firms engaged in a corporate scandal?
(b) Do corporate scandals affect the price or quality of the company's financial securities?
(c) Is there a contagion effect in the capital structure and stock prices of the industry after a corporate scandal is revealed?

Previous literature addressed corporate scandals by studying cases of bankruptcy announcements, the public announcements of fraud in the press and earnings restatements. In this article, we adopt engagement in a SCAS as a proxy of a corporate

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scandal. We collected data from the Stanford Securities Class Action Clearinghouse (SSCAC) database.[1] This measure of corporate scandals allows us to generalize the results to a broader set of cases because it deals with actions that (a) are important enough to have permanent effects on security-holders value and (b) leave the company as a going concern, allowing meaningful ex-ante and ex-post differential analyses. In fact, less than 7% of cases included in the SSCAC database end up with a bankruptcy filing.

Our findings show that before a SCAS is filed, companies engaged in a scandal have a higher number of security offerings than the industry average. At the same time, we documented that because firms before the scandals experienced stock prices overvaluation, they were more likely to use equity as a financing mechanism. Compared to their peers, firms involved in a security class action consistently issued more equity in the 2-year period preceding the filing of the suit. Consistent with market timing, we found that SCAS firms exhibit decreasing book and market leverage before the filing due to abnormal volumes of equity offerings. Soon after the filing, however, market leverage increases sharply and significantly due to the readjustment in equity market value. Industry peers are also affected by the eruption of a scandal. Following a SCAS filing, we also observed small but significant decreases in debt and equity issuances for peer companies, indicating that company-specific information is interpreted as a potential industry-wide risk.

Finally, we investigated the effect of corporate scandals on stock prices and bond ratings. We support results in Gande and Lewis (2009) showing that SCAS firms experience large negative stock price returns around the filing date. Peers' stock prices show signs of contagion with significant negative cumulative abnormal returns. These results suggest that corporate scandals do negatively impact their industry. We also show that bond ratings for SCAS companies drop significantly after the filing and the downgrading is stable up to 3 years after the event, suggesting that managerial misconduct has meaningful effects on all classes of security holders.

These results allow us to shed light on the financing and security issuance behaviors of firms whose frauds or other corporate wrongdoings are revealed. We conclude that independent of their intensities, corporate scandals do generate effects at both the firm and industry levels by leading to contractions in security offerings and decreases in stock returns for all industry constituents.

The remainder of this article is organized as follows. ''Motivation and hypotheses'' section summarizes previous study on corporate scandals and presents the hypotheses that we tested in our study. ''Data and summary statistics'' section presents the data and summary statistics. ''Corporate scandals and capital structure'' section presents the results of the empirical analysis of the financing pattern of firms engaged in corporate scandals. ''Corporate scandals and securities prices'' section presents the results of the empirical analysis on security prices. ''Robustness tests'' section discusses the robustness tests performed, and ''Conclusions'' section concludes the article.

Motivation and hypotheses

Corporate scandals and security offerings

Corporate scandals can be defined as widely publicized incidents involving allegations of managerial wrongdoing, disgrace, or moral outrage on the part of one or more members of a company. Typical instances of fraudulent behavior include misstatements of financial figures on current, past or future investments, or operations, delay in disclosing or failure to disclose information, bribery, insider trading, and any other illegal activities that hurt the shareholders of the firm (Dyck et al., 2010). A common feature of such misconducts is the biased, deferred, or hindered revelation of information that would have had meaningful effects on managerial actions: first, such information would have significantly reduced stock prices, making security offerings increasingly diluting and costly; second, it would have reasonably reduced (or canceled altogether) managerial independence in making capital structure-related decisions; third, it would have heavily affected managers' payoffs, driving stock options out-of-the money, not triggering bonus payments, or determining managers' firing. Managers, arguably, are aware of these 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, trying to "make the most out of it while it lasts." 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 stock's liquidity in a spirit similar to that in Ivashina and Scharfstein (2009). These managerial actions are likely to carry significant overinvestment costs for security holders as shown by Jensen (1986). SCAS filing documents provide meaningful examples of these agency costs. In Cisco (2001), the plaintiff alleged that "[…] After completing more than 20 major acquisitions between 9/99 and 2/01, by issuing more than 400 million shares of Cisco stock, […] on 2/6/01, Cisco announced extremely disappointing 2nd Q F01 results"; similarly, in Bay Networks (1997), it was alleged that: "[…] materially false or misleading statements enabled Bay Networks to Complete stock-for-stock acquisitions during the Class Period." Working capital financing was claimed by the plaintiff in SuperGen (2003): "[…] SuperGen sold millions of shares and notes […] so as to provide it with ample monies to fund its operations. However, this all took place prior to revelations concerning the veracity of the Company's statements regarding Mitozytrex [a drug]." These anecdotal pieces of evidence are supported by the analysis of the investment and dividend decisions of SCAS companies, reported in our Internet Appendix 1. We show that firms involved in a security class-action invest considerably more in R&D, are twice as active in the M&A market, and make acquisitions that are up to three times more costly than those of their peers. Inversely, and consistent with the results of Harford, Mansi and Maxwell (2008), their dividend yields are considerably lower and often close to zero, suggesting the existence of severe agency costs. In this spirit, we develop our first hypothesis:

Hypothesis 1: Ex-ante, firms engaged in wrongdoing leading to a corporate scandal have a greater amount of security offerings than the industry average.

The Market Timing Hypothesis states that when making decisions about funding, managers take into account the current conditions of the debt and equity markets. Managers will choose the funding mechanism that looks pro-tempore optimal. However, if market conditions are unfavorable for debt and equity issuance, fundraising may be deferred. Support for the market timing theory comes from empirical evidence of managerial opportunism in setting financing policies (Graham and Harvey, 2001). Although this theory falls short in explaining many of the factors that have been traditionally considered in studies of corporate capital structure, it is bolstered by strong empirical evidence that supports the existence of a behavioral component in managerial decisions. Baker and Wurgler (2002) built their capital structure predictions on the historical stock prices of firms, and further evidence confirms that stock prices indeed play an important role in explaining capital structure and capital structure changes (Welch, 2004). As for stock prices, the market timing hypothesis argues that firms tend to issue equity after the value of their stock has increased (Hovakimian et al., 2001) and that corporate leverage is the best understood as the cumulative effect of past attempts to time the market (Baker and Wurgler, 2002). One important assumption underlying the market timing hypothesis is the possible existence of stock price misvaluation. If this occurs, then managers of a firm that has an overvalued (undervalued) stock price will opportunistically exploit this mispricing by issuing equity (debt). This latter fact was confirmed by Graham and Harvey (2001). In an interview survey of 392 U.S. and Canadian CFOs, 76% of the sample reported that the amount by which their stock was overvalued or undervalued was an "important" or "very important" factor in decisions about equity issuance.

Corporate scandals act as information revelation mechanisms for equity market participants. A scandal sheds new light on the actual managerial and accounting practices of the firm, revealing information that was previously unavailable to investors. Evidence shows that in extreme cases ending in bankruptcy filing, investor reaction is strong and significant, with sharp declines in stock prices for the firms involved in the scandal (Agrawal and Chadha, 2005; Lang and Stulz, 1992; Rao and Hamilton, 1996). The stock price drop following such events can be interpreted as evidence of previous overvaluation either due to an accounting phenomenon (such as a misrepresentation of earnings) or because

some information regarding the company's investments or risk exposure was not fully available to the market. Accordingly, we expect the following:

Hypothesis 2: Ex-ante, firms engaged in wrongdoing leading to a corporate scandal make greater use of equity financing than the industry average.

If managers, due to information asymmetry that eventually leads to a scandal, time the market by issuing more equity when the stock is overvalued, then we can develop two ancillary predictions. First, once a scandal erupts, the abnormal security issuance pattern should revert toward the industry mean. Second, if their equity issuance is higher than that of their peers, their leverage by construction should be lower. Accordingly, we define the following two hypotheses:

Hypothesis 3: After the corporate scandal is unveiled, the stock price of SCAS firms adjusts to the fair price, and firms' securities issuance aligns to the industry's average.

Hypothesis 4: Ex-ante, firms engaged in wrongdoing leading to a corporate scandal have lower levels of leverage than the industry average.

Debt costs and volumes are highly sensitive to corporate information. Rating agencies are known to follow a rating stabilization objective that allows managers to plan the financial needs over a longer time horizon. Arguably, a timely revelation of negative news about the company prospects can lead to a rating downgrade that immediately raises debt-financing costs, increases financial rigidity, and makes debt financing less attractive or nonviable. Then, managers have an incentive to delay or prevent altogether the release of debt-price sensitive information. We therefore hypothesize the following:

Hypothesis 5: The information revealed in a corporate scandal determines a long-term deterioration of the debt quality measured by its debt rating.

Corporate scandals and contagion effect

Academic research on contagion effects at the corporate level has focused on the spillover of shocks occurring in one entity to other entities. The previous literature explored the contagion effects on stock returns following bankruptcy (Lang and Stulz, 1992), earning restatements (Gleason et al., 2008), or managerial forecast announcements (Ramnath, 2002). Similarly, Gieseke (2004) and Theocharides (2007) explored contagion in the corporate bond market, showing that bond prices, yields, and spreads react to firm-specific information. However, no previous study has investigated the existence of a contagion effect on capital structure decisions by companies. Because listed companies raise capital in the market, they are exposed to investor sentiments, market momentum, and, possibly, to information concerning contiguous companies that investors may transfer to the entire industry. The financial crisis of 2008 provided an illuminating example of this phenomenon, in which inherently sound companies experienced the same dry-up in capital as weaker peers in their industry. Despite their managers' efforts, ''the capital market window [was] just closed'' for both high- and low-quality companies (Federal Reserve Board, 2008).

In this spirit, a SCAS filing is a signal that non-negligible mismanagement has occurred in a company. Investors may infer that this behavior can be common practice across the industry and therefore increase the competitors' capital constraints. A highly constrained financing environment leads to an increased cost of external financing and ultimately to a contraction of the total security offerings of the industry. Furthermore, this effect is amplified by the degree of similarity among the firms' cash flows (Lang and Stulz, 1992). Thus, we generate the following hypothesis:

Hypothesis 6: The eruption of a corporate scandal will produce a contagion effect on the financing pattern of industry peers, generating a contraction in both debt and equity issuances.

A natural second step would be to evaluate whether corporate scandals also affect competitors' returns. Most studies of contagion effects have focused mainly on US bank failures (Kanas, 2005). These studies state that the failure of a large bank can undermine public confidence in the banking system as a whole, which may in turn threaten the stability of the financial system by causing runs on other banks (Aharony and Swary, 1983; Diamond and

Dybvig, 1983; Swary, 1986). One seminal study on the topic of the contagion effect that departs from the banking industry investigates the effect of bankruptcy announcements on the equity value of a firm's competitors (Lang and Stulz, 1992). The authors find that on average, the market value of a weighted portfolio of the common stock of the bankrupt firm's competitors decreases by 1% at the time of the bankruptcy announcement and that this decline is statistically significant. Lang and Stulz (1992) tested the existence of a contagion effect for non-financial firms at an intraindustry level; later, Brewer and Jackson (2002) extended these results at the inter-industry level, working on a database of commercial banks and life insurance companies. Ferris et al. (1997) demonstrated that large firm bankruptcies generate a dominant contagion effect. Gande and Lewis (2009) documented statistically significant market price effects following a corporate scandal. Looking at security class actions, they used stock price returns, the legal environment, and the expected effects of a class action to develop a probabilistic model to predict the initiation of a SCAS. The corporate finance-related variables they use in their model are unexpected earnings and managerial compensation, but there is no metric addressing such a capital structure phenomena. However, it is reasonable to expect that corporate scandal has a different impact on the stock prices of industry peers of a company involved in a SCAS conditional on previous capital structure decisions such as leverage and cash flow level. To test this intuition, we generate the following hypotheses:

Hypothesis 7: Ex-post, a corporate scandal will cause a negative contagion effect on industry peers' stock prices, and the contagion intensity is affected by the peers' capital structure characteristics.

Data and summary statistics

Data

The previous literature on corporate scandals adopted earnings restatements, bankruptcy announcements, and announcements of fraud in the press as measures of a scandal. In this article, we depart from these approaches and proxy a corporate scandal by the filing of a SCAS in the United States, as emerging from the SSCAC database. This definition of corporate scandal helps us generalize the results to a broader set of corporate events because it deals with less severe cases than financial default as only less than 10% of cases end in bankruptcy announcements. By adopting data at the Security Class Action level, we can test whether scandals do affect firms' and their peers' behaviors conditional and unconditional on scandal intensity. Our database includes several types of corporate scandals, such as self-dealing frauds, disclosure failure, misrepresentation of accounting data, etc. One important concern, as highlighted by Dyck et al. (2010), is the possible inclusion of cases that may have simply been frivolous allegations. To deal with this potentially severe sample bias issue, we excluded actions filed before the passing of the Private Securities Litigation Reform Act of 1995 (PSLRA), which was designed with the goal, among others, of reducing courts' workload from frivolous claims. In addition, we excluded dismissed cases, i.e., closed cases in which the outcome was a discharge from allegations.

The original Class Action Suits database has 2479 cases from January 1996 to December 2006. We only kept cases filed between January 1996 and December 2005, to allow for the availability of at least 2 years of financial statement data after the suit filing. We then dropped highly specific SCASs classified as Analyst-related, IPO Allocation, Mutual Fund, and Option Backdating (thus leaving only the Classic SCAS cases).[2] The rationale for this decision is that these cases are generally related to one isolated event (listings or managerial compensation) that is less likely to have an impact on a broader cross section of security holders. Following Eckbo et al. (2008), we dropped private holdings, firms in the financial and utilities sectors (sic codes 6000–6999 and 4900–4999), and cases that did not have Compustat and CRSP information for the required period. The final sample reduces to 793 SCAS cases. Fifty-four percent (432) of the cases involved accounting allegations, and the remaining 46% (361) were classified as cases involving non-accounting allegations. At the time of data collection, 16% (127) of the cases were still pending, whereas the remaining 84% (666) of the cases were already settled. We matched the firms from the SCAS database with Compustat and CRSP using the firm's CUSIP. In

the final sample of SCAS cases, we had 765 CUSIPs, meaning several firms might have had more than one SCAS filing. The mean total assets in the filing year for these firms were 4642.62 million USD. The sample contained a total of 204 different 4-digit sic codes that we used to generate peer-groups comparisons. We classified each case according to the Fama and French (1997) industry classification to identify the dispersion of cases by industry; on average, we had 21 different Fama and French industries in each filing year (see Table I) and a total of 41 industries.

Finally, to ensure that SCASs are not a proxy of bankruptcy, or more specifically of Chapter 11 filings, we matched our data with LoPucki's UCLA Bankruptcy Research Database. We manually merged information from the two databases and observed that on average, only less than 7% of the firms in our final sample filed for Chapter 11 in the period 2 years before or after the filing of the suit. This result allows us to argue that because SCASs are not a proxy for bankruptcy, capital structure changes are not a result of bankruptcy-driven corporate restructuring. Table II provides the distribution of cases included in our sample by event year, type of allegations, and amount of companies that eventually filed for Chapter 11 in the 2 years before or after the filing of the SCAS.

To allow comparisons with the average financing behavior of industry peers, for each event year, we constructed a measure given by the value-weighted portfolio of firms classified with the same 4-digit sic code and not involved in a SCAS.

TABLE I

Yearly distribution of events and Fama and French industries

Filing year (SCAS)	*N*	Fama and French industries
1996	47	19
1997	66	22
1998	88	24
1999	75	22
2000	87	21
2001	81	20
2002	90	25
2003	63	21
2004	82	21
2005	67	24
2006	47	18
Total	793	41

This table reports the distribution of security class action suit cases by filing year, from January 1996 to December 2006. Fama and French industries were assigned using 4-digit sic codes and the classification provided in Fama and French (1997).

Variables definition

We constructed capital structure variables following Baker and Wurgler (2002). Book equity was measured as total assets minus total liabilities and preferred stock plus deferred taxes and convertible debt. Market equity was measured as the number of common shares outstanding multiplied by the stock price. Book debt was measured as total assets minus book equity. Book leverage was measured as book debt divided by total assets. Market leverage was measured as book debt divided by the sum of total assets minus book equity plus market equity. The amount of total (yearly) security offerings was measured as the sum of debt issuances and book equity issuances. Debt issuances were measured as the change in total assets minus the change in book equity divided by total assets. Book equity issuances were measured as the change in book equity minus the change in balance sheet retained earnings, divided by total assets.[3] In addition, because debt and equity issuance were sometimes negative, indicating repurchases or voluntary cancelations of debt and equity, we constructed a dummy variable that is equal to one when either equity or debt issuances are smaller than zero, and zero otherwise.

Corporate scandals and capital structure

Security offerings

We conjectured that because fraud detection may affect the availability and cost of future financing, managers have incentives to take advantage of this information asymmetry to increase the amount of funds they raise. Similarly, we expected a firm engaged in a fraudulent behavior – such as a lack of disclosure of information and/or misstatement of

TABLE II

Amount of cases studies by event year, type of allegation, and Chapter 11 filing

Year (event)	*N*	Accounting allegations (%)	Non-accounting allegations (%)	Filed for Chapter 11 in $t = [-2, 2]$ (%)	Didn't file for Chapter 11 in $t = [-2, 2]$ (%)
$t = -3$	735	55.50	44.50	8.50	91.50
$t = -2$	754	55.00	45.00	8.80	91.20
$t = -1$	717	54.30	45.70	7.60	92.40
$t = 0$	627	53.40	46.60	5.40	94.60
$t = 1$	551	53.40	46.60	4.40	95.60
$t = 2$	458	54.80	45.20	4.20	95.80
$t = 3$	366	54.80	45.20	4.00	96.00

This table reports the distribution of security class action suit cases 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 percentages of cases according to the type of allegation (accounting and non-accounting), and to the filing of Chapter 11 (2 years after or before the filing) are also presented.

accounts – to have a greater need of cash and liquidity, which would translate into a greater amount of capital raised. Based on this intuition, we compared the weighted average amount of security offerings by the sample of firms engaged in a SCAS with the average amount of offerings made by their peers (the value-weighted portfolio of the remaining firms with the same 4-digit sic code). The comparison was performed using data from the 6-year window {−2, +3} around the filing of the SCAS. Results reported in Table III offer support for our hypotheses.

Ex-ante, firms engaged in a corporate scandal issued significantly more securities than their peers. However, this issuance pattern was abnormal and disappeared after the SCAS filing. On average, 2 years before an event, firms engaged in a corporate scandal issued 5.35 times more securities than their peer sample. One year before the filing, abnormal security issuance started decreasing, although it remained 2.52 times higher than that of industry peers. In the event year, i.e., when the SCAS was filed, abnormal issuance was twice that of the peer group. All differences are statistically significant at the 1% level on both one and two-tailed tests.

Hypothesis 3 predicted that once the information gap with the market that allowed abnormal security issuance is eliminated, the issuance pattern should revert to the market mean. Results reported in Table III confirm this intuition: in the 3 years following the SCAS filings, sued firms decreased their security offerings considerably, and their issuance pattern was not statistically different from that of their peers. In fact, there is some (though insignificant) evidence that their issuances were below the industry average. This result is not surprising and can be interpreted as evidence of an overshooting effect: the market reacts sharply to the SCAS, and prices drop below their "fair" value, reducing the chances for capital raising.

Financial mix: equity and debt offerings

The previous analysis shows robust evidence of greater security issuance before a scandal erupts, which supports the idea that firms and managers exploited temporary overpricing due to undisclosed information. However, this information gap should affect equity more heavily than debt issuances. According to the Market Timing Hypothesis, firms with higher current stock prices (relative to their past stock prices, book values or earnings) are more likely to issue equity rather than debt and repurchase debt rather than equity (Hovakimian et al., 2001). On this basis, we hypothesized that the retained information allows firms to maintain overvalued stocks, leading to higher equity issuances. Accordingly, we expect these firms to show smaller evidence of differential issuance of public debt.

The results reported in Table IV confirm our predictions. Ex-ante, SCAS firms issued far more

TABLE III

Mean security offerings by event year

t	Variable	Obs.	Mean	Mean (diff.)	$\Pr(\lvert T\rvert > \lvert t\rvert)$[a]	$\Pr(T > t)$[b]
−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

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 4-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.

[a]Ha: mean (diff.) $\neq 0$.

[b]Ha: mean (diff.) > 0.

Significance at the 1, 5, and 10% level is denoted by ***, **, and * respectively.

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. As with results observed for the security issuances test, this trend decreases over time, although its significance is consistently high at the 1% level. In particular, 1 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. As predicted, after the event, SCAS firms considerably reduced their equity issuances, which are never significantly different from the industry average.

Debt issuance evidence provides additional support to the 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. However, 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 is still negative but not significant.

Contagion effect on external financing decisions

Firms in the peer sample show significantly different behavior, with both debt and equity offerings being relatively stable in the two periods before and after the SCAS filing. Interestingly, issuance figures show strong evidence of discrete, one-time downward changes around the event date. Because figures are estimated over event windows distributed over a 10-year time horizon, it is not likely that this change is correlated with market conditions. Instead, we interpret this change as a possible consequence of a contagion effect on peers: when a SCAS is filed, investors may increase risk estimates indicating that other companies have engaged in similar practices, thus reducing stock prices and increasing debt

TABLE IV

Mean debt and equity issuances by event year

t	Variable	Obs.	Mean	Mean (diff.)	Pr($\|T\| > \|t\|$)[a]	Pr($T > t$)[b]	Pr($T < t$)[c]
Equity							
−2	Equity issuances SCAS	629	0.538				
−2	Equity issuances PEERS	629	0.070	0.468	0.018**	0.009***	0.991
−1	Equity issuances SCAS	638	0.309				
−1	Equity issuances PEERS	638	0.072	0.236	0.000***	0.000***	1.000
0	Equity issuances SCAS	553	0.148				
0	Equity issuances PEERS	553	0.062	0.086	0.000***	0.000***	1.000
1	Equity issuances SCAS	483	0.074				
1	Equity issuances PEERS	483	0.045	0.029	0.256	0.128	0.872
2	Equity issuances SCAS	403	0.089				
2	Equity issuances PEERS	403	0.046	0.043	0.089*	0.044*	0.956
3	Equity issuances SCAS	322	0.082				
3	Equity issuances PEERS	322	0.043	0.039	0.091*	0.046*	0.955
Debt							
−2	Debt issuances SCAS	632	0.038				
−2	Debt issuances PEERS	632	0.040	−0.002	0.990	0.505	0.495
−1	Debt issuances SCAS	640	0.081				
−1	Debt issuances PEERS	640	0.039	0.042	0.008***	0.004***	0.996
0	Debt issuances SCAS	555	0.036				
0	Debt issuances PEERS	555	0.032	0.004	0.766	0.383	0.617
1	Debt issuances SCAS	485	−0.033				
1	Debt issuances PEERS	485	0.029	−0.062	0.003***	0.999	0.001***
2	Debt issuances SCAS	406	−0.025				
2	Debt issuances PEERS	406	0.024	−0.049	0.069*	0.966	0.034**
3	Debt issuances SCAS	325	−0.011				
3	Debt issuances PEERS	325	0.025	−0.035	0.568	0.716	0.284

This table reports mean equity and debt issuances of firms engaged in a corporate scandal (proxied by the filing of a security class action suit), and a value-weighted portfolio of the remaining firms with the same 4-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. 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 three columns of the table present the results of the one- and two-tailed mean-difference tests.

[a]Ha: mean (diff.) $\neq 0$.

[b]Ha: mean (diff.) > 0.

[c]Ha: mean (diff.) < 0.

Significance at the 1, 5, and 10% level is denoted by ***, **, and * respectively.

required yields, which ultimately results in more costly capital and deferred or reduced capital raising.

We further explore this evidence by modeling a trend variable T that captures the evolution over time of external capital raising. The values of the trend variable range from {1, 6} and are linked to the event years so that T is equal to one when the event year is −2, T takes a value of two when the event year is −1 and so forth. We then explore trends in security offerings by performing the following cross-sectional random-effects GLS regression:

$$Y_{it} = \alpha_i + \beta_i T + \varepsilon_{iT} \quad (1)$$

where Y_{it} is the dependent variable capturing the aggregate ith industry equity, debt, or total security offerings, T is the trend variable, and ε_{it} is the error term of the regression. The regression results are robust to exogenous factors like market momentum,

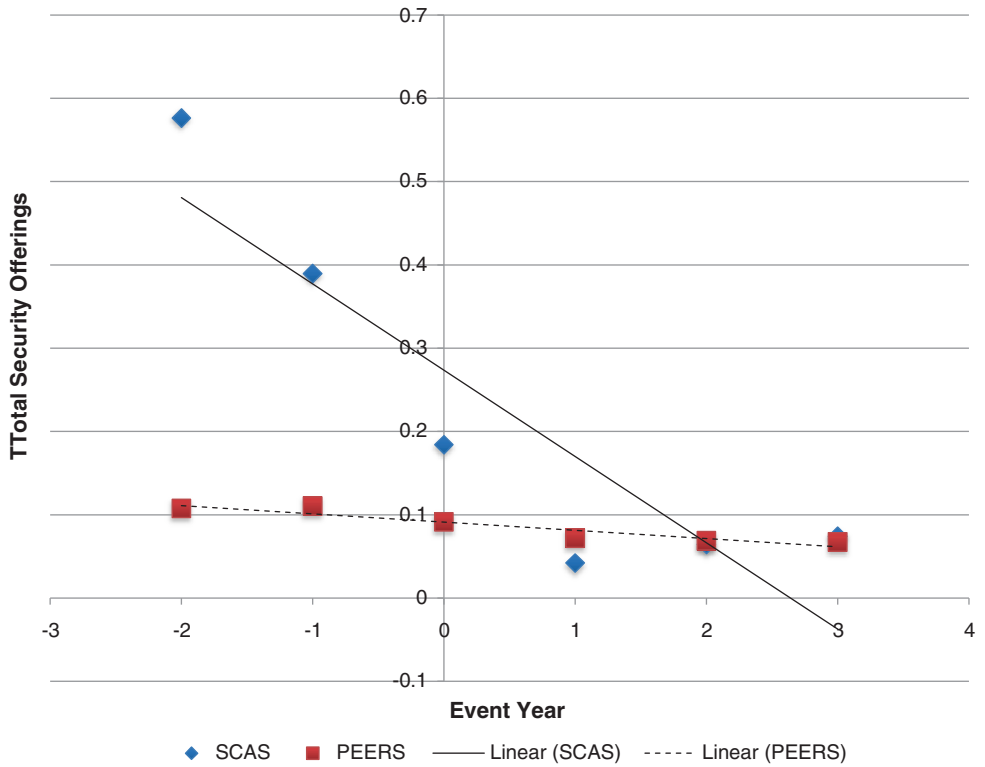


Figure 1. Total security offerings trend analysis. This figure reports the results of the regression: $Y_{jt} = \alpha_j + \beta_j(T) + \varepsilon_{jt}$; where, Y_{jt} are total security issuances, T is a trend variable that ranges from {1, 6}, and ε_{jt} is the error term of the regression. The amount of total-yearly-security offerings is measured as the sum of debt issuances and book equity issuances.

business cycles, and sentiment because we are working with event years and not calendar years. Additional robustness tests are presented in "Robustness tests" section.

Figure 1 and Table V show regression results for SCAS firms and their peers. Our results support the intuition in hypothesis 6: overall issuances decrease at an increasing rate over time for both subsamples. The trend coefficient for both subsamples is negative, statistically significant, and, not unexpectedly, larger for SCAS firms. The intercepts are large and positive, indicating positive net security issuance over time. Regression significance as captured by χ^2 in Wald statistics is robustly significant at the 1% level.

Breaking down the security issuance trend analysis by types of security, we find that debt and equity issuances decrease for both peers and SCAS firms. As reported in both Figure 2 and Table V, the trend coefficient of the troubled firms is over 13 times larger than that of their peers.

Still, peers experience a negative, strongly significant coefficient, which indicates a contraction in capital raising in public equity markets. The results for debt issuance are somewhat different. Not surprisingly, regression estimates for SCAS firms are not significant. This result can be explained by recalling the evidence of debt issuance and book leverage of SCAS firms, which showed a strong decrease in debt issuance after the filing followed at $t = +2$ by a recovery. On the other hand, results for the peer group are strongly significant, with a negative coefficient for the trend variable, which indicates that a SCAS against one competitor affects the debt capacity of the entire industry. As expected, results are stronger and more significant when inter-industry similarity is higher as reported in Internet Appendix 2.

Leverage

The previous analyses show remarkable differences in the security issuance patterns of companies targeted by a SCAS and peers. However, these figures

TABLE V

Security offering trend analysis

Dependent variable	Total security offerings	Equity issuances	Debt issuances
SCAS			
Intercept	0.586***	0.510***	0.082
$P > \|z\|$	0.000	0.000	0.313
Trend coeff.	−0.093***	−0.078***	−0.019
$P > \|z\|$	0.000	0.001	0.392
N	721	721	724
Wald chi-square	32.05***	10.67***	0.73
$P >$ chi-square	0.000	−0.001	−0.392
PEERS			
Intercept	0.120***	0.078***	0.045***
$P > \|z\|$	0.000	0.000	0.000
Trend coeff.	−0.009***	−0.006***	−0.004***
$P > \|z\|$	0.000	0.000	0.000
N	782	782	782
Wald chi-square	57.18***	47.75***	21.96***
$P >$ chi-square	0.000	0.000	0.000

This table reports the results of the regression: $Y_{iT} = \alpha_i + \beta_i T + \varepsilon_{it}$; where Y_{iT} are either equity, debt, or total security issuances, T is a trend variable that ranges from {1, 6} representing event years {−2, 3}, and ε_{iT} is the error term of the regression. 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.

Significance at the 1, 5, and 10% level is denoted by ***, **, and * respectively.

may not fully capture the complete set of financing decisions by companies. In fact, privately negotiated financing (e.g., bank loans) is by construction excluded from the data. This source of capital is largely used, in addition to publicly placed securities, to shape up companies' financial structures. In particular, following hypothesis 4 and previous results, we should expect market leverage to not be significantly different from that of the industry due to overpriced equity before the SCAS; we should also expect it to increase soon thereafter due to the strong adjustment in prices following the SCAS announcement. Similarly, book leverage should decrease before the filing as an effect of incremental equity increases and rise in the years that follow as evidence of greater use of non-public debt by the company due to too costly or closed market conditions.

We test these intuitions by analyzing the market and book leverage figures for companies sued by security holders and the control peer group around the event date. The results reported in Table VI confirm these predictions.

Firms engaged in SCAS showed decreasing levels of book leverage before the event date, although differences with the peer groups were not significant except for the event year −2. In contrast, book leverage differences increased significantly for all periods following the filing date. This result was fully generated by SCAS firms' changes because the peer group did not show any significant change in the average book leverage over the 5-year event window.

Market leverage figures were not largely different between the two groups before the filing date. However, we documented a strongly significant increase in market leverage on the event date and for all the years that follow. Similar to book leverage figures, market leverage figures for the peer group were constant over time, suggesting that differences are determined by drops in the market value of the equity of SCAS firms.

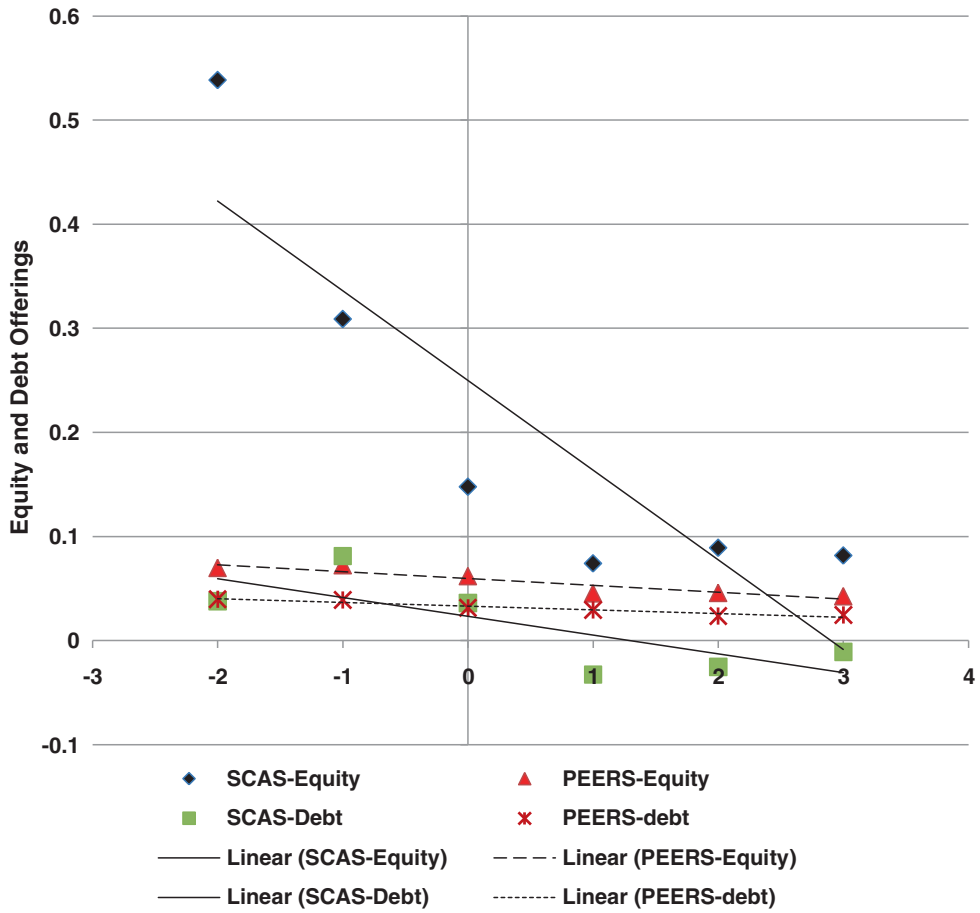


Figure 2. Equity and Debt issuance trend analysis. This figure reports the results of the regression: $Y_{jt} = \alpha_j + \beta_j(T) + \varepsilon_{jt}$; where, Y_{jt} are either equity, debt, or total security issuances, T is a trend variable that ranges from {1, 6}, and ε_{jt} is the error term of 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.

Negative issuance

Previous results have shown that both SCAS firms and their peers have a lower level of security issuance after a security class action filing. Interestingly, this phenomenon also generates cases of "negative issuance." Negative debt issuance can often be the simple repayment of outstanding debt without any rollover. In such a case, assuming that companies have a fairly stable short-term financial structure, the negative issuance pattern should be rather stable throughout the event window. However, if some extraordinary event occurs affecting the company's current and expected cash-flows, an abnormal negative issuance pattern becomes a signal of a debt restructuring process involving some degree of debt-cutting. Negative equity interpretation is less intuitive because book equity is a permanent liability on a company's balance sheet that is harder to renegotiate. One possible scenario could be that the information revealed in a scandal triggers a profound restructuring that forces equity holders to write off some equity. However, it is extremely unlikely that this may happen without a formal procedure such as a Chapter 11; this situation occurs in our sample in less than 7% of cases. In contrast, it is possible that once the information is revealed, the firm may be prevented from investing – and overinvesting – and thus be left with excess cash that is paid out to shareholders through buybacks, as the stock price would most likely not be overpriced.

TABLE VI

Market and book leverage by event year

t	Variable	Obs.	Mean	Mean (diff.)	$Pr(\|T\| > \|t\|)$[a]	$Pr(T > t)$[b]
Market leverage						
−2	Market leverage SCAS	607	0.236			
−2	Market leverage PEERS	607	0.233	0.003	0.719	0.359
−1	Market leverage SCAS	633	0.252			
−1	Market leverage PEERS	633	0.234	0.018	0.050**	0.025**
0	Market leverage SCAS	570	0.372			
0	Market leverage PEERS	570	0.237	0.135	0.000***	0.000***
1	Market leverage SCAS	498	0.381			
1	Market leverage PEERS	498	0.239	0.142	0.000***	0.000***
2	Market leverage SCAS	417	0.360			
2	Market leverage PEERS	417	0.231	0.129	0.000***	0.000***
3	Market leverage SCAS	327	0.365			
3	Market leverage PEERS	327	0.230	0.135	0.000***	0.000***
Book leverage						
−2	Book leverage SCAS	706	0.653			
−2	Book leverage PEERS	706	0.430	0.223	0.027**	0.013**
−1	Book leverage SCAS	660	0.483			
−1	Book leverage PEERS	660	0.423	0.060	0.106	0.053*
0	Book leverage SCAS	572	0.526			
0	Book leverage PEERS	572	0.425	0.101	0.000***	0.000***
1	Book leverage SCAS	501	0.626			
1	Book leverage PEERS	501	0.435	0.191	0.007***	0.003***
2	Book leverage SCAS	420	0.581			
2	Book leverage PEERS	420	0.421	0.161	0.000***	0.000***
3	Book leverage SCAS	330	0.755			
3	Book leverage PEERS	330	0.419	0.336	0.037**	0.019**

This table reports the mean market and book leverage of firms engaged in a corporate scandal (proxied by the filing of a security class action suit), and for the value-weighted portfolio of firms with the same 4-digit sic code by event year, excluding the SCAS firm. The event year ($t = 0$) is defined as the year in which the security class action suit was filed against the firm. Market leverage is measured as book debt divided by the sum of total assets minus book equity plus market equity. Book leverage is measured as book debt divided by total assets. The last two columns of the table present the results of the one and two-tailed mean-difference tests.

[a]Ha: mean (diff.) $\neq 0$.

[b]Ha: mean (diff.) > 0.

Significance at the 1, 5, and 10% level is denoted by ***, **, and * respectively.

In Table VII, we report figures for a simple discrete analysis of the number of firms for which debt and equity issuances figures were less than or equal to zero during the $\{-2, +3\}$ years surrounding the event.

The results show that after the filing, SCAS firms retired and/or repurchased about 88% more equity and 74% more debt. In the SCAS subsample, negative debt issuance may be the result of debt repayment and cancelation due to restructuring taking place after the suit was filed. Agrawal and Cooper (2007) show, in fact, that immediately after a scandal, most of the companies change their top management and initiate profound restructuring processes encompassing debt renegotiation as well. This same interpretation may apply to the equity figures because most of the restructuring plans imply large dilutions for existing shareholders, which result in negative changes in book equity and retained earnings.

Surprisingly, however, companies in the peer group also showed an increasing amount of negative

TABLE VII

Negative issuance

Equity issuances						
t	SCAS			PEERS		
	Obs.	Eq_iss ≤ 0	% Eq_iss ≤ 0	Obs	Eq_iss ≤ 0	% Eq_iss ≤ 0
−2	629	90	14.31	754	91	12.10
−1	638	95	14.89	717	103	14.40
0	553	145	26.22	627	99	15.80
1	483	135	27.95	551	108	19.60
2	403	105	26.05	458	97	21.20
3	322	96	29.81	366	73	19.90
Debt issuances						
t	SCAS			PEERS		
	Obs.	Debt_iss ≤ 0	% Debt_iss ≤ 0	Obs.	Debt_iss ≤ 0	% Debt_iss ≤ 0
−2	632	175	27.69	754	154	20.40
−1	640	174	27.19	717	135	18.80
0	555	211	38.02	627	153	24.40
1	485	244	50.31	551	128	23.20
2	406	217	53.45	458	109	23.80
3	325	159	48.92	366	92	25.10

This table reports the results of a discrete analysis of negative debt and equity issuances in the different event years. For each event year, we calculated the number of case where debt/equity issuances were less than or equal to zero. Percentage are calculated on the total number of observations.

issuances. The differences are strong and significant across both samples and time. In line with our conjecture, we interpret this result as a contagion effect of the filing of a SCAS in the industry, which results in decreased opportunities for security offerings in the peer group around the event.

Corporate scandals and securities prices

Equity

The previous results build on the arguments that corporate scandals convey information about a firm's cash flows and accounting or management practices and investors may consider the scandals as signals of an industry-wide phenomenon rather than as isolated, company-specific events. Such an inference should determine a negative effect on the stock prices of both SCAS firms and their peers following the revelation of the scandal. Initial evidence of this effect and of the spillover to competitors was provided by Gande and Lewis (2009). However, in their study, there is no evidence of any differential effect on stock prices conditional on capital structure and financial characteristics of the industry, which may arguably impact the magnitude of the investors' response to scandals at the inter-industry level. In this section, we begin by testing general effects on stock prices following a SCAS announcement and control for the settlement size, leverage, and correlation of returns. We examine abnormal returns on a set of short-term windows (2, 3, 11, 13, and 21 days around the event). We chose to restrict our study to short-term windows, as working within a longer perspective could intro-

duce noise into our results. The specific bracketings are constructed to capture quasi-instantaneous and anticipated or delayed stock price reactions to the filing announcement.

Following MacKinley (1997) and Khotari and Warner (2006), we estimate the normal performance using a standard market model with the following equation:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \tag{2}$$

where R_{it} is the predicted normal rate of return of security i at time t, R_{mt} is the value-weighted return of the S&P500 index, α_i and β_i are the estimated parameters, and ε_{it} is the error term of the regression. The distributions of stock returns are assumed to be jointly normal, independent and identically distributed over time: thus $E(\varepsilon_{it}) = 0$ and $\text{var}(\varepsilon_{it}) = \sigma^2_{\varepsilon_i}$. Equation 2 is estimated using trading days observations over the period $\{t - 250, t - 50\}$ preceding the filing of the class action suit at $t = 0$. Using the estimated market model parameters, we compute daily abnormal returns for both sued firms and their peers' weighted average observations. The daily abnormal return of a security is computed by subtracting the predicted normal return from the actual return for each day in the event window. Letting $\widehat{\text{AR}}_{it}$ be the abnormal returns for firm i at time t, the sample abnormal return is:

$$\widehat{\text{AR}}_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}) \tag{3}$$

where $\widehat{\text{AR}}_{i\tau}$ is the abnormal rate of return of the security i in the event window, R_{it} is the actual rate of return of the security i in the event window, and $(\hat{\alpha}_i + \hat{\beta}_i R_{m\tau})$ is the expected normal rate of return of the security i in the event window calculated using the market model. The aggregation of abnormal returns is bi-dimensional: through time and across securities and follows the following process. We first compute the average abnormal returns for all i as:

$$\overline{\text{AR}}_t = \frac{1}{N}\sum_{i=1}^{N} \widehat{\text{AR}}_{it} \tag{4}$$

For any security i, we then compute the cumulative abnormal return from τ_1 to τ_2 as the sum of the abnormal returns within that event window:

$$\widehat{\text{CAR}}_i(t_1, t_2) = \sum_{t=t_1}^{t_2} \widehat{\text{AR}}_{it} \tag{5}$$

The average abnormal returns, across the N SCAS companies, are aggregated over the event window as follows:

$$\overline{\text{CAR}}(t_1, t_2) = \sum_{t=t_1}^{t_2} \overline{\text{AR}}_t \tag{6}$$

Finally, we test whether the cumulative abnormal returns are statistically different from zero using the following:

$$\theta_1 = \frac{\overline{\text{CAR}}(t_1, t_2)}{\text{var}(\overline{\text{CAR}}(t_1, t_2))^{1/2}} \sim N(0; 1) \tag{7}$$

This distributional result is asymptotic with respect to the N number of securities and the length of the estimation window (201 trading days in this study).

We follow the same procedure for calculating AR and CAR for the 4-digit SIC code peer group of the sued company, excluding the latter from the estimations.

Event study results

Table VIII reports the event study results.

For SCAS firms, we observed significant, large negative returns for all estimation windows. In the 21-day window, the market price of sued firms dropped by −19.84%. Most of the observed CAR (−17.64%) was generated in the [−10, +1] window, with −7.12% CAR observed in the 3 days around the filing date. The price adjustment process extends, with significant daily abnormal returns up to 3 days after the filing and an additional −2.2% significant CAR up to 10 days after the filing. Interestingly, our results are stronger in size and significance than those reported in Gande and Lewis (2009). We ascribe this evidence to the different nature of the sample adopted. In our sample, we have excluded financial companies and non-capital structure-relevant allegations such as IPO and option backdating-related filings. This different composition suggests that investors in industrial firms react to the information conveyed by the filing as a signal of greater risk exposure associated with all securities and adjust their portfolios accordingly. This adjustment is confirmed by looking at the peer group. Stock price reactions are less strong but still significant, both around the event date and in a longer window, with CAR equal to −0.21, −0.56, and

TABLE VIII

Equity price reaction

Day/window relative to SCAS filing	Reaction of SCAS firms				Reaction of PEERS			
	N	AR/CAR (%)	t	$P > \|t\|$	N	AR/CAR (%)	t	$P > \|t\|$
−10	693	−0.60	−2.63	0.009***	705	−0.04	−0.64	0.520
−9	694	−0.50	−1.89	0.060**	705	−0.05	−0.76	0.448
−8	692	−1.11	−4.18	0.000***	705	−0.04	−0.52	0.602
−7	692	−0.90	−3.56	0.000***	705	0.04	0.44	0.658
−6	693	−1.38	−4.26	0.000***	705	−0.04	−0.47	0.640
−5	692	−0.88	−1.55	0.122	705	−0.01	−0.11	0.915
−4	693	−1.77	−4.89	0.000***	705	−0.03	−0.38	0.700
−3	693	−1.90	−5.68	0.000***	705	−0.17	−2.39	0.017**
−2	688	−1.68	−3.84	0.000***	705	0.16	1.81	0.070*
−1	685	−3.21	−6.81	0.000***	705	−0.10	−1.35	0.177
0	686	−2.34	−5.17	0.000***	705	−0.11	−1.64	0.101
1	687	−1.77	−6.42	0.000***	705	−0.02	−0.21	0.834
2	687	−0.80	−3.30	0.001***	705	−0.29	−3.68	0.000***
3	686	−0.49	−1.86	0.063*	705	−0.06	−0.86	0.389
4	686	−0.23	−0.83	0.405	705	0.04	0.55	0.581
5	685	−0.03	−0.10	0.924	705	0.02	0.30	0.761
6	686	0.05	0.18	0.854	705	−0.04	−0.47	0.637
7	686	−0.43	−1.73	0.084*	705	−0.05	−0.70	0.484
8	686	0.21	0.79	0.431	705	0.08	0.93	0.352
9	686	−0.34	−1.22	0.225	705	−0.04	−0.60	0.550
10	687	−0.20	−0.83	0.406	705	−0.01	−0.20	0.840
[−1, 0]	705	−5.40	−8.38	0.000***	705	−0.21	−2.11	0.036*
[0, +1]	705	−4.00	−7.80	0.000***	705	−0.12	−1.27	0.206
[−1, +1]	705	−7.12	−10.03	0.000***	705	−0.23	−1.73	0.084*
[−5, +5]	705	−14.73	−12.60	0.000***	705	−0.56	−1.98	0.048**
[−10, +10]	705	−19.84	−14.01	0.000***	705	−0.75	−1.92	0.056*
[−10, −2]	705	−10.52	−9.69	0.000***	705	−0.18	−0.73	0.465
[−10, +1]	705	−17.64	−14.04	0.000***	705	−0.41	−1.36	0.173
[+2, +10]	705	−2.20	−3.34	0.001***	705	−0.35	−1.53	0.127

This table reports the cumulative abnormal returns of firms engaged in a corporate scandal (proxied by the filing of a security class action suit), and a value-weighted portfolio of the remaining firms with the same 4-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 daily abnormal return of a security is computed by subtracting the predicted normal return (estimated using the market model) from the actual return for each day in the event window.
Significance at the 1, 5, and 10% level is denoted by ***, **, and * respectively.

−0.75% for, respectively, the [−1, 0], [−5, +5], and [−10, +10] windows.

These price drops may seem somewhat abnormal because companies' litigation damages are generally fully insured and the expected direct and indirect costs should be recovered. Gande and Lewis (2009) suggest that the downward adjustments are the result of shareholders' capitalization of future higher insurance premia, legal costs, and loss of reputation. However, these additional costs are unlikely to be large enough to motivate these price adjustments. A different explanation is related with our previous evidence that companies were involved in a security class action issue significantly more than their peers due to overvaluation. In this spirit, investors may therefore interpret the SCAS filing as a credible

signal of previous overvaluation, thus sharply adjusting stock prices. Such a case carries a straightforward, testable implication: if SCAS reaction is a consequence of previous overvaluation, the magnitude of the reaction should be a function of the severity of the managerial misbehavior that supported inflated prices. Unfortunately, class actions are filed without any explicit monetary claim, making a direct test impossible. However, the filing claims and support documentation should allow investors to understand the likely outcome of the suit. In other words, investors may be able to measure the extent of managerial misbehavior by anticipating the potential monetary outcome. In such a case, CARs should be correlated with the realized SCAS settlements. We test this intuition by regressing the CARs of SCAS firms and peers over the monetary payments imposed by courts, as recorded by court documents extracted from a companion data set of the SSCAC database. Our regressions take the following functional form:

$$\overline{\mathrm{CAR}}_i(t_1, t_2) = \alpha + \beta S_i + \varepsilon_i \qquad (8)$$

where $\overline{\mathrm{CAR}}_i$ is the average Cumulative Abnormal Return over the event window $[t_1, t_2]$ for the i SCAS firms or the control group, and S is the natural logarithm of the monetary settlement at the closing of the Security Class Action measured in millions. Table IX reports outcomes for these tests.

The results support the intuition for all prediction windows with CAR size and significance increasing over the length of the event window. In particular, the larger the monetary settlement, the higher the reactions of the ex-ante investors. This result suggests that investors can meaningfully discriminate between class actions and react accordingly. Peers results are unsurprisingly insignificant: the in-depth analysis of security class action filings is a highly firm-specific task, and investors in other firms most likely react to the filing information per se without extensively screening the case. This generates a contagion effect that is less affected by expected settlement issues for the sued firms.

Similar to the arguments put forth on financing policy decisions, stock price reactions following the announcement of a corporate scandal should be

TABLE IX

CARs and settlement size

	[−1; 0]	[0; 1]	[−1; 1]	[−5; 5]	[−10; 10]	[−10; −2]	[−10; 1]
SCAS							
Intercept	−0.016	−0.032★★★	−0.048★★★	−0.080★★★	−0.135★★★	−0.071★★★	−0.118★★★
$p > \|t\|$	0.161	0.001	0	0	0	0	0
Sett size log	−0.022★★★	−0.007★	−0.016★★★	−0.036★★★	−0.037★★★	−0.016★	−0.032★★★
$p > \|t\|$	0.000	0.068	0.002	0.000	0.001	0.051	0.001
R^2	0.035	0.006	0.015	0.028	0.021	0.007	0.020
F	22.14	3.35	9.97	17.78	12.09	3.82	12.1
$p > F$	0.000	0.067	0.001	0.000	0.001	0.051	0.001
PEERS							
Intercept	−0.004	−0.004	−0.005	−0.012	−0.009	−0.004	−0.009
$p > \|t\|$	0.022★★	0.010★★★	0.020★★	0.009★★★	0.177	0.358	0.065★
Sett size log	0.001	0.001	0.001	0.002	0.000	0.001	0.002
$p > \|t\|$	0.381	0.047★★	0.265	0.182	0.918	0.727	0.422
R^2	0.001	0.006	0.002	0.003	0.000	0.007	0.001
F	0.77	3.95	1.25	1.79	0.01	3.82	0.65
$p > F$	0.387	0.048	0.265	0.182	0.918	0.051	0.422

This table reports the results of a set of regressions of average CARs of SCAS firms and peers over the monetary payments imposed by courts, as recorded by courts documents and extracted from a companion dataset to the SSCASC database. Court documents report settlement in dollar terms. We transformed data in millions and then adopted a natural logarithm transformation. Significance at the 1, 5 and 10% level is denoted with ★★★, ★★, and ★, respectively.

TABLE X

Contagion effect by leverage

Day/window relative to SCAS filing	Reaction of SCAS firms				Reaction of PEERS			
	N	CAR (%)	*t*	$P > \|t\|$	*N*	CAR (%)	*t*	$P > \|t\|$
Sample A: HIGH leverage								
[−1, 0]	242	−5.86	−5.42	0.000***	242	−0.21	−1.35	0.178
[0, +1]	242	−3.43	−4.59	0.000***	242	−0.19	−1.15	0.251
[−1, +1]	242	−7.38	−6.68	0.000***	242	−0.27	−1.36	0.176
[−5, +5]	242	−13.53	−7.24	0.000***	242	−0.46	−1.07	0.285
[−10, +10]	242	−18.66	−8.04	0.000***	242	−0.49	−0.81	0.417
[−10, −2]	242	−8.06	−4.42	0.000***	242	−0.28	−0.83	0.409
[−10, +1]	242	−15.44	−7.54	0.000***	242	−0.55	−1.30	0.195
[+2, +10]	242	−3.22	−3.05	0.003***	242	0.06	0.17	0.869
Sample B: LOW Leverage								
[−1, 0]	251	−4.95	−4.46	0.000***	251	0.00	0.03	0.979
[0, +1]	251	−4.93	−5.31	0.000***	251	−0.02	−0.13	0.896
[−1, +1]	251	−6.93	−5.67	0.000***	251	−0.03	−0.17	0.865
[−5, +5]	251	−14.45	−7.20	0.000***	251	−0.71	−1.80	0.074*
[−10, +10]	251	−20.20	−8.39	0.000***	251	−0.77	−1.28	0.203
[−10, −2]	251	−12.14	−6.95	0.000***	251	−0.57	−1.67	0.097*
[−10, +1]	251	−19.06	−8.83	0.000***	251	−0.61	−1.62	0.107
[+2, +10]	251	−1.13	−1.01	0.315	251	−0.16	−0.42	0.674

This table reports the cumulative abnormal returns of firms engaged in a corporate scandal (proxied by the filing of a security class action suit or a bankruptcy announcement), and a value-weighted portfolio of the remaining firms with the same 4-digit sic code. The sample is divided using a dummy variable equal to one if the SCAS firm was within the 51–100 percentile of book leverage. Results of the market leverage analysis are not presented but remain unchanged.
Significance at the 1, 5, and 10% level is denoted by ***, **, and * respectively.

affected by the existing capital structure of the company and should generate larger effects on the higher degree of similarity of the industry peers across firms, as conjectured in hypothesis 7. Table X provides results for stock price reactions conditional on the degree of leverage of SCAS companies and their peers. Following Lang and Stulz (1992), we sorted firms according to a dummy variable equal to zero if the industry leverage mean was within the 1st and the 50th percentile of the sample in the year of the filing (LOW leverage) and 1 otherwise.

The results show that price reactions for SCAS firms are stronger for LOW-leverage industries than for HIGH-leverage ones. In particular, SCAS firms experience −20.2% CAR over the [−10, +10] window, whereas peers experience a significant −0.71% CAR over the [−5, +5] window. This result is only apparently counterintuitive: unlike in the capital structure analysis, in these tests, we are looking at price reactions to events that may carry a signal of overvaluation. In such a case, an overvalued stock market price would result in lower market leverage. Therefore, when investors react to the SCAS announcement, the price adjustments generate a sharper reduction in price for companies that have high levels of equity and, therefore, low levels of leverage.

In Table XI, we control for cash flow similarity by introducing a dummy variable capturing the correlation of returns between the industry portfolio and the firms engaged in the corporate scandal in the years before the filing of the class action suit. This dummy takes a value of 1 if the correlation of returns falls within the top 50th percentile of the distribution (HIGH correlation) and zero otherwise (LOW correlation).

The results validate the hypothesis highlighting that, for the HIGH correlation group, the contagion effect is approximately 25% stronger in both the [−5, +5] and [−10, +10] windows. In addition,

TABLE XI

Contagion effect and correlation of stock returns

Day/window relative to SCAS filing	Reaction of SCAS firms				Reaction of PEERS			
	N	AR/CAR (%)	t	$P > \|t\|$	N	AR/CAR (%)	t	$P > \|t\|$
Sample A: HIGH correlation of returns								
[−1, 0]	344	−5.99	−6.71	0.000***	344	−0.21	−1.68	0.093*
[0, +1]	344	−3.91	−5.18	0.000***	344	−0.13	−0.88	0.379
[−1, +1]	344	−7.31	−7.34	0.000***	344	−0.24	−1.32	0.188
[−5, +5]	344	−14.69	−9.70	0.000***	344	−0.72	−2.00	0.046**
[−10, +10]	344	−18.74	−9.98	0.000***	344	−0.94	−1.71	0.089*
[−10, −2]	344	−10.56	−7.86	0.000***	344	−0.54	−1.84	0.067*
[−10, +1]	344	−17.88	−10.62	0.000***	344	−0.77	−2.10	0.036**
[+2, +10]	344	−0.86	−1.09	0.278	344	−0.16	−0.48	0.629
Sample B: LOW correlation of returns								
[−1, 0]	361	−4.83	−5.22	0.000***	361	−0.21	−1.37	0.173
[0, +1]	361	−4.09	−5.86	0.000***	361	−0.12	−0.91	0.365
[−1, +1]	361	−6.94	−6.86	0.000***	361	−0.22	−1.14	0.256
[−5, +5]	361	−14.77	−8.34	0.000***	361	−0.40	−0.94	0.349
[−10, +10]	361	−20.89	−9.9	0.000***	361	−0.58	−1.03	0.304
[−10, −2]	361	−10.49	−6.19	0.000***	361	0.16	0.40	0.687
[−10, +1]	361	−17.42	−9.37	0.000***	361	−0.06	−0.12	0.901
[+2, +10]	361	−3.46	−3.36	0.001***	361	−0.52	−1.71	0.088

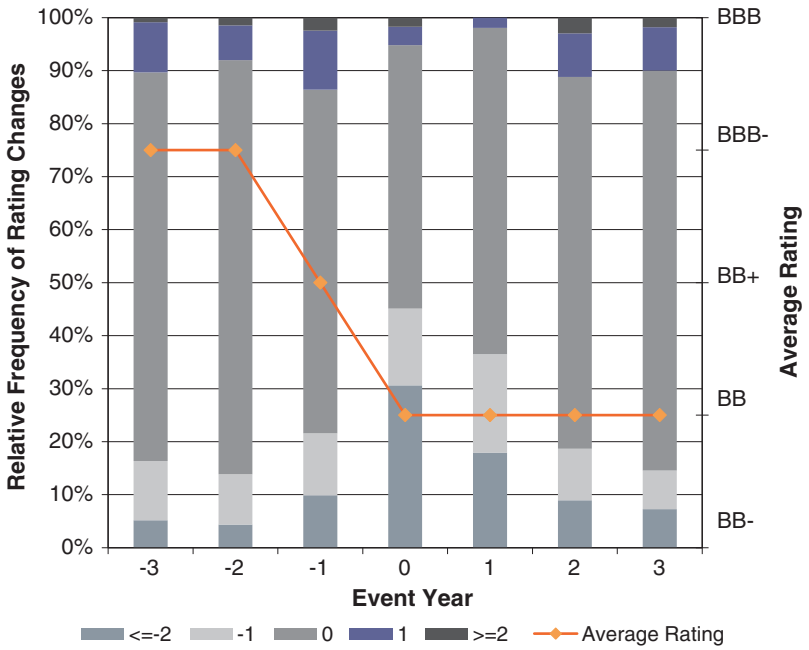
This table reports the cumulative abnormal returns of firms engaged in a corporate scandal (proxied by the filing of a security class action suit), and a value-weighted portfolio of the remaining firms with the same 4-digit sic code (by event year). The event year ($t = 0$) is defined as the year in which the security class action suit was filed against the firm. The daily abnormal return of a security is computed by subtracting the predicted normal return (estimated using the market model) from the actual return for each day in the event window. The high/low correlation of returns dummy is defined as: 0 if correlations of returns (between SCAS and PEERS in the year preceding the filing) lies within the [1–50th] percentile, and 1 if it lies within the [51–100]th percentile in the year before the filing of the SCAS.
Significance at the 1, 5, and 10% level is denoted by ***, **, and * respectively.

significant negative reactions are observed for the [−10, −2] and [−10, +1] windows, supporting the idea that investors in the peer group are sensitive to the information incorporated in the SCAS filing if the sued firm and its competitors have similar operations and, therefore, similar risk exposure.

This intuition is confirmed by the insignificance of the results for the LOW correlation sub-sample in any window.

Debt

The previous results highlight that SCAS companies raise more equity than their peers by fraudulently exploiting information asymmetries with outside investors. The value of this information is captured by the sharp stock price reactions following the disclosure of managerial misconduct. However, our results show that SCAS companies also issued more debt in the period before the SCAS filing and that debtholders may be similarly affected by losses in value. If the information kept undisclosed at debt issuance is valuable, then we should observe two effects upon its disclosure through the SCAS filing: first, a larger number of downgrades and a smaller number of upgrades in the period following the filing; and second, a consistent and stable drop in the average rating after the SCAS. We test this intuition by looking at the ratings and rating



Variable	Obs	Mean	Mean (diff)	Pr(|T|>|t|)[1]	Pr(T>t)[2]	Pr(T<t)[3]
SCAS companies rating before the SCAS filing	3205	10.789 (BB+)				
SCAS companies rating before the SCAS filing	3119	11.891 (BB)	-1.102	0.000 (***)	1.000	0.000 (***)

[1]Ha: mean(diff) ≠ 0
[2]Ha: mean(diff) > 0
[3]Ha: mean(diff) < 0

Figure 3. Ratings and rating changes. This figure reports the average rating of SCAS companies over the period {−3; 3} where 0 is the SCAS filing event date, the relative frequencies of rating yearly changes and the *t*-test for difference in the sample's rating means before and after the event. The average yearly rating is plotted by the *solid line* on the *right axis* scale; the relative frequencies of rating changes for the five different notch change classes are measured by the bar stacks on the *left axis* scale; the notch change classes measure rating changes on the same company in two contiguous dates and read as follows: "≤−2" indicating a two or more notches downgrading; "−1" indicating a one notch downgrading; "0" indicating a confirmed rating; "1" indicating a one notch upgrading; "≥2" indicating a positive two or more notch upgrading. Difference in the means are tested against the null hypothesis of no difference. Significance at the 1, 5, and 10% level is denoted by ⋆⋆⋆, ⋆⋆, and ⋆ respectively.

changes of the companies involved in a security class action, before and after the filing date. We collected S&P ratings for SCAS companies in the 7-year period around the event date, i.e., {−3; 3}, and we calculated the average rating and changes in rating. S&P ratings were expressed using a nominal 21-step scale ranging from AAA (highest quality) to D (default). We ordinally converted each rating into a numeric format with 1 representing AAA and 21 representing D. A one-notch change is expressed by a one-integer decrease for downgrades and a one-integer increase for upgrades. We then used the numeric rating to calculate the average rating and rating changes over the event window. The results reported in Figure 3 robustly support the hypothesis that debtholders' value is affected by managerial misconduct.

Following the filing of a SCAS, the average rating dropped by more than one notch, from an average rating of BB+ to BB, and the difference is significant

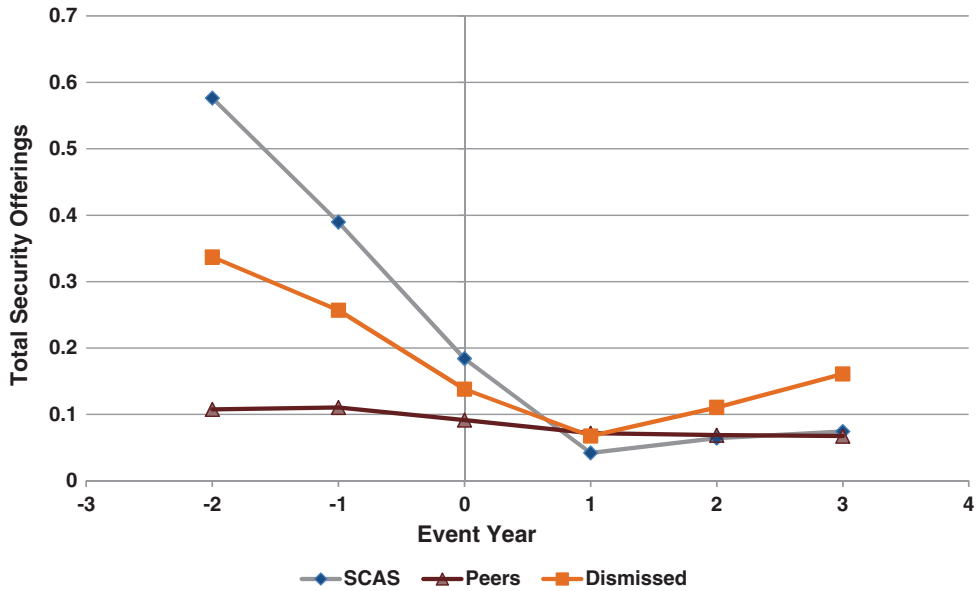


Figure 4. SCAS, Dismissed and Industry security issuance. This figure plots security issuances for SCAS companies, the Industry peers and the Dismissed control group. *Dots* represent the actual amount of total security issuance (Debt and equity). *zero* represent the event year.

at the 1% level. The frequency of downgrades increases significantly, and downgrades are much more severe than before the filing. Inversely, upgrades decrease significantly, and large upgrades disappear. Up to 3 years after the event, there is no evidence of a recovery in rating quality, indicating that the information disclosed in the SCAS filing was extremely valuable in the assessment of the long-term prospects of the issuing company (Figure 4).

Robustness tests

Capital structure regressions

Our results show robust evidence of abnormally higher security issuance by SCAS companies. We interpret this result as a rational choice by managers who did not fully disclose information on the company because truthful revelation may have resulted in higher financing costs, affect managerial independence, and reduce personal benefits. However, our evidence may be the result of a genuine higher need for capital by SCAS companies rather than the effect of a strategic use of asymmetric information. Following Rajan and Zingales (1995) and Baker and Wurgler (2002), we control the robustness of our conclusions for a set of additional determinants of capital structure. Previous results showed that SCAS firms issue largely in excess of their peers before the scandal but insignificantly different from peers after the class-action filing. The abnormal issuance pattern is downward sloping, i.e., it reduces the closer the company is to the filing date, which we argued is a signal that managers can approximately anticipate the lawsuit filing. Because our objective was to test whether a SCAS triggers a significant change in the issuance decisions by SCAS companies and their peers conditional on the scandal revelation, we minimized the trend effect in our data by aggregating SCAS and peers observations into two groups: PRE and POST. In the PRE group, we calculated average security issuances and control variables figures for 4 years before the filing, i.e., $\{-3, 0\}$. In the POST group, we calculated averages for the same variables for 3 years following the filing, $\{+1, +3\}$. This approach has the additional advantage of minimizing the problems associated with serial correlation in yearly-security issuance data, as highlighted in Bertrand et al. (2004). Our multivariate industry's fixed-effects regression takes the following form:

$$Y_i = \alpha + \beta_1 \,\text{GROUP} + \beta_2 \,\text{EVENT} + \beta_3 \,\text{GROUP} \star \text{EVENT} + \beta_4 \,\text{MTB}_i + \beta_5 \,\text{LogSIZE}_i + \beta_6 \,\text{EBITDA/TA}_i + \beta_7 \,\text{PPE/TA}_i + \beta_8 \,\text{BETA}_i + \text{FE} + \varepsilon_i \quad (9)$$

where Y_i is the dependent variable capturing total issuance by firm i, GROUP is the group operator taking value of 1 for SCAS companies, and 0 otherwise; and *EVENT* is the time operator taking value of 1 for pre-filing figures and 0 for post-filing observations, GROUP ⋆ EVENT is the interaction term, MTB is the Market-to-Book ratio, LogSIZE is the natural logarithm of the market capitalization of the company, EBITDA/TA is a profitability measure calculated by scaling operating profits by total assets, PPE/TA is a fixed assets intensity measure calculated as the total fixed assets scaled by total assets, BETA is the risk of the company measured by the CRSP stock beta, and FE captures the industry's Fixed Effects based on the 41 Fama–French industries in our sample. Our previous results could be confirmed by a significant and positive parameter for the interaction term.

Results reported in Table XII support our previous analysis and provide additional intuitions.

Column 1–3 report results for the full sample of SCAS companies and peers. The interaction term is positive and strongly significant for all issuance measures. The EVENT parameter is small but positive, which suggests the existence of a weak contagion effect as both peers and SCAS issue less after the event, consistent with results reported in Figure 2 and Table V. The GROUP parameter is negative and significant for debt issuance and for total security offerings, supporting arguments put forth in "Financial mix: equity and debt offerings" section. The control variables are significant in total security and equity issuance models only. Variables signs for all models are aligned with those estimated in Rajan and Zingales (1995) and in Baker and Wurgler (2002), with the exception of the profitability variable for equity issuances that should be positive because raising equity determines a contraction in leverage. The signs of the estimated parameter for the Beta regressors, although insignificant, are aligned with standard literature prediction, indicating that riskier firms issue comparably more equity than debt. The relatively low R^2 is not surprising because approximately 25% of our observations capture an issuance behavior by SCAS companies that we argue is abnormal and eventually disappears. The sign and significance of the interaction term support this interpretation but we provide further supporting evidence by running a set of regressions on the peers group only, including both PRE and POST data. We expected to obtain higher explanatory power of the regressions and parameters' significance. Results reported in column 4–6 confirm our intuition: R^2 increases sharply, and signs in the Debt and Equity models are largely significant and aligned with the previous literature with the only exception given by the EBITDA/TA parameter that is positive and significant for Debt issuance, whereas it is negative in Rajan and Zingales (1995) and in Baker and Wurgler (2002). Similarly, the sign is inverted in the Equity model although the estimated parameter is very small and insignificant. Finally, BETA parameters align with previous regressions and become significant, providing further support to the economic interpretation of our results.

Reverse causality

A possible concern in our analysis is the existence of a reverse-causality issue, i.e., the possibility that SCAS are initiated because investors observe abnormal security issuances, suggesting a "deep pocket" motivation for the initiation of the legal action. Intuitively, this should not be the case because the amendment to the Security Class Action regulation requires accurate and grounded hints of possible mismanagement and of the alleged effects on securities value. However, we cannot rule out the possibility of selection biases in the decision to initiate a class-action suit. In particular, we argue that if reverse-causality is in effect, we should observe differential evidence with respect to size and risk. Larger firms may be more likely than smaller firms to be sued because of the expectation of larger monetary settlements. On a different level, high-risk firms may show increased vulnerability to legal actions because of a behavioral bias on the part of investors in interpreting risk. More precisely, higher volatility in returns and valuations may be interpreted as a sign of managerial misconduct rather than as a normal effect of higher intrinsic risk, triggering a larger number of filings for high-risk companies. To

TABLE XII

Determinants of security offerings

Dependent variable	SCAS and Peers sample			Peers only		
	Total security offerings	Equity offerings	Debt offerings	Total security offerings	Equity offerings	Debt offerings
Intercept	0.250*** (2.93)	0.254*** (3.30)	−0.003 (−0.11)	0.150*** (6.00)	0.120*** (9.36)	0.033* (1.89)
Group	−0.069** (−2.42)	−0.028 (−1.59)	−0.045** (−2.52)			
Event	0.032*** (3.07)	0.019*** (3.05)	0.013** (1.97)			
Group*Event	0.336*** (6.44)	0.211*** (5.53)	0.127*** (4.33)			
MTB	−0.000 (−0.29)	−0.001 (−0.49)	0.000 (0.91)	0.002** (2.43)	0.001** (2.55)	0.000 (1.19)
LogSize	−0.032** (−2.32)	−0.036*** (−3.03)	0.000 (0.80)	−0.013*** (−3.67)	−0.014*** (−6.95)	0.000 (0.39)
EBITDA/TA	−0.019 (−1.43)	−0.011* (−1.71)	−0.009 (−0.89)	0.003*** (3.21)	−0.000 (−1.25)	0.004*** (5.13)
PPE/TA	−0.005 (−0.58)	−0.007 (−1.19)	0.002 (0.49)	−0.000 (−0.30)	−0.003* (−1.88)	0.003** (2.28)
Beta	0.039 (0.75)	0.049 (1.49)	−0.009 (−0.39)	0.037*** (2.69)	0.040*** (4.89)	−0.006 (−0.63)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	2385	2385	2389	1331	1331	1331
R^2	0.075	0.096	0.022	0.257	0.291	0.237
F	15.25	17.30	5.852	4.967	12.69	7.669

In this table, we test the robustness of previous results controlling for alternative determinants of Capital Structure. We run a set of Multivariate Fixed Effects regressions taking the following functional form: $Y_i = \alpha + \beta_1\,\mathrm{GROUP} + \beta_2\,\mathrm{EVENT} + \beta_3\,\mathrm{GROUP} \star \mathrm{EVENT} + \beta_4\,\mathrm{MTBi} + \beta_6\,\mathrm{LogSize}_i + \beta_6\,\mathrm{EBITDA/TAi} + \beta_7\,\mathrm{PPE/TA}_i + \beta_8\ \mathrm{Beta} + \mathrm{FE} + \varepsilon$, where Y_i is the dependent variable capturing Total issuance, Equity issuance, or Debt issuance; GROUP is the group operator taking value of 1 for SCAS companies, and 0 otherwise; EVENT is the time operator taking value of 1 for pre-filing figures and 0 for post-filing observations; GROUP*EVENT is the interaction term; MTB is the Market-to-Book ratio; Beta is the risk of the company measured by the average stock beta; LogSIZE is the natural logarithm market capitalization of the company, and EBITDA/TA is the ratio of EBITDA over Total Assets; PPE/TA is the level of Fixed Assets scaled by Total assets and Beta is the CRSP market Beta. All independent variables are calculated as average values before and after the filing. Robust standard error are reported in parentheses. Significance at the 1, 5, and 10% level is denoted by ***, **, *, respectively.

control for these possible effects, we ran a separate set of tests controlling whether larger companies were more likely to be sued than smaller companies, as measured by the average and median size of companies in the SCAS sample as opposed to that of their peers. Similarly, we sorted firms by risk level as measured by beta and controlled for the sample characteristics and the empirical evidence of capital raising and stock price reaction. For both tests, we found no evidence of a differential role for size and risk.[4] Finally, we introduced an instrumental variable to conclusively test for reverse causality issues. We identified as the appropriate instrument the set of companies involved in a security class action, where the lawsuit outcome has been a dismissal. The rationale for this approach is that if investors are more likely to initiate a legal action against companies that issue more because they correlate abnormal issuance with a higher probability of managerial misconduct, then we should observe a similar security issuance pattern for SCAS and dismissed companies before the filing and no differences within the two groups or with the peer group after the filing. The empirical results do not support this hypothesis; we observe a significantly different pattern of security issuance between the SCAS group and the dismissed group.

In particular, the dismissed group shows a much more stable level of abnormal security issuance, clustered at about twice the level for the industry. In addition, the dismissed group issuance before the filing is up to 60% lower than that of the SCAS sample. Also, and not surprisingly, the issuance pattern decreases around the filing date but reverts back to a level above the industry average and its own average after 1 year, indicating that security issuance above the peers' average level was motivated by actual financing needs related to development, operations, and expansion. Lastly, though the SCAS group security issuance pattern did not differ meaningfully from that of their peer group after the filing, the dismissed group's capital-raising pattern was significantly above the industry's average.

Market sentiment, Chapter 11, size, and type of allegation effects on capital structure and stock prices

Several factors may likely have affected the intensity of our results. In this section, we perform a set of robustness tests by checking the capital structure and event study outcomes, conditional on the market sentiment in the year of the SCAS filing, the severity of the allegations as measured by whether the sued firm files for bankruptcy, the size of the companies (both the SCAS-targeted company and its peers), and the type of allegation.

Table XIII summarizes the tests' outcomes.

Sentiment of the filing year

Arguably, market reactions should be stronger in negative market-sentiment years: if the market is already in a downturn, then additional negative news will further increase the negative momentum of the stock and the expectations of the industry. In contrast, in positive market sentiment years, investors may be more lenient toward both sued companies and their peers, which will result in weaker reactions to both capital structure adjustments and prices. Using the sentiment index of Baker and Wurgler (2006), we ran analyses to identify whether the market sentiment of the SCAS filing year was high or low. All of the results were robust for both the capital structure and stock price hypotheses; as expected, the results were relatively stronger in low sentiment years.

Chapter 11 filing

In the previous section, we showed that investors seem to possess the ability to determine the severity of SCAS cases and react accordingly. In this spirit, particularly severe cases ultimately ending in a bankruptcy filing should generate stronger effects on both SCAS firms and their peers. We control for this possible effect by matching our data with LoPucki's Bankruptcy Research Database at UCLA, generating a subsample given by sued companies that filed for Chapter 11 in the 2 years before and 2 years after the SCAS filing. The results support the concept, with the exception of the book leverage pattern of SCAS firms, which did not decrease significantly before the filing.

Size

In the previous paragraph, we controlled for a possible selection bias toward bigger firms. However, size may still be important in interpreting some cross-sectional variation in the results because information on large firms may provide stronger signals to the industry than those delivered by smaller firms. In a set of tests, we controlled for size using two different measures: first,

TABLE XIII

Robustness tests summary outcomes

Control 1: Sentiment of the filing year	High sentiment	Low sentiment
Hypothesis 1: ex-ante SCAS issuances > PEERS issuances	Yes	Yes (higher means)
Hypothesis 2: ex-ante SCAS equity issuance > PEERS equity issuance	Yes	Yes
Hypothesis 3: ex-ante SCAS book leverage < PEERS book leverage	Yes	Yes
Hypothesis 4: ex-post SCAS issuances = PEERS issuances	Yes	Yes
Hypothesis 6 (Contagion): ex-post contraction of both debt and equity issuances for PEERS	Yes	Yes
Hypothesis 7 (Contagion 2): stock prices drop also for PEERS around SCAS filing date	Yes	Yes
Control 2: Chapter 11 filing	Bankruptcy filing	No bankruptcy filing
Hypothesis 1: ex-ante SCAS issuances > PEERS issuances	Yes (smaller difference)	Yes
Hypothesis 2: ex-ante SCAS equity issuance > PEERS equity issuance	Yes (smaller difference)	Yes
Hypothesis 3: ex-ante SCAS book leverage < PEERS book leverage	No (stable book leverage before SCAS filing)	Yes
Hypothesis 4: ex-post SCAS issuances = PEERS issuances	Yes	Yes
Hypothesis 6 (Contagion): ex-post contraction of both debt and equity issuances for PEERS	Yes	Yes
Hypothesis 7 (Contagion 2): stock prices drop also for PEERS around SCAS filing date	Yes	Yes
Control 3a: Firms size in the filing year (within SCAS cases)	Large firms	Small firms
Hypothesis 1: ex-ante SCAS issuances > PEERS issuances	Yes	Yes
Hypothesis 2: ex-ante SCAS equity issuance > PEERS equity issuance	Yes (smaller difference)	Yes (greater difference)
Hypothesis 3: ex-ante SCAS book leverage < PEERS book leverage	Yes	Yes
Hypothesis 4: ex-post SCAS issuances = PEERS issuances	Yes	Yes
Hypothesis 6 (Contagion): ex-post contraction of both debt and equity issuances for PEERS	Yes	Yes
Hypothesis 7 (Contagion 2): stock prices drop also for PEERS around SCAS filing date	Yes	Yes
Control 3b: Firms size in the filing year (within industry)	Large firms	Small firms
Hypothesis 1: ex-ante SCAS issuances > PEERS issuances	Yes (greater difference)	Yes (greater difference)
Hypothesis 2: ex-ante SCAS equity issuance > PEERS equity issuance	Yes (smaller difference)	Yes
Hypothesis 3: ex-ante SCAS book leverage < PEERS book leverage	Yes	Yes
Hypothesis 4: ex-post SCAS issuances = PEERS issuances	Yes	Yes

TABLE XIII

continued

Control 3b: Firms size in the filing year (within industry)	Large firms	Small firms
Hypothesis 6 (Contagion): ex-post contraction of both debt and equity issuances for PEERS	Yes	Yes
Hypothesis 7 (Contagion 2): stock prices drop also for PEERS around SCAS filing date	Yes	Yes
Control 4: Type of allegations	**Accounting**	**Non-accounting**
Hypothesis 1: ex-ante SCAS issuances > PEERS issuances	Yes	Yes
Hypothesis 2: ex-ante SCAS equity issuance > PEERS equity issuance	Yes	Yes
Hypothesis 3: ex-ante SCAS book leverage < PEERS book leverage	No	Yes
Hypothesis 4: ex-post SCAS issuances = PEERS issuances	Yes	Yes
Hypothesis 6 (Contagion): ex-post contraction of both debt and equity issuances for PEERS	Yes	Yes
Hypothesis 7 (Contagion 2): stock prices drop also for PEERS around SCAS filing date	Yes	Yes

This table presents qualitative results for a set of robustness tests on all six hypothesis. The first set of tests controls for the sentiment of the SCAS filing year as measured by the Sentiment index in Baker and Wurgler (2006). The second set of tests controls for the bankruptcy filing of the SCAS firms in the 2 years after the SCAS filing. The third and fourth sets of tests control for the company size measured as the market value of Total Assets relative to the SCAS sample (control 3a) and the market value of Total Assets relative to the industry (control 3b). The fifth set of test controls for the type of SCAS allegation. All controls are performed by dividing the sample into two subgroups according to the test criterion. In all tests "Yes" indicate that the results are significant and aligned in sign and size with the hypothesis. If results are significant and aligned in size but different in magnitude, then the observed difference is reported in parentheses. "No" indicates insignificant results or results not confirming the hypothesis.

we looked at the size of the SCAS firms as measured by total assets, dividing the sample into BIG and SMALL based on whether the SCAS firm total assets fall within the 51st and 100th percentile of the SCAS firms sample. We modeled the second measure in a similar fashion looking at the relative ranking of total assets with respect to the whole industry. The results are aligned with the expectations and offer some interesting additional evidence. In particular, the volume of security issuance for big SCAS firms according to the industry measure decreases sharply, falling below the peer average after the filing; this result suggests that the market penalizes big firms relatively more than small ones. This effect seems to be known to small firms, which issue more than the aggregate SCAS' firm samples.

Type of allegations

Finally, we control for the security issuance pattern conditional on the type of allegation of the SCAS. We have previously shown that accounting allegations generate stronger price reactions around the filing date. However, though investors may be immediately less sensitive to the information conveyed by a non-accounting-related filing, they may process this additional information in the long term, which will affect the future financing patterns of sued companies and, through contagion, those of their peers as well. The results fully support this intuition, showing no meaningful differences in the outcomes of the capital structure tests for accounting- and non-accounting-related security class actions.

Conclusions

Corporate scandals have attracted considerable attention because their large, negative effects on shareholder value. In this article, we argue that corporate managers are aware of these effects and try to anticipate higher future costs in capital raising by abnormally issuing more securities before a corporate scandal is unveiled. By measuring corporate scandals as the filing of SCASs, we additionally argue that investors may interpret such an event as a signal of deterioration in the industry as a whole, thus generating significant negative contagion effects on the capital-raising opportunities and share price levels of a firm's competitors. Our results provide robust evidence that firms involved in a corporate scandal issue significantly more securities before the filing; also, in particular, they raise more equity than their industry peers. After a scandal surfaces, both sued firms and their peers face constraints in further capital raising, which results in decreasing issuance and lower bond ratings. In addition, we document significant stock and bond price effects around the SCAS filing date that affect all industry constituents. Both capital structure and the share price reactions increase based on the similarity of the operating and financial characteristics of sued firms and their industry peers. Our results suggest that managers ''time'' the market by exploiting transient overvaluation in anticipation of future more costly or reduced fund-raising opportunities. However, markets evaluate information revealed in a corporate scandal as a possibly widespread phenomenon, generating negative fall-out that also affects peers' financing opportunities. These results have important implications because they suggest that financial structures are the result of not only firm-level choices and market conditions, as suggested by Baker and Wurgler (2006), but also of industry-level information and behavioral components of managerial decisions.

Notes

[1] Database is maintained in cooperation with Cornerstone Research.

[2] The majority of cases in the database were classified as Classic. ''Classic'' cases are cases involving 10(b) claims (misstatements or omissions) and/or other common securities law violations. Classic cases are also all cases that are not IPO Allocation, Analyst, or Mutual Fund cases. IPO Allocation cases are cases filed from 2001 to 2002 alleging that underwriters engaged in undisclosed practices in connection with the distribution of certain IPO shares. Analyst-related cases are cases filed from 2001 to 2004 alleging that the brokerage firm analysts falsely provided favorable coverage for certain issuers. These Analyst cases involved securities directly affected by allegedly false analyst research reports. Mutual Fund cases are cases filed from 2003 to 2004 alleging wrongful acts in the management of the funds.

[3] Debt and equity issues could also be measured using cash flow data. We used balance sheet data because there were more data available, and thus, the amount of cases under analysis was larger.

[4] The full set of tests is available through the Internet Appendix.

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Corporate Fraud and Managers' Behavior: Evidence from the Press

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ABSTRACT. Based on evidence from press articles covering 39 corporate fraud cases that went public during the period 1992–2005, the objective of this article is to examine the role of managers' behavior in the commitment of the fraud. This study integrates the fraud triangle (FT) and the theory of planned behavior (TPB) to gain a better understanding of fraud cases. The results of the analysis suggest that personality traits appear to be a major fraud-risk factor. The analysis was further validated through a quantitative analysis of keywords which confirmed that keywords associated with the attitudes/rationalizations component of the integrated theory were predominately found in fraud firms as opposed to a sample of control firms. The results of the study suggest that auditors should evaluate the ethics of management through the components of the TPB: the assessment of attitude, subjective norms, perceived behavioral control and moral obligation. Therefore, it is potentially important that the professional standards that are related to fraud detection strengthen the emphasis on managers' behavior that may be associated with unethical behavior.

KEY WORDS: corporate fraud, fraud triangle, theory of planned behavior, managerial ethics, personality traits, fraud-related professional standards

Introduction

Starting in the late 1990s, a wave of corporate frauds in the United States occurred with Enron's failure perhaps being the emblematic example. The objective of this study is to explore fraud cases as documented in the press, to determine if managers' behavior may be associated with unethical behavior that plays a role in this fraud and, finally, to study how current fraud-related auditing standards incorporate managers' behavior as a potential signal for unethical behavior.

An examination of prior literature reveals that the likelihood of committing fraud has typically been investigated using financial and/or governance variables (e.g., Abbott et al., 2004; Agrawal and Chadha, 2005; Beasley, 1996; Caruso, 2002; Erickson et al., 2006; Farber, 2005; Kinney et al., 2004; Srinivasan, 2005).[1] The moral, ethical, psychological and sociological aspects of fraud have also been covered by the literature. Albrecht et al. (1982, pp. 31–37) suggest that there are three explanations for crime: psychological, sociological, and moral development. The ethical component of several corporate scandals has been documented. For example, Zandstra (2002, p. 16) posits that the central reason for Enron's demise was a failure of the board of directors to function in a morally and ethically responsible manner.[2]

Rezaee (2002, 2005) finds five interactive factors that explain several high-profile financial statement frauds. These factors are: cooks, recipes, incentives, monitoring, and end results (CRIME). Choo and Tan (2007) explain corporate fraud by relating the fraud triangle to the ''broken trust theory'' introduced by Albrecht et al. (2004) and to an ''American Dream'' theory[3] which originates from the sociological literature while Schrand and Zechman (2007) relate executive overconfidence to the commitment of fraud. Collectively, these studies suggest that psychological and moral components are important for gaining an understanding of what causes unethical behavior to occur that could eventually lead to fraud.

However, the manager's behavior in fraud commitment has been relatively unexplored.[4]

Accordingly, the overarching objective of this article is to examine managers' unethical behaviors in documented corporate fraud cases on the basis of press articles, which constitute an ex-post evaluation of alleged or acknowledged fraud cases.

To evaluate potential influences on committing corporate fraud, this article integrates the theory of the fraud triangle, which states that corporate fraud is a function of incentives, opportunities and attitudes/rationalizations, and the theory of planned behavior (TPB; Ajzen, 1985, 1988, 1991), which incorporates attitude, subjective norms, perceived behavioral control, and moral obligation (Beck and Ajzen, 1991). We then apply the combined theories to a large number of high-profile corporate frauds based on publicly available press articles containing managers' quotes and journalists' analyses. The results of our analysis confirm that attitudes/rationalization appear to be a key risk factor for corporate frauds and that the fraud triangle, integrated with the TPB, is a useful framework for analyzing unethical behavior by managers that are associated with corporate fraud.

The analysis was further validated through a quantitative analysis of keywords which confirmed that keywords associated with the attitudes/rationalizations component of the integrated theory were predominately found in fraud firms as opposed to a sample of control firms.

A close analysis of existing professional standards in auditing reveals that managers' personality traits and ethics are not sufficiently emphasized. In the relevant fraud detection standards in the U.S. (SAS 99) (AICPA, 2002) and internationally (ISA 240) (IFAC (International Federation of Accountants), 2005, 2009), personality traits and ethics are mostly covered under the rubric of "attitude." In SAS 99, for example, this concept is not defined with an emphasis on attitudinal factors. The standard only refers to "some individuals [who] possess an *attitude*, character, or set of ethical values" (Para. 7) [emphasis in the original text]. Therefore, our article suggests that regulators should place greater consideration on ethics in the officially promulgated auditing standards in order to enhance the ability of auditors to be more effective in detecting corporate fraud.

We contribute to the existing literature on corporate fraud in the following ways: (1) from a theoretical perspective, we demonstrate a complementarity between the fraud triangle and the TPB as they are applied to unethical behavior as manifested in fraud cases; (2) from a methodological perspective, we examine *documented* behaviors – not, as in prior studies, *intended* behaviors – of corporate fraud cases, as identified by the press[5], and (3), from a regulatory perspective, we highlight some room for improvement in fraud-related professional standards.

The remainder of this article is organized as follows. The next section presents our theoretical framework, which is based on the fraud triangle and the TPB. The following sections discuss the research methodology, our results and a robustness analysis. The last two sections present a discussion (with limitations) and some directions for future research.

Corporate fraud: the theoretical framework

Several conceptual frameworks have been put forward to investigate why managers engage in unethical behavior that leads to corporate fraud. In this section, we define the concepts of fraud and the "fraud triangle"[6] that led to the relevant professional auditing standards regulation. We then highlight two complementary perspectives, the fraud triangle and the TPB: both are of potential use to understand managers' unethical behaviors as observed in fraud.

Fraud and behavior in auditing regulation

We are interested in accounting or corporate "fraud," as defined in SAS No. 99 (AICPA, 2002, Para. 5): "fraud is an intentional act that results in a material misstatement in financial statements that are the subject of an audit." Two types of misstatements are relevant to the auditor's consideration of fraud – misstatements arising from fraudulent financial reporting and misstatements arising from misappropriation of assets (AICPA, 2002, Para. 6). All of the cases examined in this article are documented examples of fraudulent financial reporting, and some also include misappropriation of assets, as indicated in Table I and Appendix B.

In the previous literature, breaking down overall fraud-risk assessments into separate assessments for management's (1) incentives/pressures, (2) opportunities and (3) attitudes/rationalizations is often referred to as the fraud-triangle decomposition

(Wilks and Zimbelman, 2004) or, in short, the fraud triangle. These elements were first identified by Sutherland (1949) and developed by Cressey (1953, p. 30).[7] Albrecht et al. (1982, p. 37) adapted the concept from criminology to accounting and reinforced the decomposition with a review of over 1,500 references on fraud. They identified 82 fraud-related variables, which are combined into three categories: situational pressures, opportunities to commit fraud and personal integrity (character).

Auditing regulation (AICPA, 1988, 1997, 2002) has outlined numerous fraud-risk factors. These indicators are also called "red flags" and represent "potential symptoms existing within the company's business environment that would indicate a higher risk of an intentional misstatement of the financial statements" (Pincus, 1989; Price Waterhouse, 1985). Compared to its predecessors, the most recent standard, SAS No. 99 (AICPA, 2002, Para. 7) has organized risk factors by reference to three conditions generally present when fraud occurs. "First, management or other employees have an *incentive* or are under *pressure*, which provides a reason to commit fraud. Second, circumstances exist – for example, the absence of controls, ineffective controls, or the ability of management to override controls – that provide an *opportunity* for a fraud to be perpetrated. Third, those involved are able to *rationalize* committing a fraudulent act. Some individuals possess an *attitude*, character, or set of ethical values that allow them to knowingly and intentionally commit a dishonest act" (italics in the original text). These definitions are directly linked to the fraud triangle. Thus, the fraud triangle can help predict the context in which managers may act unethically and help perpetuate fraud.

Empirical research has been carried out to demonstrate the importance of the "incentives" factor in the commitment of the fraud, such as the need to meet an aggressive earnings target (Albrecht and Romney, 1986; Bell and Carcello, 2000; Loebbecke et al., 1989). However, when we look closer at the evolution of the auditing regulation, we observe that there is an increasing concern for fraud in auditing regulation since the 1980s and an increasing integration of the attitudes/rationalizations factor. The individualization of this concept constitutes an improvement in the evolution of the auditing standards (from SAS 53 to SAS 99[8]). However, if we pay more attention to the relevant section of SAS 99 quoted above, "attitude," although highlighted with the italicized characters, is one of the individual's characteristics: as mentioned earlier, the text also mentions the "character and set of ethical values" of the individual. The text does not explicitly define the concept of "attitude." Further, in the "examples of fraud risk factors" relating to fraudulent financial reporting (AICPA, 2002, p. 44, Appendix), section "Attitudes/Rationalizations," the first example concerns the "Ineffective communication, implementation, support, or enforcement of the entity's values or ethical standards by management or the communication of inappropriate values or ethical standards." This item is mostly related to the firm's ethics. No other item focuses directly on individual ethics or managers' personality traits.[9]

Very important information regarding the detection of fraud is located in the "attitudes/rationalizations" corner of the fraud triangle. Of the three points of the fraud triangle, this corner is arguably the most difficult for the auditor to assess. Attitudes and rationalizations are cognitive and therefore internal by nature. They may be hidden or suppressed in order to deceive. Often, the best the auditor can do is to make inferences as to the attitudes that managers may possess. An effort to better understand this corner of the fraud triangle can potentially help provide insights that may help the auditors improve their ability to understand when the threat of fraud is heightened. Moreover, a list of risk-fraud factors (even non-comprehensive) drawn from previous fraud cases can be very helpful for guiding auditors in their task.

This discussion leads us to a preliminary conclusion: the question of the comprehensiveness of auditing guidelines in relation to this factor remains open to further investigation. Thus, since the concept of *attitude*, which proxies for the manager's behavior, is not defined as such in the auditing standards, it becomes necessary to refer to a second theory, the TPB, to understand this concept.

Theory of planned behavior (TPB)

In social psychology, Ajzen (1991, p. 179, 2001) 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 (1) attitudes toward the behavior, (2) subjective norms and (3) perceived behavioral control. This is known as the TPB.

According to Ajzen (1991, p. 188), the ''attitude toward the behavior … refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question.'' Bailey (2006, pp. 804–805) adds that the ''attitude'' toward the behavior is determined by a person's beliefs that the behavior leads to certain outcomes and the person's evaluation of those outcomes as favorable or unfavorable.

Fishbein and Ajzen (1975, p. 302) define the subjective norm as ''the person's perception that most people who are important to him think he should or should not perform the behavior in question.'' Ajzen and Fishbein (1974, p. 2) refer to the ''perception of the expectations of relevant other people.'' Ajzen and Driver (1992, p. 304) who study the willingness to pay a user fee define the subjective norms as the ''perceived influence of significant others.'' Beck and Ajzen (1991, p. 286) define this concept as the ''perceived social pressure to perform or not to perform the behavior.''[10] Ajzen and Driver (1992, p. 304) measure the subjective norms by the following question: ''Most people who are important to me approve/disapprove of my engaging in this activity.'' They also ask: ''Most people who are important in my life think I should engage on this activity.'' In a research based on the prediction of dishonest actions, Beck and Ajzen (1991, pp. 292–293) ask the following questions: ''If I cheated on a test or exam, most of the people who are important to me would *not care-disapprove*.'' (2) ''No one who is important to me think it is OK to cheat on a test or exam. *agree-disagree*.'' (3) ''Most people who are important to me will look down on me if I cheat on a test or exam. *likely-unlikely*.'' In a study on the choice-of-travel mode, Bamberg et al. (2003, p. 178) ask the same type of questions. Finally, in an experiment on game playing, Doll and Ajzen (1992, p. 758) refer to the perceived expectations of the experimenter, because this seemed to be the most relevant referent in the experimental situation.

It appears from these definitions and questions that the subjective norms are unrelated to any form of economic incentive or even a ''social incentive,'' but refer to the participant's perceptions of the opinion of a few persons who are important to him. In short, they are related to the participant's own attitudes and rationalizations, derived from his understanding of others' opinions.

Finally, Ajzen (1988, p. 132) defines perceived behavioral control as ''the perceived ease or difficulty of performing the behavior and it is assumed to reflect past experience as well as anticipated impediments and obstacles'' (see also Ajzen, 1991; Beck and Ajzen, 1991, p. 286). Ajzen and Driver (1992, p. 304) define the same concept as the ''perceived facilitation or constraints with respect to performance of the behavior.'' To measure the perceived behavioral control, the authors ask the following questions: ''For me to engage in this activity is difficult/easy'' and ''I believe I have the resources required to perform this activity.'' Working on the prediction of dishonest actions, Beck and Ajzen (1991, p. 293) ask the following questions: ''For me to cheat on a test or exam is *easy-difficult*,'' ''If I want to, I can cheat on a test or exam. *true-false*,'' ''I can imagine times when I might cheat on a test or exam even if I hadn't planned to. *likely-unlikely*'' and ''Even if I had a good reason, I could not bring myself to cheat on a test or exam. *likely-unlikely*.'' In other words, perceived behavioral control represents the person's perceived ability to perform the behavior, based on their past experience, competence and any expected obstacles they may face (Hess, 2007, p. 1785). Perceived behavioral control represents ''self-efficacy beliefs'' (Ajzen, 1991, p. 184).

The TPB is an extension of the ''Theory of Reasoned Action'' (TRA hereafter) (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975) which only included the first two components of the model (attitude and subjective norms). As noted by Hess (2007, p. 1784), the TPB is a ''parsimonious model but has significant power in explaining variations in intentions. The simplicity of the model also makes it useful for understanding and explaining the various studies that have been conducted on ethical behavior in organizations.''

The TPB and the TRA have already been used to explain the intentions underlying fraudulent financial reporting. Beck and Ajzen (1991) apply the TPB to prediction of dishonest actions,[11] adding a fourth concept: personal feelings of moral obligation, i.e., the responsibility to perform or refuse to perform a certain behavior. ''Moral norms'' (or ''moral obli-

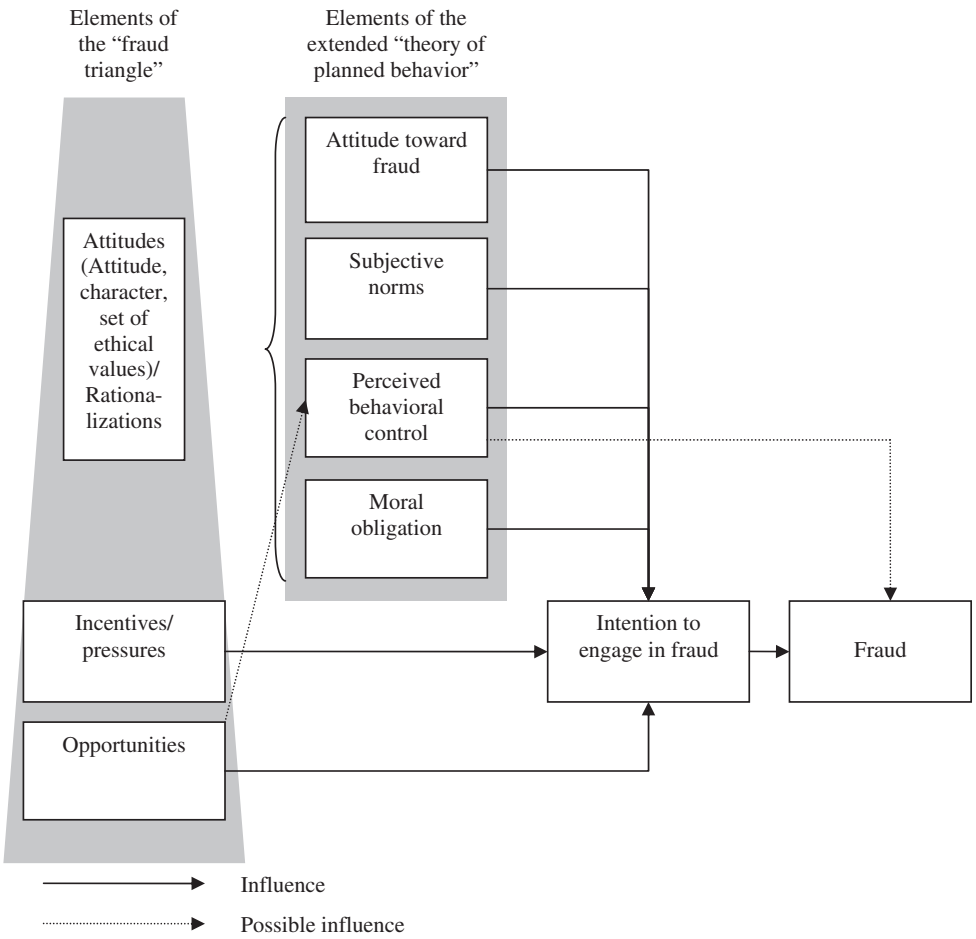

Figure 1. A combination of fraud triangle (FT) and theory of planned behavior (TPB). Adapted from Ajzen (1991) and Beck and Ajzen (1991).

gation'') can be considered as an additional determinant of intentions in situations where ethical behavior is involved (Ajzen, 1991, p. 199; Hess, 2007, pp. 1785–1786). In addition to the individual's own moral belief system, these moral obligations can be derived from laws, professional codes of ethics, and other similar sources.

Gillett and Uddin (2005) test a structural model based on TRA, including attitude, company size, and compensation structure. Based on responses from 139 CFOs they find that the model globally explains the intentions of fraudulent reporting and that attitude and size are the main drivers of fraud. Further, Carpenter and Reimers (2005) find, with a survey analysis and an experiment, that the TPB can help explain unethical and fraudulent financial reporting.

Combining the fraud triangle and the theory of planned behavior (TPB)

The two theoretical frameworks (fraud triangle and the TPB) have already been used by researchers to analyze fraud and unethical behavior, but until now in a separate way. Before analyzing the fraud cases we identified, we combine the fraud triangle and the TPB to explain fraud behavior. Figure 1 details the combined theories. These two theories do not share the same concept of ''attitude.'' The attitude concept, in the fraud triangle, is a broad concept that encompasses the three traditional dimensions of the TPB: attitude, subjective norms and perceived behavioral control. It can also include the fourth dimension mentioned above: moral obligation because ''it seems likely that moral issues are salient

in the case of … dishonest behaviors'' (Beck and Ajzen, 1991, p. 289). We then use the concept of ''extended TPB'' in Figure 1, because of the inclusion of the fourth component.

The second and third components of the fraud triangle, the ''incentives/pressures'' and ''opportunities'' are not covered by the TPB because they represent external stimuli for the fraud behavior. For instance, opportunities could be considered as an actual behavioral control, while perceived behavioral control, as indicated by its name, reflects the person's perception of how easy or difficult it is to engage in the particular behavior (Bailey, 2006, pp. 804–805). However, the concept of opportunities is familiar to Beck and Ajzen (1991, pp. 286–287) who explain that ''the degree of success will depend not only on one's desire or intention, but also on such partly non-motivational factors as availability of requisite opportunities and resources (e.g., time, money, skills, cooperation of others, etc.)'' (see also Ajzen, 1991, p. 182). This statement is important as it suggests that perceived behavioral control is related to intentions and is not assimilated within ''opportunities'' and ''resources'' which are considered ''non-motivational'' factors. These authors add that the TPB ''deals with perceived, rather than actual, behavior[al] control'' (Beck and Ajzen, 1991, p. 287). However, Bamberg et al. (2003, p. 176) write that ''to the extent that people are realistic in their judgments of a behavior's difficulty, a measure of perceived behavioral control can serve as a proxy for actual control and can contribute to the prediction of the behavior in question.'' Consequently, our framework includes an arrow representing a ''possible influence'' between opportunities and perceived behavioral control.

In summary, the TPB allows detailing the broad and undefined concept of attitudes in the fraud triangle that influences managers to commit unethical actions. The intention to engage in fraud is then the aggregation of the extended TPB (attitude, subjective norms, perceived behavioral control and moral obligation) as well as incentives/pressures and opportunities.

Given that the fraud triangle and the TPB, as shown in Figure 1, are complementary theories, we combine them for use in the rest of this article. We label this association ''FT/TPB'' (for ''fraud triangle/theory of planned behavior applied to fraud''). Our focus is on behavior (including personality traits and ethics), mainly at the individual level. The individual's role is relevant because as noted by Sauer (2002, p. 956) a company engages in financial fraud only if its reasons for doing so are consistent with the specific motivations of the individuals who control its reporting process. Further, Hess (2007, p. 1787) argues that the studies which have used the TPB to explain unethical behavior have found that the determinant that has the greatest impact on individual intentions is attitude (see, e.g., Carpenter and Reimers, 2005). Previous studies also demonstrate that auditors generally perceive ''attitude'' factors to be more important warning signs of fraud than ''situational'' factors (Heiman-Hoffman et al., 1996).

Research methodology

Research question

Based on the above literature review and the potential of incorporating behavioral factors more strongly into the corporate fraud detection auditing guidelines, we will examine the following research question (RQ):

RQ: Do managers' personality traits explain ex-post alleged or acknowledged fraud cases? In other words, are the actual reasons behind fraud, as presented in the press articles, in line with the categories of the FT/TPB? The research findings to the RQ will be used to make recommendations to policy makers and standard setters on how standards might be enhanced in the future.

Sampling

To complement prior literature (Carpenter and Reimers, 2005; Gillett and Uddin, 2005), we examine documented behaviors in 39 cases of corporate scandals, using evidence taken from press articles such as managers' quotes and journalists' analyses. Johnson et al. (2005) state that the academic community has proposed a variety of roles for the financial press, which they classify into two general, not necessarily incompatible, categories. The first category contains those perspectives that treat the

press primarily as an information broker, recording and disseminating information about business activities. The second category regards the press as an active participant in the development of society's awareness, understanding, and evaluation of businesses and business practices. Johnson et al. (2005) have used newspapers as a data source and fall into this second category by studying the influence of the financial press on stockholder wealth.

Media's role as a monitor for accounting fraud has been recently studied (Dyck et al., 2010; Miller, 2006) and has been shown to be important due to the pressure it places on management (Dyck et al., 2008). While we recognize that the media may have incentives to highlight fraudulent behavior to increase circulation, the press still fulfills two key roles. First, in relaying information from other intermediaries (auditors, analysts, lawsuits), the press attracts the attention of institutions that may take action (e.g., regulatory bodies, consumer groups, investment funds) (Dyck et al., 2008). Second, the press can produce new information through its own investigations and analysis. Miller (2006) has documented a negative market reaction after an investigative report is published, which suggests that the press plays an important role as a monitor or information intermediary in financial markets.[12]

To design our sample, we started from the Corporate Scandal Fact Sheet,[13] which includes a list of 61 short vignettes on companies. Compared to a similar list maintained by Forbes,[14] this list's main advantage is that it includes the names of the main characters involved in the scandals. We deleted from this list several companies that are linked to other companies involved in different scandals: accounting firms (e.g., Andersen, KPMG) and banks (e.g., Citigroup, Morgan Stanley). We also deleted companies that had no data available on the personality of the managers (e.g., Cornell). Finally, we added three companies that do not appear in the Corporate Scandal Fact Sheet but which had received a lot of adverse publicity and for which press articles were available (AIG, Delphi and Freddie Mac).[15] The resulting sample includes 39 fraud companies for the period 1992–2005. For the sake of comparability and consistency in interpretation, we only used U.S. cases. Because the corporate scandal was mainly based in its U.S. subsidiary – U.S. Food Service, Royal Ahold is also included, although it is a Dutch group.

Content analysis

To evaluate the research question, we applied a content analysis to our press articles. Content analysis is a "research method which draws inferences from data by systematically identifying characteristics within the data" (Jones and Shoemaker, 1994). It presents the following advantages (Kabanoff et al., 1995): (1) non obtrusive characteristic (documents can be evaluated without the knowledge of the communicator), (2) use of a natural verbal expression as data base, (3) adaptability in longitudinal studies if texts are presented over long periods, (4) systematic and quantitative approach applied to qualitative data. A thematic analysis (the approach applied here) enables the researchers to identify content categories and trends from the text, and then draw inferences from them (Jones and Shoemaker, 1994).

In terms of data analyzed, we searched for evidence from the U.S. press coverage contained in the Factiva database. Factiva (also called Dow Jones Factiva) is a non-academic database of international news containing 20,000 worldwide full-text publications including *The Financial Times*, *The Wall Street Journal*, as well as the continuous information from Reuters, Dow Jones, and the Associated Press (see http://factiva.com/index_i7_w.asp). We also used SEC documents, to understand the technical and accounting aspects of the corporate fraud. For some companies (Adelphia Communications, Enron, MicroStrategy, Rite Aid, Sunbeam, Waste Management, and Xerox), we also used the GAO report (United States General Accounting Office, 2002) on restatements.

In order to identify the relevant press articles, we applied the following methodology. For each case study, we first found the name of the managers involved in the fraud with the help of the Corporate Scandal Fact Sheet or a search in Factiva on the company itself. The following step was a search in Factiva with the name of the company and the company's managers as keywords. Keeping in mind that our objective was to examine managers' personality traits and motivations, we selected articles that included details about the personality of the managers.

The next step concerned identification in each article of the paragraphs dealing with the topics of interest for us. Once these sections were identified, a

coding sheet was applied to the content analyzed. This sheet has the same format as Table I and Appendix B, which isolate the three main influences known to be indicators of corporate fraud according to the fraud triangle and the TPB:

- Incentives
- Opportunities
- Attitudes/rationalizations (split into four sub-columns: attitude, subjective norms, perceived behavioral control and moral obligation).

To enhance inter-coder reliability, two different researchers analyzed the same press articles separately on a sample of 10 cases. The major issue was the extraction of the relevant pieces of information from the articles and the allocation of these pieces of information to the columns of Table I and Appendix B. The result was a 95% rate of convergence, which indicates that the coding showed strong signs of reliability. The only source of divergence arose because the pressure from analysts is mentioned in two different examples of the appendices of SAS 99: in the incentives/pressures section, SAS 99 mentions the "Excessive pressure … to meet the requirements or expectations of third parties due to … trend level expectations of … analysts" while in the "attitudes/rationalizations" section, SAS 99 refers to "a practice by management of committing to analysts … to achieve aggressive or unrealistic forecasts." An examination of the two paragraphs suggests that the first one refers to the pressure exerted by analysts, while the second one deals with the attitude of the managers to commit to or to accept this pressure. In other words, an "external incentive" becomes an "internal incentive" only when internalized by the individual. Internalization is based on attitudes, values and beliefs. This discussion illustrates the difficulty to classify some elements of the fraud cases between "incentives" and "attitudes/rationalizations." For example, the "reputation at stake" may both refer to external pressures (social expectations) and to internal commitment to these pressures (fear of loss of reputation). In this case, we have decided to allocate the element to the "attitudes" column (sub-column "attitude toward the fraud") because we concluded that the internalization of this pressure is the cause of the fraudulent behavior. The same difficulty applied to the maintenance of a high living standard which could be considered as an incentive or an attitude toward the fraud. We favored the second interpretation because the search for a high living standard is, in part, the consequence of an individual decision. We also recorded the meeting of analysts' expectations in both columns "incentives" and "attitude (toward the fraud)." After resolving this issue, all the other cases were coded by two researchers, with no significant disagreements.

Managers' behavior in cases of corporate scandals: analysis of the results

Appendix A.1 presents a table disclosing years when the scandal went public and the number of articles used in each case study. Appendix A.2 lists all the references used. Appendix A.1 shows that there is no apparent discrepancy between the cases in terms of number of articles used (average 3.7 articles, minimum = 2, maximum = 6). Appendix B presents a detailed analysis of the underlying behavioral motivation in the 39 corporate scandals examined. The components are classified according to the combined theory (FT/TPB): Incentives-pressures (col. 1), opportunities (col. 2), attitudes/rationalizations (subdivided into four separate components taken from the TPB: attitude (col. 3), subjective norms (col. 4), perceived behavioral control (col. 5) and moral obligation (col. 6). A numbering system is used after each component to refer to the "examples of risk factors" of SAS 99 and ISA 240: 1 = covered by both SAS 99 and ISA 240; 2 = covered by SAS 99 but not ISA 240; 3 = covered by ISA 240 but not SAS 99; and 4 = covered by neither SAS 99 and ISA 240. We summarize these results by displaying frequencies in Table I.[16]

As shown in Table I, the first two "traditional" components of the fraud triangle (incentives/pressures and opportunities) are present in all cases with, respectively, a total of 106 and 49 occurrences. The last four components (which correspond to the third part of the fraud triangle and the four elements of the extended TPB), that are heavily related to managers' personality traits and ethics, are present in some cases but the number of occurrences varies greatly: 62 for

TABLE I

Frequencies of FT/TPB elements

No.	Companies	Incentives/ pressures (col. 1)			Opportunities (col. 2)			Attitudes/rationalizations											Total by company
								Attitude (toward the fraud) (col. 3)			Subjective norms (col. 4)			Perceived behavioral control (col. 5)			Moral obligation (col. 6)			
		P	NP	T	P	NP	T	P	NP	T	P	NP	T	P	NP	T	P	NP	T	
1	Adelphia Communications	1		1	1		1	2	1	3			0			0		1	1	6
2	Ahold	5		5	1		1	1	2	3			0		1	1		1	1	11
3	AIG	3		3	1		1	2	1	3			0		1	1			0	8
4	AOL	4		4	1		1	1		1			0		1	1			0	7
5	Bristol-Myers Squibb	4		4	1		1	1		1		1	1		3	3			0	10
6	Cendant	2		2	2		2	1		1			0			0			0	5
7	Computer associates	2		2	1		1	1	1	2			0		2	2		1	1	8
8	CMS Energy	1	2	3	1		1		1	1			0			0			0	5
9	Datek Online	1		1	1		1		1	1			0		2	2			0	5
10	Delphi	6		6	2		2		1	1			0			0			0	9
11	Dollar General	2		2	1		1			0			0		1	1		1	1	5
12	Duke Energy	1		1	1		1		1	1			0			0			0	3
13	Dynegy	1		1	2		2		1	1			0			0			0	4
14	El Paso Corporation	2	3	5	1		1	1		1			0			0			0	7
15	Enron	1	1	2	2		2	1		1		1	1		2	2		2	2	10
16	Freddie Mac	2		2		2	2	1	1	2			0			0		1	1	7
17	Global crossing	3		3	1		1	1	2	3			0		1	1			0	8
18	Halliburton	2		2	1	1	2	1	1	2			0			0			0	6
19	Harken Energy	1		1		1	1	1	1	2			0			0			0	4
20	HealthSouth	3		3		1	1		2	2			0		2	2		2	2	10
21	Homestore.com	2	1	3	1	1	2		2	2			0			0			0	7
22	HPL Technologies	3		3	1		1			0			0		1	1		1	1	6
23	Im Clone Systems	1		1	1		1		4	4			0			0			0	6
24	K-Mart	4		4	1		1	1		1			0			0			0	6
25	Lucent	3		3	1		1		2	2			0			0			0	6
26	Merck	3		3	1		1			0			0			0			0	4
27	MicroStrategy	1		1	1		1		1	1			0		2	2			0	5

TABLE I
continued

No.	Companies	Incentives/ pressures (col. 1)			Opportunities (col. 2)			Attitudes/rationalizations												Total by company
								Attitude (toward the fraud) (col. 3)			Subjective norms (col. 4)			Perceived behavioral control (col. 5)			Moral obligation (col. 6)			
		P	NP	T	P	NP	T	P	NP	T	P	NP	T	P	NP	T	P	NP	T	
28	Network Associates	4		4	1		1	1	1	2			0		1	1			0	8
29	Peregrine Systems	3		3	2		2	2		2			0			0		1	1	8
30	Phar-Mor	1		1	1		1	1	1	2		1	1		1	1			0	6
31	Qwest	5		5	1		1		3	3			0			0			0	9
32	Reliant Energy	2		2	1	1	2		1	1			0			0			0	5
33	Rite Aid Corporation	4		4	1		1		3	3			0		1	1			0	9
34	Sunbeam	2		2	1		1		1	1			0		2	2			0	6
35	Tyco	3		3	1		1	1	1	2			0			0			0	6
36	Ullico	1		1	1		1		1	1			0			0			0	3
37	Waste Management	3		3	1		1		1	1			0			0			0	5
38	WorldCom	4		4	1		1	1		1		1	1		1	1		3	3	11
39	Xerox	3		3	2		2	1		1			0			0			0	6
	Total by component	99	7	106	42	7	49	23	39	62	0	4	4	0	25	25	0	14	14	260

P present in auditing standards, *NP* not present in auditing standards, *T* total.
Table discloses frequencies based on Appendix B.

attitude toward the fraud, 4 for subjective norms, 25 for perceived behavioral control and 14 for moral obligation. Thus, all the components of the FT/TPB are present in the press articles and therefore subject to analysis.

In Table I, we split each dimension of FT/TPB into two columns to highlight the presence of each component identified in the auditing standards. The column P represents the components present in the "examples of risk factors" of SAS 99 and ISA 240, the column NP represents the components not present in auditing standards and the column T is the total of the two preceding columns. The bottom line of Table I (total by component) documents that the split between Present/Not present items varies across the components of the FT/TPB. In the following discussion, we focus on each dimension and its presence in or absence from the auditing standards.

Incentives/pressures

Table II summarizes the content of columns 1 (incentives/pressures) and 2 (opportunities) from Appendix B. The statistics provided by Table I show that almost all items identified from the press are present in auditing standards. From Table II, we can conclude that the most frequent risk factors are: (1) the profitability or trend level expectations of investment analysts, institutional investors, significant creditors or other external parties; (2) the existence of significant financial interests in the entity; (3) a significant portion of the compensation being contingent upon achieving aggressive targets for stock price operating results, financial position or cash flow; (4) a high degree of competition or market saturation and (5) the need to obtain debt or equity financing to stay competitive.

Opportunities

In the same Table I, the column "opportunities," which corresponds to a form of "actual behavioral control" (see above), is almost completely filled with components found in promulgated auditing standards (42 items over 49). Table II provides the list of risk factors mentioned in the auditing standards. In several instances, the managers benefited from the existence of complex transactions (e.g., AIG, Datek Online) and the possibility of "round-trip trades" (e.g., CMS Energy, Duke Energy, Dynegy, Enron, Homestore.com, Network Associates, reliant Energy). In other instances, the auditor's alleged failure perhaps made the fraud easier to perpetuate (e.g., Cendant, Delphi, Halliburton, HPL Technologies, Merck, Sunbeam, Tyco, Waste Management, Xerox).

Attitudes/rationalizations

The "attitudes/rationalizations" component is split into four columns, following the extended TPB: "attitude toward the fraud," "subjective norms," "perceived behavioral control" and "moral obligation." We explain below how each column is defined. Since the columns of Table I are generally filled, the actual reasons behind fraud, as mentioned in the press articles, appear to be in accordance with the categories of the FT/TPB. However, it appears clearly from the frequencies displayed in Table I that for the four components of the extended TPB, the items not present in the auditing standards are more numerous than those present.

Interestingly, as shown in the last part of Table II, our sample cases contain several examples noted in the auditing standards and corresponding to the "attitude toward the fraud" component of the TPB (column 3 of Table I):

- "Excessive interest by management in maintaining or increasing the entity's stock price or earnings trend": represented by stock options (Ahold, AIG, AOL, Bristol-Myers Squibb, Computer Associates, Freddie Mac, Halliburton, Peregrine Systems, WorldCom and Xerox), and the fluctuations in the company's stock price (AIG). This evidence is in line with Coffee (2005) who states that "when one pays the CEO with stock options, one creates incentives for short-term financial manipulation and accounting gamesmanship" (p. 202). Several empirical studies have confirmed the role of stock options as incentives in cases of restatements (Efendi et al., 2007) or securities fraud allegations (Denis et al., 2006). In the same vein, Cheng and Warfield (2005) found

TABLE II

Explanation of fraud behaviors present in the auditing standards

Elements of the fraud triangle	Items	Companies involved (anecdotal evidence)
Incentives/pressures	High degree of competition or market saturation	Ahold, AOL, Bristol-Myers Squibb, Cendant, HPL Technologies, K-Mart, Reliant Energy
	Profitability or trend level expectations of investment analysts, institutional investors, significant creditors or other external parties	Adelphia Communications, AIG, AOL, Bristol-Myers Squibb, Computer Associates, Delphi, Dollar General, Freddie Mac, Global Crossing, HealthSouth, Homestore.com, Lucent, Merck, MicroStrategy, Network Associates, Phar-Mor, Qwest, Sunbeam, Waste Management, WorldCom, Xerox
	Need to obtain debt or equity financing to stay competitive	Ahold, Datek Online, Enron, HPL Technologies, K-Mart, Merck, Rite Aid Corporation, Tyco
	Significant financial interests in the entity	AIG, AOL, Bristol-Myers Squibb, Delphi, El Paso Corporation, Global Crossing, Halliburton, Harken Energy, HealthSouth, Homestore.com, Im Clone Systems, Peregrine Systems, Qwest, Rite Aid Corporation, Sunbeam, Ullico, Waste Management, Xerox
	Significant portion of the compensation being contingent upon achieving aggressive targets for stock price operating results, financial position or cash flow	Ahold, AIG, AOL, Bristol-Myers Squibb, Cendant, Computer Associates, CMS Energy, Delphi, Dollar General, Duke Energy, Dynegy, El Paso Corporation, Freddie Mac, HealthSouth, K-Mart, Lucent, Network Associates, Peregrine Systems, Qwest, Rite Aid Corporation, Waste Management, Xerox
Opportunities	Significant related-party transactions not in the ordinary course of business	CMS Energy, Duke Energy, Dynegy, El Paso Corporation, Global Crossing, Homestore.com, Network Associates, Reliant Energy
	Strong financial presence or ability to dominate an industry	Ahold, Bristol-Myers Squibb, Global Crossing
	Accounting figures based on significant estimates	AOL, Datek Online
	Significant, unusual, or highly complex transactions	AIG, Datek Online
	Domination of management by a single person or small group	Adelphia Communications, Computer Associates, Delphi, Dollar General, Enron, HealthSouth, Im Clone Systems, K-Mart, MicroStrategy, Peregrine Systems, Qwest, Rite Aid Corporation, Ullico
	Ineffective board of directors or audit committee oversight over the financial reporting process and internal control	Cendant, Delphi, Enron, Halliburton, HPL Technologies, Merck, Peregrine Systems, Phar-Mor, Sunbeam, Tyco, Waste Management, WorldCom, Xerox

TABLE II

continued

Elements of the fraud triangle	Items	Companies involved (anecdotal evidence)
	Ineffective accounting and information systems	Cendant, Lucent
Attitudes/rationalizations	Excessive interest by management in maintaining or increasing the entity's stock price or earnings trend	Ahold, AIG, AOL, Bristol-Myers Squibb, Computer Associates, El Paso Corporation, Freddie Mac, Halliburton, Peregrine Systems, WorldCom
	A practice by management of committing to analysts, creditors, and other third parties to achieve aggressive or unrealistic forecasts	Adelphia Communications, Network Associates
	The owner-manager makes no distinction between personal and business transactions	Adelphia Communications, Cendant, Enron, Global Crossing, K-Mart, Peregrine Systems, Phar-Mor, Tyco

that corporate managers with equity incentives engage more frequently in earnings management and Bergstresser and Philippon (2006) document that earnings management is more pronounced at firms where the CEO's potential total compensation is more closely tied to the value of stock and option holdings. Our finding is not surprising, given that the sample firms are from the U.S. (with one exception; see sample description above) and given Coffee's (2005) explanation of the importance of stock options in compensation packages in the United States.

- "A practice by management of committing to analysts, creditors, and other third parties to achieve aggressive or unrealistic forecasts," was found in both Adelphia Communications and Network Associates.
- "The owner-manager makes no distinction between personal and business transactions." It should be noted that this example taken from ISA 240 could also be considered as a case of misappropriation of assets. Interestingly, we found several instances of personal expenses paid for by the company's resources (Cendant, Enron, Global Crossing, HealthSouth, K-Mart, Peregrine Systems, Phar-Mor, and Tyco). In Adelphia Communications, the fraud consisted of improper use of the company's funds for self-dealing by the Rigas family. The money was used to buy stock and luxury condominiums in Mexico, Colorado and New York City, to construct a golf course, purchase timber rights to land in Pennsylvania and pay off margin loans (Anonymous, 2002; Caruso, 2002).

The examples provided in the auditing standards in relation to misappropriation of assets are difficult to find in press articles. For example, we were able to identify only one case of "changes in behavior or lifestyle that may indicate assets have been misappropriated": Charles Wang, CEO of Computer Associates, and Sanjay Kumar, COO, pocketed the money resulting from the increase in their stock options to buy expensive cars (Ferrari Maranello, Land Rover) and holiday homes (Anonymous, 2000). However, the press mentions several cases of extremely high living standards, but not necessarily *changes* in lifestyles (see below).

Items not present in the auditing standards

We found that several elements explain the fraud-related behaviors and are related to "attitude toward the fraud" and the three other components of the TPB, but they are not present in the auditing standards. All of these elements are identified with the number 4 in Appendix B and are found in the

TABLE III

Explanation of fraud behaviors not present in the auditing standards

Elements of the TPB	Items	Companies involved (anecdotal evidence)
Attitude toward the fraud	To maintain a high living standard	Adelphia Communications, Cendant, Computer Associates, Datek Online, HealthSouth, Im Clone Systems, Phar-Mor, Rite Aid Corporation, Tyco
	sometimes linked to a passion for sports	Harken Energy, Qwest
	Reputation at stake (company's success = personal success)	Ahold, AIG, Network Associates, Qwest
Subjective norms	Influence of the managers	Bristol-Myers Squibb
	Influence of the CEO	Enron, Phar-Mor
	Complicity between the CEO and the CFO	WorldCom
Perceived behavioral control	Prize received or superlative:	Ahold, Computer Associates
		Youngest chief executive (Bristol-Myers Squibb)
		Marketing genius (Dollar General)
		Admired head of a fast-growing company, very rich and very young manager (Datek Online)
		Highest-paid CEO (HealthSouth)
		Worldwide recognition (Sunbeam)
		Financial wizard (CFO of WorldCom)
	Personality	Tyrannical/autocratic (AIG, Enron, HealthSouth, Network Associates, Rite Aid Corporation, Sunbeam, WorldCom)
		Narcissistic (AOL)
		Encourages hero worship of executives (Phar-Mor)
		Personal ambition – career (Freddie Mac, Homestore.com, Reliant Energy, Waste Management) or for the firm (Global Crossing, Qwest)
		Alcoholic (MicroStrategy)
Moral obligation	Charitable causes	Adelphia Communications, Computer Associates, Enron, Freddie Mac, HealthSouth, WorldCom
	Action for the good of the company	Ahold

column NP of Table I. Table III summarizes these elements of fraud behavior not present in auditing standards.

Starting with the "attitude toward the fraud" component of the TPB (column 3 of Appendix B; Table I), we found two categories of explanations not present in auditing standards: (1) To maintain a high living standard, sometimes linked to a passion for sports and (2) Reputation at stake. Using Ajzen's (1991) definition of "attitude toward the behavior," these elements can help explain why a person has a favorable attitude toward the consequences of the actions that lead to fraud.

Anecdotal evidence in the press highlights these two elements. For example, former Tyco CEO Dennis Kozlowski acquired a "$6,000 shower curtain for his highfalutin apartment" (Jennings, 2006b, pp. 2–3). Martin Grass, CEO of Rite Aid Corporation, and Jeffrey Citron, CEO of Datek Online, both commuted to work by personal helicopter (Ahrens, 2002).

Several CEOs had a real passion for sports that perhaps influenced them to commit fraud. Mickey Monus "borrowed" about ten million dollars of Phar-Mor's funds to cover the debts of the World Basketball League. As he controlled more than 60%

of the teams, he was responsible for the WBL's expenses and losses – and whenever the league needed cash, he drew money from the company (McCarty and Schneider, 1992). Philip Anschutz, Qwest's Chairman, wanted to finance his burgeoning sports and entertainment empire. He liked to be seen as a "sports and entertainment mogul" (Smith, 2002) The need to prove themselves as "players" in the field of sports seems to have made at least some executives susceptible to lapses in moral judgment and behavior.

The "subjective norms" component of the TPB (column 4 of Table I), which represents the opinion of "significant others," is less prevalent in the press, probably because it is more difficult to identify, even with the hindsight perspective of journalists. We found a few cases (only 4) where the managers were heavily influenced by other individuals in the firm to commit fraud (e.g., Phar-Mor and the importance of the CEO). In the WorldCom case, the personality of the CEO had an impact on the behavior of the CFO.

The "perceived behavioral control" (column 5 of Table I), as explained earlier, represents the perceived ease or difficulty of performing the fraud. It can also be referred to as the "self-efficacy beliefs" of the fraud perpetrator. As we posit that praise/admiration from the press and certain personality traits contribute to these self-efficacy beliefs, we include in this column all factors reported in the press pertaining to these two explanations.

Several managers of the studied firms received glowing praise and admiration from the press. Prior to the scandals, Cal Turner, Dollar General's CEO, was considered a "marketing genius," (Chad Terhune and Lublin, 2002) while Jeffrey Citron (Datek Online) had been heralded as a "technology wizard" by Forbes magazine and "one of the 20 most important players on the financial Web" by Institutional Investor (Ahrens, 2002; Barboza, 1998). Corporate America treated Al Dunlap [Sunbeam's CEO, known as "Chainsaw Al"] as "a miracle worker" and he did everything possible to promote this image (Stewart, 1998). It appears that these managers believed in their own press and were willing to do almost anything to keep up the favorable image.

Several egregious personality traits are also found in the CEOs involved in the cases studied. Network Associates' CEO, Bill Larson, is a good example of tyrannical behavior. He was prone to bullying his employees, giving them unreachable targets to meet then berating them if they failed. He liked to remind managers that "suicide was sometimes an appropriate response to failure" (Ackerman and Kang, 2001). In the grand jury indictment, Martin Grass (Rite Aid Corporation) "emerged as an arrogant bully, pressuring underlings to endorse phony documents and bragging that cover-ups would never be discovered." Grass even threatened Rite Aid's accounting firm, KPMG, with retaliation if the Company suffered as a result of the audit (Ahrens, 2002) In a different style, Michael Monus (Phar-Mor) fascinated his co-executives. He was the mastermind behind the fraudulent scheme and encouraged a form of hero worship. Patrick B. Finn, for example, the CFO and Senior VP who orchestrated the fraud with Monus, called Monus "his god." This resulted in a blind loyalty to Monus, whose orders were followed without any substantive checks or balances (Wood, 1993).

Finally, we identified the "moral obligation" component of the TPB (column 6 of Table I) on the basis of Beck and Ajzen (1991, p. 293) who refer to feelings of guilt in one of the questions they used to evaluate this component of the behavior.[17] We identified one major argument put forward by managers to lessen their guilt: the fact that their actions helped other people or organizations via their work with charitable causes (Adelphia Communications, Computer Associates, Enron, Freddie Mac, HealthSouth, and WorldCom) or the fact that the managers felt that they were acting for the good of the company (Ahold). For example, at Computer Associates, Charles Wang was a "caring executive who reportedly ends every meeting by talking about the charities he's working on" (Alphonso, 2000). Richard Scrushy (HealthSouth) also used his money for seemingly good purposes: he donated to charities and gave money for a new church (Schneider, 2003; Tomberlin, 2003).

Robustness analysis

In order to test whether the factors highlighted in the previous section truly capture a lot of what is going in fraudulent companies, we ran a

quantitative analysis based on the "Bag-of-words" approach (Tetlock, 2007, Tetlock et al., 2008.)[18] This quantification is done through the development of an index capturing the occurrence of keywords associated with the four dimensions of the "Attitudes/Rationalizations" component of the FT/TPB framework. We use it to back-test our approach. Hence our expectation is that the Attitudes/Rationalizations index is higher in firms becoming fraudulent than in non-fraudulent firms.

To implement this robustness analysis, we adopted the following procedure. First, on the basis of the detailed table of Appendix B, we created a "dictionary." We identified all meaningful words for each of the six columns of the table. Then, we listed the different possible endings (singular, plural, feminine, masculine, etc.). For example, for the column (3) "Attitude toward the fraud," we used the words "ambition" (with added endings: "ambitions," ambitious"), "attitude" (and "attitudes"), "enrichment," "greed" (and "greedy"), etc. For the column (5) "Perceived behavioral control, we used the terms (and their respective endings) "award," "wizard," "arrogant," etc.[19] Then, for each column, we computed an index equal to the number of occurrences of these words, scaled by the total number of words in the selected relevant paragraphs. As we specifically focus on the input of the TPB, we computed the sum of the indices corresponding to the four columns of the TPB (columns 3–6). We call this sum $\text{Index}_{\text{Att/Rat}}$ as it refers to the Attitudes/Rationalisations component of the fraud triangle.

Then we created our treatment and control samples. The treatment sample is composed of each of the 39 studied companies. First, for each of them we identified a peer ("control") company on the basis of the Infinancials database.[20] This database provides three categories of peers, on the basis of the sector classification and size: "international," "regional" and "domestic." Given the U.S. nature of our sample, we chose the closest domestic peer company.[21] For example, Adelphia Communications is matched with Comcast and AIG is paired with Harford Financial, etc.[22] When a peer company was itself a treatment (i.e., fraudulent) company, we chose the second closest peer. When the same peer was supposed to be matched to two different treatment firms, we also kept the second closest peer for one of the treatment firms. In a second step, we checked in the Edgar database of the SEC (http://www.sec.gov) that the control company had not been subject to an enforcement release from the SEC in any year. In a third step, we searched for the CEO of the control firms. In case of a change of CEO over the period of scrutiny we identified the different CEOs.

When the fraud is discovered, the treatment firms come under greater scrutiny and are probably "over" covered by the press. We therefore adopted a very conservative approach by selecting a larger range for the control firms (Year the scandal became public, i.e., Y0, plus $Y-1$, Y1, Y2 and Y3) than for the treatment firms ($Y-2$ and $Y-1$). In a fourth step, we searched for articles in the Factiva database on the studied period with the name of the company and the name of the CEO (or CEOs in case of a change of CEO over the period of scrutiny for the control firms, and we kept the CEO involved in the fraud for the treatment firms). Given the high number of articles retrieved, including news release concerning many other companies, we excluded the "Dow Jones News Service," the "Mutual Fund Prospectus Express" and all articles with less than 500 words. The number of articles varies between 51 (Zip Realty: Homestore.com peer) and 1500 (AT&T: Global Crossing peer).[23] Lastly, as our index focuses on the CEO's attitude, we extracted from the articles all the paragraphs where the name of the CEO was mentioned. We thus created a word file ("test file") for each sample company (treatment or control). We obtain 72 word files[24] that will be subject to our statistical treatment.

We then computed the occurrences of each term of our dictionary in the word file of relevant paragraphs (the "test file") corresponding to each firm. For each column, we computed the following index: number of occurrences of the key terms of the column divided by the total number of words in the test file of firm. The Attitudes/Rationalizations index ($\text{Index}_{\text{Att/Rat}}$) is then computed as the sum of the four indices related to the Attitudes/Rationalizations components of the FT/TPB framework.

We find the following results:

- Treatment firms: mean ($\text{Index}_{\text{Att/Rat}}$) = 1.16‰; median (1.06‰)

– Control firms: mean ($Index_{Att/Rat}$) = 0.70‰; median (0.58‰).

As the $Index_{Att/Rat}$ does not follow a normal distribution, we tested the difference in medians between the two samples (Nonparametric equality-of-medians test) and also a Wilcoxon rank-sum test. In both cases, the difference is significant at the 0.01 level. In summary, even using a conservative approach (a period of 2 years [Y − 2, Y − 1] preceding the discovery of the fraud for the treatment firms compared to a period of 5 years [Y − 1, Y + 3] for control firms), the articles dealing with the treatment firms use significantly more often the key terms created from our theoretical framework.

Discussion and limitations

Relating back to the research question we posed, this study provides evidence that, in general, the theoretical framework we use (the FT/TPB) is relevant when matched with cases of unethical behavior by managers that are associated with corporate frauds. We must acknowledge that, in line with SAS 99, risk factors reflective of attitudes/rationalizations by board members, management, or employees, that allow them to engage in and/or justify fraudulent financial reporting and misappropriation of assets, may not be susceptible to observation by the auditor. However, we should recall that, as stated by SAS 99 (pp. 47, 50), ''the auditor who becomes aware of the existence of such information should consider it in identifying the risks of material misstatement arising from fraudulent financial reporting [or] misappropriation of assets.''

Our results are consistent with and reinforce this statement from SAS 99: ''Economic motivations (''incentives'') exist in almost all companies.'' However, it is clearly evident that not all managers engage in fraud. The psychological aspects of the individual manager and the existence of opportunities to engage in fraud both play an important role in explaining the fraud. Consequently, the auditing regulation should be extended to better integrate the attitudes/rationalizations component (with the four sub-divisions related to the TPB). SAS 99 could include more examples of ethical behavior and ISA 240 could also be modified because many examples we found are not covered properly by this standard. Moreover, the quasi-absence of the subjective norms, one of the components in the TPB, in our press analysis points to the apparent lack of interest in this concept by the press as well as not being sufficiently covered in the auditing standards. One explanation for this finding is that it may be difficult for the press to accurately ascertain the subjective norms of individuals.

Based on our results, we suggest adding the following (non-comprehensive) list to the fraud-risk factors displayed in the SAS 99 and ISA 240 appendices:

– The manager has a very high living standard that could lead him/her to take unethical/fraudulent decisions.
– The manager has a tyrannical or autocratic-type personality that does not foster a collective, healthy culture in the firm. This personality makes it difficult to promote honest dialog between all levels of the hierarchy.
– The manager has been praised in press articles. While this is not problematic *per se*, it may have given the manager an inflated opinion of himself/herself that may at times lead to self-promotion at any cost. The manager has lost perspective on his/her authority and cannot tolerate his/her judgment being questioned.
– The manager has benefited from a dominant position *vis-à-vis* other employees. This situation is not problematic *per se*, but if employees have such a respect for their manager (or are so impressed) that checks and balances might disappear. The employees cannot critically assess whether what the manager requires of them is unethical or fraudulent.

In summary, the auditors should better integrate the attitudes component when evaluating the potential for unethical behavior associated with fraud, and the press is a potentially useful tool to understand managers' personalities.[25] Thus, our exploration of fraud cases reinforces the conclusion of Martin (2007), who addresses the demand for auditors to assess the integrity and ethical values of clients. This is already part of the control environment audit mandated by the Sarbanes-Oxley Act

(2002) in section 404. The audit requires auditors to evaluate controls via a framework that lists management control philosophy as an important element of the control environment. One implication from the results of our study is that auditors should place a special emphasis on evaluating the ethics of individuals through the assessment of attitude, subjective norms, perceived behavioral control and moral obligation–the components of the TPB (see Figure 1).[26]

The advantage of the TPB is that it allows auditors, researchers and regulators to understand the role that the elements underlying the attitude (in a broad sense) play in perpetuating fraud. For example, using Ajzen (1991) methodology, auditors can look at the perception managers have of the consequences of committing fraud and the perceived likelihood that managers have that these consequences will occur. Further, other elements of the TPB can be examined as well. For example, auditors may look at the role important referents (such as their spouse or colleagues) play on influencing a manager to commit or not commit fraud (importance of subjective norms).

Auditors must also place emphasis on evaluating the organizational culture. As explained by Carpenter and Reimers (2005, p. 118), managers' attitudes can be shaped by the firm's culture and the direction of top executives and the board of directors. The responsibility for ethical behavior rests upon the organization and the organizational values. Thus, a person may be more likely to behave unethically if the perceived consequences will not be punished but rewarded (Carpenter and Reimers, 2005). Further, auditors should evaluate the fairness of the work climate (Cohen et al., 2007). For example, are some employees overworked or ill compensated? If so, this situation could lead to resentment and possible cheating. The presence or absence of an ethics committee on the board should also be highlighted and its role, in case of presence, should be investigated. Conversely, the absence of an ethics committee could be a signal that the board may not be doing enough to monitor the potential for fraud. Alternatively, a governance committee could have a mandate to monitor the ethical climate of the firm with a special emphasis on providing oversight and guidance to management on ethical issues. Further, with the increased attention that boards need to pay attention to enterprise risk management (Cohen et al., 2010) a risk management committee can explicitly consider personality traits when evaluating the risk of management committing fraud. Moreover, section 406 of SOX (U.S. Congress, 2002) requires public companies to either have a code of conduct or needing to explain why the company does not have one. Thus, the appropriate committee of the board (e.g., the ethics committee or the risk management committee), can be more explicit in relying on a strong and substantive code to monitor management for these indicators of fraud that could potentially lead to a violation of the code.

Finally, as in all studies, there are potential limitations that attenuate somewhat the generalizability of the results. First, we do not mean to imply that the red flags identified from the press will always lead to corporate fraud: of course, the vast majority of managers who have a high standard of living and are identified as high-profile leaders will not engage in fraudulent acts. However, we believe that the existence of these red flags is a relevant indicator of potential fraud. Cooper (2008) in the book telling her story as the WorldCom whistleblower, explains that the accountants who were willing to obey the order to record the fraudulent entries rationalize their behavior by reference to the personality of the managers: ''Troy [one of the accountants involved] wonders if maybe he's making too much out of this. After all, Scott [the CFO]'s very smart and highly regarded. He must know what he's doing'' (p. 7). In this example, the fact that the CFO was considered a ''financial wizard,'' while it may not *per se* explain the fraudulent behavior, at a minimum played a major role in the ''rationalization'' phenomenon by the accountants being urged to behave fraudulently.

Second, another limitation is related to the ex-post rationalization phenomenon and to press coverage. Newspapers do shape people's worldviews but news itself is managed, manufactured and selectively produced. We do not underestimate the desire of newspapers to glamorize fraud cases and to establish lively stories that contain colorful motives and are populated with dramatic personalities. However, the press articles are generally based on facts and actual testimonies, which work to reduce the weight of the rationalization. For example, Choo and Tan (2007) also used anecdotal elements in their research mentioned earlier.

Third, if we do not question the construction of official pronouncements, we are aware that, given the politics of rulemaking, standard setters are obliged to accommodate some demands and proceed in an incremental way. In addition, we must acknowledge standard setters realize the inherent difficulty (and sometime impossibility) of assessing the personality and ethics of client personnel. Unless dysfunctional personality and ethics are accompanied by behavior, there is a risk that these traits will go largely un-assessed and un-addressed.

Fourth, it is important to remember that the lists of risk factors presented in auditing standards are not meant to be exhaustive, merely representative of situations and circumstances that have been associated with fraud in the past. The risk factors are illustrative, and are there to stimulate, not limit, thinking about fraud risk, which does not prohibit, in our view, an extension of this list.

Finally, in the case of attributes, there may be a ''fundamental attribution error'' (or ''correspondence bias''). For example, individuals have a tendency to assume that a person's actions depend on what ''kind'' of person that person is rather than on the social and environmental forces influencing the person (Gilbert and Malone, 1995) and the bias is reinforced when explaining someone else's failures.

Future research

In the field of social sciences, evidence is not always easily obtained, or is verifiable especially if we consider the main topic of our study: corporate fraud. However, our analysis is based on quotes from the involved managers, which represent a first level of evidence and, more generally, on press articles which constitute a second level of evidence. We found an extensive number of press articles on the studied cases, and no case of inconsistency among the articles, which is an indication of the reliability of the sources. A future study can explore different qualitative methods to ascertain the reliability and objectivity of these sources.

In our analysis, we assigned an equal weight to the three major components of the combined FT/TPB: incentives, opportunities and attitudes. In actuality, the weights of the three components can vary from situation to situation. When the weight of the economic motivations is too high, the ethical threshold potentially decreases, and vice versa. When there are numerous opportunities, the probability to commit a fraud is high. One area of future research would be to investigate the relative weight of each component for different types of fraud.

For the sake of simplicity and consistency, we focused on U.S. cases of alleged or acknowledged corporate frauds. However, fraud is of course not limited to the U.S. and many countries have faced similar situations. It would be interesting to extend the scope of study to non-U.S. companies (e.g., Parmalat[27] – Italy –, Shell[28] – U.K./Netherlands, Marionnaud[29] – France, etc.) to investigate the robustness of our results in different cultural and institutional contexts.

Another area that could be explored is whether a contingency ethics model can be associated with predicting unethical behavior that could lead to fraud. For example, Cohen and Martinov Bennie (2006) demonstrated how Jones's (1991) contingency model could be applied within an auditing context. A future study could explore if elements of the contingency model that Cohen and Martinov Bennie employ (e.g., magnitude of consequences, social consensus) can be related to elements of the fraud triangle such as incentives/pressures or to the attitude toward consequences component of the TPB. Finally, our results could be useful in two other contexts. First, forensic auditing[30] could benefit from the combined fraud triangle/TPB theories in order to develop new red flags for forensic auditors. Second, the decision taken by auditors to accept new clients or to discontinue the service provided to a current client could also include a risk assessment based on these combined theories.

Notes

[1] For other studies that have looked at fraud or error cases, see Eilifsen and Messier (2000), Caster et al. (2000), Nieschwietz et al. (2000) and Rezaee (2005).

[2] Shafer (2002) examines fraudulent financial reporting within the context of Jones' (1991) ethical decision making model. He finds that quantitative materiality did not influence ethical judgments. Thorne et al. (2003)

study the auditor's moral reasoning, applying the cognitive developmental theory of Kohlberg (1958, 1979) and the measurement tools proposed by Rest (1979). They find that national institutional context is associated with differences in auditors' moral reasoning. Elias (2002) examines the ethics of the earnings management practice. His results indicate a positive relationship between social responsibility, focus on long-term gains, idealism and the ethical perception of earnings management and a negative relationship between focus on short-term gains, relativism and the ethical perception of this practice.

[3] This theory states that "an intense emphasis on monetary success induces corporate executive Fraud," "corporate executives exploit/disregard regulatory controls to commit Fraud," and "a corporate environment that is preoccupied with monetary success provides justification/rationalization for success by deviant means such as Fraud."

[4] For instance, Brennan and McGrath (2007) on the basis of 14 fraud cases, focus on incentives and opportunities.

[5] Uzun et al. (2004) also used cases as identified in the financial press, but with a focus on governance mechanisms.

[6] Loebbecke et al. (1989) use a reasoning equivalent to the "fraud triangle" and call it a "model."

[7] Albrecht et al. (1982, p. 34) and Comer (1977, pp. 10–11) present Cressey's theory.

[8] See Eilifsen and Messier (2006, p. 87), Ramos (2003), and Soltani (2007, pp. 538–542).

[9] The international auditing standard ISA 240 (IFAC (International Federation of Accountants), 2005, 2009), treats ethics in a similar manner as SAS 99. However, the individual "morale" (and not morals) is mentioned. We carried out a line-by-line comparison of SAS 99 and ISA 240 with regard to the "examples of risk factors" provided in the appendix of each standard (available from the authors upon request). Apart from a few wording differences, we noticed that a few items are present in ISA 240 and absent in SAS 99 (see Appendix B).

[10] A good example of subjective norms and "significant others" is provided by Abernethy and Vagnoni (2004, p. 211) who focus on the power of physicians in hospitals, as this group has traditionally been the dominant power in hospitals.

[11] They showed that the TPB predicted intentions with a high degree of accuracy, and that it was moderately successful in the prediction of actual behavior.

[12] We mention at the end of the article some limitations of press coverage.

[13] Available at the following address: http://www.citizenworks.org/corp/corp-scandal.php. Last retrieved: April 12, 2011.

[14] Available at the following address: http://www.forbes.com/2002/07/25/accountingtracker.html. Last retrieved: April 12, 2011.

[15] We recognize that the inclusion of these three companies represents a mixed approach to the nature of the sample. However, the qualitative nature of the results does not change when we exclude these three companies from the analysis.

[16] There is no occurrence of 2 (covered by SAS 99 but not ISA 240).

[17] The addition of "perceived moral obligations" to the prediction equation improved prediction of reported lying behavior, but did not help to account for much variance in cheating and shoplifting.

[18] We thank an anonymous reviewer for the EFE-JBE Special Issues Conference for having suggested this approach to strengthen our results.

[19] The different connotation (positive or negative) of words is not related to our research question which concerns the different components of the fraud behavior. Consequently, in the use of a "positive" word, such as "award," and a "negative" word, such as "arrogant," to describe a fraudulent behavior, these words will not offset each other but, conversely, will sum up to increase the perceived behavioral control. A future study may explore if the press tends to use more positive or more negative descriptions of managers who end up committing fraud. The detailed content of the dictionary is available from the authors upon request.

[20] Available by subscription at www.infinancials.com.

[21] There is only one exception to this rule: given that Ahold is a Dutch group, we chose the closest U.S. peer, Kroger in this case.

[22] The detailed list of control firms is available from the authors upon request.

[23] In a few instances, for very large control companies such as AT&T and Yahoo, the number of articles retrieved was so big that we restrained the period under survey to [Y − 1, Y + 1].

[24] In three instances, the CEO has not been involved in the fraud (another senior executive being involved). We have withdrawn these three firms and their peers from our statistical treatment. Our final sample includes 36 treatment and 36 control firms, which generates 72 files.

[25] In some situations, such as when employees exhibit perhaps excessive respect and blind loyalty toward their managers, it is imperative to have appropriate checks and balances as manifested in the existence of a strong internal control system.

[26] Our study is also in line with past research (Gillett and Uddin, 2005) which highlighted the importance of red flags questionnaires, although Pincus (1989) found mixed results concerning the efficacy of these red flags,

and automated decision aids to improve the auditor's ability to detect fraud. Further, this study is in line with Jennings (2006a, b) who identifies "seven signs of ethical collapse," which we can assign to the three dimensions of the fraud triangle and the TPB: (1) incentives ("sign 1: Pressure to meet numbers"), (2) opportunities ("sign 4: A weak board," "sign 5: Conflicts of interest") and (3) incentives/rationalizations ("sign 2: Fear and silence," "sign 3: Sycophantic executives and an iconic CEO," "sign 6: Overconfidence," "sign 7: Social responsibility is the only measure of goodness").

[27] Money shifted from Parmalat's coffers to loss-making travel businesses controlled by the founder's family.

[28] Overestimation of oil reserves.

[29] Underestimation of the accrual for gift certificates.

[30] Definition of the Institute of Forensic Auditors: "Forensic audit is the activity that consists of gathering, verifying, processing, analyzing of and reporting on data in order to obtain facts and/or evidence – in a predefined context – in the area of legal/financial disputes and or irregularities (including fraud) and giving preventative advice" (http://www.ifa-iaf.be/v1/frontEnd/presentation/introduction.html).

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Appendix A: Press articles and SEC documents used for the case studies: statistics and references

A.1

Company	When scandal went public	Number		
		Press articles	SEC documents	Total
Adelphia Communications	2002	5	1	6
Ahold	2003	3	1	4
AIG	2005	4	1	5
AOL	2002	3	1	4
Bristol-Myers Squibb	2002	6	1	7
Cendant	1998	4	1	5
Computer Associates	2002	4	1	5
CMS Energy	2002	2	1	3
Datek Online	1998	3	1	4
Delphi	2004	4	1	5
Dollar General	2002	3	0	3
Duke Energy	2002	3	1	4
Dynegy	2002	3	1	4
El Paso Corporation	2002	4	1	5
Enron	2001	3	1	4
Freddie Mac	2003	6	1	7
Global crossing	2002	3	1	4
Halliburton	2002	4	2	6
Harken Energy	2002	4	0	4
HealthSouth	2002	5	1	6
Homestore.com	2002	3	2	5
HPL Technologies	2002	3	1	4
ImClone Systems	2002	4	1	5
K-Mart	2002	3	1	4
Lucent	2004	3	1	4
Merck	2002	3	0	3
MicroStrategy	2000	6	2	8
Network Associates	2000	2	1	3
Peregrine Systems	2002	4	1	5
Phar-Mor	1992	6	2	8

APPENDIX A

continued

Company	When scandal went public	Number		
		Press articles	SEC documents	Total
Qwest	2002	4	2	6
Reliant Energy	2002	2	2	4
Rite Aid Corporation	2002	4	1	5
Sunbeam	1998	5	1	6
Tyco	2002	3	2	5
Ullico	2002	4	0	4
Waste management	1999	2	2	4
WorldCom	2002	6	4	10
Xerox	2000	3	4	7
Total		146	49	195
Average		3.7	1.3	5.0
Standard deviation		1.2	0.8	1.5
Minimum		2	0	3
Maximum		6	4	10

SEC documents listed in this Appendix were not directly used to fill Table I but only to understand the technical and accounting aspects of the corporate fraud.

A.2

Adelphia Communications

Anonymous, 2002: 'Adelphia founder reports health woes', *AP Online*, June 30.

Caruso, D.B.: 2002, 'For years, Rigas treated Adelphia like a family business', *Associated Press Newswires*, May 25.

Jennings, M. M.: 2006, 'The seven signs of ethical collapse', *European Business Forum* 25 (Summer), 32–38.

Michel, L.: 2002, 'Rigas, in interview, laments failing the ordinary people', *Buffalo News*, June 30, A1.

Michel, L.: 2002, 'Rigas confident of vindication', *Buffalo News* July 30, A1.

SEC (Securities and Exchange Commission): 2002, 'Litigation Release No. 17627 – Accounting and Auditing Enforcement Release No. 1599', July 24.

Ahold

Anonymous, 2003: 'Crisis is a sight to Ahold', *In-Store Marketing*, April 7, 17.

Crouch, G., 2004: 'Ahold reaches a settlement with the S.E.C.', *The New York Times*, October 14, 1.

McCartney, R.J., 2003: 'Food baron's fall shakes Dutch; 'Superman' CEO leaves Ahold empire in jeopardy', *The Washington Post* March 1, A1.

SEC (Securities and Exchange Commission): 2004, 'Litigation Release No. 18929 – Accounting and Auditing Enforcement Release No. 2124', October 13.

AIG

Kadlec, D.: 2005, 'Down… But not out prosecutors are swarming around him, but Hank Greenberg is as focused as ever–and not giving an inch. How he rose so far and fell so fast', *Time* June 20, 50.

Murray, A.: 2005, 'Greenberg lost sight of the long view', *The Wall Street Journal* June 22, A2.

SEC (Securities and Exchange Commission): 2006, 'Litigation Release No. 19560 – Accounting and Auditing Enforcement Release No. 2371', February 9.

Starkman, D.: 2005, 'Greenberg Accused of 'Self-Dealing'; Charity Hurt by Stock Sale, Spitzer Says', *The Washington Post*, December 15, D03.

Stoll, I.: 2005, 'Greenberg lashes out at Spitzer, defends his role at foundation, AIG', *The New York Sun* December 16.

AOL

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Maccoby, M.: 2003, 'The narcissist-visionary; learning to love your difficult boss', *Forbes Magazine* 171(05), 36.

SEC (Securities and Exchange Commission): 2005, 'Litigation Release No. 51400 – Accounting and Auditing Enforcement Release No. 2215, March 21.

Bristol-Myers Squibb

Countryman, A.: 2004, 'False profits lead corporate insiders to riches', *Chicago Tribune* September 5.

Dash, E.: 2004, 'Bristol-Myers agrees to settle accounting case', *The New York Times* August 5.

Harris, G.: 2003, 'Will the pain ever let up at Bristol-Myers?', *The New York Times* May 18, 1.

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SEC (Securities and Exchange Commission): 2004, 'Complaint – U.S. District Court', August 4.

Winter, G. and R. Abelson: 2002, 'The optimist leading Bristol-Myers', *The New York Times*, May 12, 1.

Cendant

Barrett, A.: 1998, Cendant: Who's to blame? A loose accounting culture may lie at the core of the debacle *Business Week*, August 17, 70.

Lubanko, M.: 2004, 'Cendant Executives to Be Placed on Trial for Accounting Fraud', *The Hartford Courant* (KRTBN), May 7.

Nelson, E.: 1998, 'Cendant dismisses a senior finance aide – Ex-CUC executive denies knowing irregularities existed in accounting', *The Wall Street Journal*, April 20, A3.

Morgenson G.: 2004, 'Before Enron, there was Cendant', *The New York Times* May 9.

SEC (Securities and Exchange Commission): 2001, 'Litigation Release No. 16910 – Accounting and Auditing Enforcement Release No. 1372', February 28.

Computer Associates

Alphonso C.: 2000, 'A man of apparent contradictions – Software tycoon devoted to charities', *The Globe and Mail*, August 8, B9.

Anonymous: 2000, 'Accept tech as a part of business', *Business Times Singapore* April 24.

Eltman F.: 2006, 'As Kumar spoke of reform, crimes had already been committed', *Associated Press Newswires*, April 29.

SEC (Securities and Exchange Commission): 2004, 'Litigation Release No. 18665 – Accounting and Auditing Enforcement Release No. 1988, April 8.

Svensson P.: 2000, 'Computer Associates CEO steps down', *Associated Press online*, August 7.

CMS Energy

Barber, J.: 2002, 'US attorneys enter trading probe of CMS signals expansion of wash-trading investigation', *Platts Oilgram News* 80(101).

Irwin J.: 2002, 'CMS Energy CEO resigns amid bogus 'round-trip' energy trades', Associated Press, May 24.

SEC (Securities and Exchange Commission): 2004, 'Accounting and Auditing Enforcement Release No. 1978', March 17.

Datek Online

Barboza, D., 1999: 'Datek Online's chief agrees to step down', *The New York Times*, October 7.

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SEC (Securities and Exchange Commission): 2006, 'Litigation Release No. 19891 – Accounting and Auditing Enforcement Release No. 2504' October 30.

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how to sack executives who are kin', *The Wall Street Journal* B1, July 24.

Duke Energy

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SEC (Securities and Exchange Commission): 2005, 'Securities Exchange Act of 1934 Release No. 51995 – Accounting and Auditing Enforcement Release No. 2273' July 8.

Dynegy

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Anonymous: 2001, 'FERC judge: ''Prima facie'' case of El Paso affiliate abuse', *Dow Jones Energy Service* August 6.

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Enron

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Global crossing

Creswell, J. and Prins, N.: 2002, 'The Emperor of greed; With the help of his bankers, Gary Winnick treated Global Crossing as his personal cash cow– until the company went bankrupt', *Fortune*, 145(13), June 24, 106.

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Appendix B: Case studies of corporate scandals

This appendix presents a detailed analysis of the behavioral motivations of 39 corporate scandals. The components are classified according to the combined theory (FT/TPB): Incentives-pressures (col. 1), opportunities (col. 2), attitudes/rationalizations (this latter component being subdivided into four separate components taken from the TPB: attitude (col. 3), subjective norms (col. 4), perceived behavioral control (col. 5) and moral obligation (col. 6)). A numbering system is used after each component to refer to SAS 99 and ISA 240: 1 = covered by both SAS 99 and ISA 240, 2 = covered by SAS 99 but not ISA 240, 3 = covered by ISA 240 but not SAS 99 and 4 = covered by neither SAS 99 and ISA 240. FFR stands for ''Fraudulent Financial Reporting'' while ''MA'' represents a ''Misappropriation of Assets.'' We mention the type of fraud after the company name. FFR is present in all the cases under study:

No.	Companies	Incentives/ pressures (col. 1)	Opportunities (col. 2)	Attitudes/rationalizations			
				Attitude (toward the fraud) (col. 3)	Subjective norms (col. 4)	Perceived behavioral control (col. 5)	Moral obligation (col. 6)
1.	Adelphia Communications (FFR – MA)	To meet Wall Street expectations (1)	Family link (1)	To meet Wall Street expectations (1) Personal enrichment (3) To maintain a high living standard, greed, ''To have the funds to support his lifestyle'' (4)			Sees himself as someone very generous and helpful. Money used to help people (4)

APPENDIX B

continued

No.	Companies	Incentives/ pressures (col. 1)	Opportunities (col. 2)	Attitudes/rationalizations			
				Attitude (toward the fraud) (col. 3)	Subjective norms (col. 4)	Perceived behavioral control (col. 5)	Moral obligation (col. 6)
2.	Ahold (FFR)	Ambition for the group: to build an empire (1) Fixation on growth (1) Compete with Wal Mart (1) Launched mergers ⇒ debts ⇒ to hide (1) Stock options (1)	Relationship with the distributors (1)	Stock options (1) Greed (4) Company's success and CEO's personal success: reputation at stake (4)		Managers' personality ("Mass market retailer of the year 2001"…) (4)	According to him, he acted for the good of the company, and the good of the Company was also his good (4)
3.	AIG (American International Group) (FFR)	Pressure from the financial market which was criticizing the decline in AIG's reserves (1) Important shareholder and share price (1) Stock options (2)	Complex transactions (1)	Stock options (1) Obsessed by the daily fluctuations in the company's stock price (1) Company's success = CEO's personal success – Reputation – Pride – "Imperial chief executive" – The market would lose faith in the company without him (4)		Managers' personality: tyrannical, nobody dared to oppose him (4)	

APPENDIX B

continued

No.	Companies	Incentives/ pressures (col. 1)	Opportunities (col. 2)	Attitudes/rationalizations			
				Attitude (toward the fraud) (col. 3)	Subjective norms (col. 4)	Perceived behavioral control (col. 5)	Moral obligation (col. 6)
4.	AOL (FFR)	Growth. To be able to buy the "giant" Time Warner (1) Pressure of the financial market: considered advertising revenues as important to measure the performance (1) Share price (1) Stock options (1)	Use of estimates (1)	Stock options (1)		Chairman: Narcissist person (4)	
5.	Bristol-Myers Squibb (FFR)	To keep pace with rivals by reporting double-digit profit growth (1) To meet internal sales and earnings targets and analysts' earnings estimates (1) Share price (1) Stock options, compensation bonus (1)	"Channel stuffing" (sales to wholesalers) (1)	Stock options (1)	Influence of the managers (4)	Firm's culture of "making the numbers" (4) Managers' personality (youngest chief executive…) (4) Lack of experience (4)	

APPENDIX B

continued

No.	Companies	Incentives/ pressures (col. 1)	Opportunities (col. 2)	Attitudes/rationalizations			
				Attitude (toward the fraud) (col. 3)	Subjective norms (col. 4)	Perceived behavioral control (col. 5)	Moral obligation (col. 6)
6.	Cendant (FFR – MA)	To make the merger with HFS possible (1) Stock options (1)	Auditor located far away (1) Manual accounting systems (1)	Personal enrichment: payment of their living expenses (planes, golf). Too high living expenses (3)			
7.	Computer associates (FFR)	Pressure to present strong growth figures (1) Stock options (1)	Domination of management by a small group (1)	Personal enrichment with sale of stock options (1) High standard of living (expensive cars) (4)		Awards received for the best managed company (4) "Software titan" (4)	Donation to and promotion of charitable causes (4) Built day-care centers for their children in CA offices (4)
8.	CMS Energy (FFR)	Performance-based compensation, year-end bonus (1) To be a credible marketer (4) Possible energy market manipulation. To follow Enron's example (4)	"Round-trip" trades (1)	Personal enrichment: boosting the revenues to increase year-end bonuses (4)			

APPENDIX B

continued

No.	Companies	Incentives/ pressures (col. 1)	Opportunities (col. 2)	Attitudes/rationalizations			
				Attitude (toward the fraud) (col. 3)	Subjective norms (col. 4)	Perceived behavioral control (col. 5)	Moral obligation (col. 6)
9.	Datek Online (FFR)	Growth and creation of a group of companies (1)	Highly complex transactions (1)	High standard of living (personal plane) (4)		"Technology wizard" CEO appears in many rankings (4)	
10.	Delphi (FFR)	To hide the bad financial state (1) To fund pension obligations (1) To hide a dispute with General Motors (1) To meet analyst earnings expectations (1) Increase of stock price and sale of stocks (1) Performance-based salary (stock options, incentives (1)	Several executives involved (1). Auditor's failure (1)	Greed (performance-based salary) (4)			
11.	Dollar General (FFR)	Growth (1) Stock options (1)	Direct involvement of the CEO in preparing the company's financial results (1)			Image of "marketing genius" (4)	Donation to endow a program on moral leadership at a University (4)

APPENDIX B

continued

No.	Companies	Incentives/ pressures (col. 1)	Opportunities (col. 2)	Attitudes/rationalizations			
				Attitude (toward the fraud) (col. 3)	Subjective norms (col. 4)	Perceived behavioral control (col. 5)	Moral obligation (col. 6)
12.	Duke Energy (FFR)	Performance-based compensation, year-end bonus (1)	"Round-trip" trades (1)	Personal enrichment: manipulation to maximize the size of the year-end bonuses and other performance-based compensation (4)			
13.	Dynegy (FFR)	Salaries based on performance (1)	"Round-trip" trades (1) Close relationship between executives (1)	To be a leading global energy company (4)			
14.	El Paso Corporation (FFR)	Success and profitability (4) Top-rank of energy traders (4) To complete a merger (1) Ownership and increase of stock price (1) Salaries based on performance (1)	"Round-trip" trades (1)	Personal enrichment (stock price) (1)			
15.	Enron (FFR – MA)	Growth (1) To enter the burgeoning deregulated energy markets without sacrificing the credit rating (4)	Personal relationship between executives (1) Audit failure (1)	Personal enrichment: off-balance sheet partnerships (3)	Influence of the CFO (4)	CFO: Image of financial genius, arrogant, self-confident (4) Threat toward analysts (4)	Donation to the city's art museum, fund-raiser for the local Holocaust Museum (4)

APPENDIX B

continued

No.	Companies	Incentives/ pressures (col. 1)	Opportunities (col. 2)	Attitudes/rationalizations			
				Attitude (toward the fraud) (col. 3)	Subjective norms (col. 4)	Perceived behavioral control (col. 5)	Moral obligation (col. 6)
16.	Freddie Mac (FFR)	To meet analysts' expectations (reduction of earnings) – Appearance of sustained, predictable growth (1) Stock options (1)	Conflict of interest for the auditor (charity) (4) Corporate culture, which encourages fraud to approximate analysts' forecasts (4)	Stock options (1) Personnel ambition (to become the CEO) (4)			Donation to charities (4)
17.	Global crossing (FFR – MA)	Sustainability of the firm (1) To meet securities analysts estimates (1) Sale of shares (1)	Swap of network capacity (1)	Personal enrichment: Consulting and real estate fees. Confusion between company's assets and his own's. (3) Greed, ambition: to build an empire (''the Emperor of Greed'') (4) Personal enrichment: sale of shares when the business was going bad (4)		Chairman is bright, aggressive and has a huge ego. ''Roman emperor'' (4)	
18.	Halliburton (FFR)	Bad state of the economy (1) Sales of shares (1)	Auditor's failure (1) Political link of the managers (4)	Greed (4) Stock options: sale of stock options (1)			
19.	Harken Energy (FFR)	Sales of shares (1)	Political link of the managers (4)	Insider trading (4) Passion for sports (purchase of a football team) (4)			

APPENDIX B

continued

No.	Companies	Incentives/ pressures (col. 1)	Opportunities (col. 2)	Attitudes/rationalizations			
				Attitude (toward the fraud) (col. 3)	Subjective norms (col. 4)	Perceived behavioral control (col. 5)	Moral obligation (col. 6)
20.	HealthSouth (FFR)	Pressure from the market (1) Sales of shares (1) Salaries based on earnings (1)	Lack of experience of certain mid-level executives (4) Involvement of many executives (4)	Greed. Acquisition of planes, house and yacht (4) Wanted to be the "highest-paid CEO in the world" (4)		CEO "terrorizing his colleagues and employees" (and analysts and journalists) (4) Power and influence (network) (4)	Donation to charities (4) Creation of a church (4)
21.	Homestore.com (FFR)	Revenue growth (advertising revenue) (1) Contract with AOL (4) Sale of shares (1)	"Round-trip" transactions (1) Fraud hidden to auditors (4)	Greed (sale of shares) (4) CEO's power, ambition (the CEO embodied the company) (4)			
22.	HPL Technologies (FFR)	Growth in revenues (1) To be able to make an IPO (1) Collapsing markets of Silicon Valley and the world of high tech (1)	Auditor's failure (1)			Admired head of a fast-growing software company (4)	The CEO funneled his own money to the company accounts in an attempt to cover fake sales (4)

APPENDIX B

continued

No.	Companies	Incentives/ pressures (col. 1)	Opportunities (col. 2)	Attitudes/rationalizations			
				Attitude (toward the fraud) (col. 3)	Subjective norms (col. 4)	Perceived behavioral control (col. 5)	Moral obligation (col. 6)
23.	Im Clone Systems (FFR)	Sales of shares (insider trading) (1)	Family link (1)	Personal enrichment (4) Standard of living to maintain (4) To pay debts (secured by the stocks) (4) Insider trading for himself and his family. Protect the wealth of his family and friends (4)			
24.	K-Mart (FFR – MA)	Competition with Wal-Mart (price war) (1) Survival (weight of debts) (1) Performance-based bonuses, stock options (1)	Junior executives were demoted or transferred when they refused to make unrealistic forecasts (1)	Personal enrichment (personal air travel), loans to themselves (3)			
25.	Lucent (FFR)	Internal sales target. External sales target (1) Bonus on sales (1) Keep their job (1)	Deficient internal control (1)	Personal enrichment: bonuses on each sale they achieved (4) Career: So as to keep their jobs and/or to be promoted, by meeting the internal sales targets (4)			

APPENDIX B

continued

No.	Companies	Incentives/ pressures (col. 1)	Opportunities (col. 2)	Attitudes/rationalizations			
				Attitude (toward the fraud) (col. 3)	Subjective norms (col. 4)	Perceived behavioral control (col. 5)	Moral obligation (col. 6)
26.	Merck (FFR)	To make the Company look successful (1) Growth in revenues (1) To ease the IPO of a subsidiary (1)	Auditor's failure (1)	No apparent personal interest			
27.	MicroStrategy (FFR)	To boost the firm's share price (1)	Total control of the company (1)	Personal problems (alcohol) (4)		CEO's ego (4) Impressed by wealth (4)	
28.	Network Associates (FFR)	To become the world's leading provider of network security products (1) High growth rate targets (1) Sale of stock options (1) Performance-based salary (1)	Round-trip trades (1)	Unreachable targets (1) Career, image of competence (4)		CEO bullying his employees ("suicide [is] sometimes an appropriate response to failure") (4)	
29.	Peregrine Systems (FFR – MA)	Peregrine's success and viability in the short-run (1) Insider trading (sale of shares) (1) Stock options (1)	Family link. Outside board member = brother-in-law of the chairman (1) Auditor's failure (the auditor even encouraged the fraud) (1)	Personal enrichment (stock options) (1) Acquisition of golf membership (3)			Donation to charities (4)

APPENDIX B

continued

No.	Companies	Incentives/ pressures (col. 1)	Opportunities (col. 2)	Attitudes/rationalizations			
				Attitude (toward the fraud) (col. 3)	Subjective norms (col. 4)	Perceived behavioral control (col. 5)	Moral obligation (col. 6)
30.	Phar-Mor (FFR – MA)	To restore the Company's profitability (1)	Very little oversight inside the company (1) Auditor's failure (1)	Personal enrichment (home, jet, car…). (3) Passion for sports (funding of a basketball team) (4)	Influence of the CEO (4)	CEO fascinated his co-executives ("god") (4)	
31.	Qwest (FFR)	To meet earnings projections (1) Double-digit growth (1) Ambition: mergers needed (1) Insider trading (sale of shares) (1) Bonus based on the stock performance (1)	Collusion between several top executives (1)	Passion for burgeoning sports and entertainment empire (4) Ambition, thirst of power. To build an empire (4) Not to lose face (4)			
32.	Reliant Energy (FFR)	Ambition for the company: make the company one of the best energy traders (1) Enron's influence (energy market) (1)	Round-trip trades (1) New field, new market (4)	Executive's career and image of competence (4)			

APPENDIX B

continued

No.	Companies	Incentives/ pressures (col. 1)	Opportunities (col. 2)	Attitudes/rationalizations			
				Attitude (toward the fraud) (col. 3)	Subjective norms (col. 4)	Perceived behavioral control (col. 5)	Moral obligation (col. 6)
33.	Rite Aid Corporation (FFR)	To do better than his father ⇒ mergers ⇒ high debt (1) Rite aid as a powerful retail company (1) Sale of shares (1) Salaries based on performance (1)	Family link (1)	High standard living (helicopter) (4) Real estate transaction with the family (4) Ambition and competence (4)		Martin Grass was bullying his employees and partners (4)	
34.	Sunbeam (FFR)	Growth in earnings (1) Sale of shares (1)	Auditor's failure (1)	Worldwide reputation, recognition (4)		CEO considered as a miracle worker, a genius by the business world (4) Tyrannical CEO (4)	
35.	Tyco (FFR – MA)	Ambition: image of a growth company (1) Many (expensive) acquisitions (1) Unauthorized bonuses (1)	Auditor's failure (1)	Personal enrichment (use of loans for luxury apartments, yachts, jewelry, parties) (3) Greed (4)			
36.	Ullico (FFR)	Stock options (insider trading) (1)	Many executives and directors involved (1)	Personal enrichment with sale of shares (4)			

APPENDIX B

continued

No.	Companies	Incentives/ pressures (col. 1)	Opportunities (col. 2)	Attitudes/rationalizations			
				Attitude (toward the fraud) (col. 3)	Subjective norms (col. 4)	Perceived behavioral control (col. 5)	Moral obligation (col. 6)
37.	Waste Management (FFR)	Earnings target (1) Stock options (1) Bonus based on performance (1)	Auditor's failure (1)	Professional career (4)			
38.	WorldCom (FFR)	Company's performance (1) Ever growing revenue and income (1) To meet analysts' forecast (1) To maintain the share price (1)	Management hides the truth (1)	Personal enrichment (shares of the company) (1)	Complicity between the CEO and the CFO (4)	Autocratic boss (4)	Donation to charities (4) Fund raising for the local college (4) Scholarships, free telephone service for hurricane victims (4)
39.	Xerox (FFR)	Earnings target (1) To boost the firm's share price (1) Increase in compensation (including stock-options) (1)	Auditor's failure (1) Opposition within the board (1)	Personal enrichment (shares of the company) (1)			

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Player and Referee Roles Held Jointly: The Effect of State Ownership on China's Regulatory Enforcement Against Fraud

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ABSTRACT. This article examines the impact of the prevailing state ownership in the Chinese stock market on corporate governance and the financial regulatory system, respectively, as the internal and external monitoring mechanisms to deter corporate fraud and protect investors. In line with the literature that state ownership exaggerates the agency problem, we find that the retained state ownership in privatised firms increases the incidence of regulatory enforcements against fraud. For the state-owned enterprises (SOEs), however, larger state ownership is associated with a lower incidence of enforcement actions. This is attributed to the mutual political affiliation of the fraudulent SOEs and the regulatory commission. A new regulation "*Solutions for Listed Firm Checks*" promulgated in March 2001 has mitigated this effect by empowering the regulatory commission to increase the severity of regulatory conditions. Our evidence confirms the improvement in the regulatory environment and investor protection in the Chinese stock market brought about by the regulatory reform and development.

KEY WORDS: China, corporate governance, regulatory enforcement, fraud, fraud inspection, investor protection, political connection, regulatory commission, regulatory condition, state ownership

Introduction

Although China has experienced dramatic development in its capital markets, the influence of the state remains dominant in many respects. The state controls nearly 80% of the listed firms in the Chinese stock market (Chen et al., 2009) and retains ownership in nearly half of the privatised listed firms (Chen et al., 2008). Meanwhile, the state remains influential in the legal and financial regulatory system, undermining judicial and regulatory independence (Allen et al., 2005; Chen, 2003; Chen et al., 2005). Such institutional features have been found to affect the effectiveness of monitoring listed firms and investor protection, but its impact on regulatory inspection and enforcement against fraud is as yet under-researched. This article intends to shed light on this issue.

The determinants of fraud have been widely discussed in the literature of finance, economics, law and business ethics. International evidence (Beasley, 1996; Beasley et al., 2000; Chen et al., 2006; Dechow et al., 1996; Uzun et al. 2004) suggests that board independence measured by the proportion of independent or outside directors, and the presence of an audit committee help to enhance the internal monitoring mechanisms and consequently reduce the incidence of fraud. In addition to the board of directors, a supervisory board also plays a monitoring role for Chinese listed firms. Ding et al. (2007, 2011) and Jia et al. (2009), however, show that this is not effective in deterring fraudulent activities, but passively reacts to enforcement actions. Firth (2005) show that the China's Securities Regulatory Commission (CSRC) (regulatory commission hereafter) is concerned about fraud because auditors are sanctioned for failing to detect and report certain material misstatement frauds. Chen et al. (2005) show that the regulatory commission is not a toothless tiger as its enforcement actions decrease the stock price of the fraudulent firms.

These studies have weaknesses in that they fail to consider the impact of state ownership of the listed firms on the effectiveness of external monitoring mechanisms, although Allen et al. (2005), Anderson (2000), Chen (2003) and Chow (1997) acknowledge that political connections play an important role in

the Chinese legal and financial regulatory systems, and the laws and regulations are not effectively enforced when the politically powerful defendants are involved. We therefore expect that fraud inspection differs across firms with various strengths of political connections. In addition, the impact of exogenous regulatory changes has not been considered in the literature; in particular, the consequence of the new regulation "*Solutions for Listed Firm Checks*", promulgated in 2001, has not been investigated. Finally, the data used in some of the studies were collected from newspapers and could miss some enforcement actions. This article aims to remedy these shortcomings by arguing that state ownership plays an important role in the effectiveness of both corporate governance and legal/regulatory systems, as internal and external monitoring mechanisms, respectively, and that regulatory changes also influence the regulatory environment.

To carry out our analysis, we include all regulatory enforcements of fraud from 1999 to 2008 in the Chinese stock market and, respectively, construct a firm-year sample and a matching-firm sample as robustness checks of each other. We classify the listed firms into state-owned enterprise (SOEs) and non-state-owned enterprises (non-SOEs). Our main findings are as follows. For non-SOEs, the ratio of state ownership is positively related to the incidence of regulatory enforcements against fraud. This confirms our prediction that state ownership weakens the internal monitoring mechanism of the listed firms leaving opportunities for management to commit fraud. This is in line with the literature (see Cheung et al., 2010; Clarke, 2003; Gul et al., 2010; Shleifer and Vishny, 1986) that state ownership aggravates agency problems. Meanwhile, the fraudulent activities in non-SOEs are likely to be uncovered by the regulatory commission in that they lack political resources which could otherwise provide favourable regulatory conditions (Allen et al., 2005; Anderson, 2000).

For SOEs, however, we find that the ratio of state ownership is negatively related to the incidence of regulatory enforcements against fraud. Although the literature suggests that SOEs with concentrated state ownerships are associated with even weaker corporate governance, they tend to affiliate with the central government which has the supreme power. The politically powerful affiliations of these fraudulent SOEs could bring certain privileges in the regulatory environment and help them to avoid the non-transparent selective inspections from the regulatory commission. Such privileges of political connection, however, have been substantially weakened by the new regulation "*Solutions for Listed Firm Checks*" promulgated in March 2001 to replace the old regulation "*Solutions to Carry Out Listed Firm Checks System*". This new regulation mandates regular and detailed fraud inspections on all listed firms to substitute for the practice of selective inspections, empowering the regulatory commission and increasing inspection severity (Chen et al., 2005). We document an increase in the incidence of regulatory enforcements on SOEs with larger state ownerships and richer in political resources following the promulgation of the new regulations; whilst the sanction incidence on non-SOEs is not significantly affected. This suggests that the fraud inspection and enforcement actions are subject to less political intervention under the new regulation. These findings exist in both the firm-year sample and the matching-firm sample, and are robust to the controls of firm characteristics (i.e. size, growth), operating performance, corporate governance (i.e. ownership concentration, CEO duality, board size and board independence) as well as industry and region fixed effects.

Our findings contribute to the literature in several ways. This is the first study, to our knowledge, to compare the effects of state ownership on the incidence of regulatory enforcements against fraud between SOEs and non-SOEs. For the corporate governance literature, we empirically confirm the argument that state ownership damages the effectiveness of internal monitoring mechanisms. For the literature on legal and regulatory systems, we provide new evidence that state affiliation of both the listed firms and the regulatory commission harms regulatory independence and regulation enforcement. In addition, this is also the first study, to our knowledge, to examine the exogenous regulatory changes on the severity of fraud inspection. For the literature on economic reform, we show that the new regulation of "*Solutions for Listed Firm Checks*" yields a beneficial impact to this emerging stock market of China.

Evidence of an increase in the incidence of regulatory enforcements in SOEs with rich political resources suggests a decline in the privilege of political connections, which in turn enhances regulatory enforcement, and improves shareholder protection and the investment environment. It adds to the literature on fraud by showing that not only internal monitoring mechanisms, but also external monitoring mechanisms contribute to regulatory enforcements.

The remainder of this article is organised as follows. Second section reviews the literature and develops the testable hypotheses. Third section presents the research design and sample characteristics. Fourth section interprets the empirical results and last section concludes.

Literature and hypothesis

Internal governance and fraud

Board characteristics

The board of directors is one of the most crucial vehicles in corporate governance mechanisms to provide internal monitoring. Poor oversight through weak corporate governance can provide opportunities for management to carry out fraud (Dechow et al., 1996). John and Senbet (1998) find that board characteristics, including board independence, CEO turnover, board size and committee structure, determine board effectiveness, which consequently affects the incidence of fraud. Independent (outside) directors are believed to be able to increase the board's ability to monitor management effectively (Fama and Jensen, 1983) and enhance shareholder wealth maximisation (Rosenstein and Wyatt, 1990). Beasley (1996) and Dechow et al. (1996) identify the important role of the independent (outside) directors in reducing the likelihood of financial statement fraud, respectively, from their samples of 75 firms from 1980 to 1991 and 92 similar firms from 1982 to 1992. Beasley et al. (2000) perform analysis of fraud within three volatile industries (technology, health care, and financial services). They notice the varying fraud techniques across industries and find a majority of outside directors to be less common in fraudulent firms compared with non-fraudulent industry benchmarks. Uzun et al. (2004) also have the same findings based on 133 fraudulent or criminal firms from 1978 to 2001. Evidence of emerging stock markets from Chen et al. (2006) and Firth et al. (2011) shows that outside directors and directors with an accounting or financial background help to reduce the fraudulent practice of Chinese listed firms.

In many listed firms, an audit committee is appointed to examine information accuracy and forms a part of the internal monitoring structure. Information accuracy helps to enhance the monitoring quality of the board and ensures the board remains vigilant. Although Beasley (1996) documents no evidence in his sample, Dechow et al. (1996) find that the presence of an audit committee helps to reduce fraud. Beasley et al. (2000) and Uzun et al. (2004) further indicate the importance of the composition of the audit committee: audit committees in fraudulent firms tend to have smaller percentages of outside and independent directors, and have lower meeting frequency. Chen et al. (2006) show that auditors with better quality, measured by the audit firm size, are more capable of deterring and correcting fraud.

In addition to the board of directors, a supervisory board serves as an additional monitoring organ for Chinese listed firms following the German corporate governance model. Dahya et al. (2003) find that investors care about the supervisory board report, but the supervisory board in most of the firms acts as a censored watchdog rather than an independent supervisor. This evidence does not justify the usefulness of the supervisory board in China. Ding et al. (2007, 2011) and Jia et al. (2009) show that the supervisory board only passively reacts to the regulatory enforcement and increased meeting frequency is not helpful in deterring fraud or recurrence of fraud.

Finally, although the characteristics of the management, such as the duality of CEO and Chairman roles and CEO tenure, influence corporate governance (John and Senbet, 1998), their effects on the likelihood of fraud have mixed results. There is no significant impact documented in Beasley (1996), Beasley et al. (2000), Chen et al. (2006), and Uzun et al. (2004), but there is in Dechow et al. (1996). Denis et al. (2006) show that option-based compensation could serve as an incentive for the management to engage in fraudulent activities.

Ownership characteristics

Besides board characteristics, the ownership structure has also been found to play an important role in corporate governance. In China, 80% of the listed firms are state-owned-enterprises (SOEs) with the state as the dominant shareholder (Chen et al., 2009). State ownership is also prevalent in the privatised non-SOEs: although control has been transferred from the state to private investors as a result of privatization, the state often retains a proportion of ownership as a non-dominant or minority shareholder (Chen et al., 2008). State ownership and especially concentrated state ownership could aggravate the agency problem (Shleifer and Vishny, 1986) in that state shareholders tend to operate firms for political purposes such as controlling sensitive industries (Clarke, 2003) and reducing local unemployment rate (Fan et al., 2007), instead of shareholder wealth maximization. Cheung et al. (2010) empirically verify that state ownership in both SOEs and non-SOEs is negatively associated with the corporate governance quality index (CGI) constructed in their study. In addition, state ownership is found to weaken the information environment of listed firms (Gul et al., 2010), and this further holds back the monitoring functions of the board and outside investors. These results suggest that state ownership directly and indirectly undermines the effectiveness of the internal monitoring mechanisms, thereby increasing the chances of fraudulent activities.

External governance and fraud

Outside investors

In addition to internal governance, listed firms are subject to other sources of oversight or supervision. From the culture perspective, Lu (1997, 2008) argues that Chinese traditional Confucian ethics may help to develop business ethics. More importantly, outside investors, through the wealth implication of stock price, form an important part of the external monitoring mechanism: disclosed fraud leads to a depression of the stock price, and consequently decreases in shareholders' wealth and executives' equity-based compensation. In the Chinese stock market, however, state shareholders and executives in SOEs are much less concerned with the stock price because the state shares are subject to imposed trading constraints and are restricted from free trading[1] (Chen et al., 2008; Hou and Howell, 2011), and because the executives' compensations in SOEs are found to be not significantly related to the stock return (Firth et al., 2006). Hence, the wealth implication of stock price tends to be inadequate to urge state shareholders and executives in SOEs to deter fraudulent activities.

Financial institutions

Disclosed fraud can jeopardize reputation and credibility of the fraudulent firm and consequently affect its ability to raise capital and its cost of capital. When the share price drops, the firms need to issue more shares to raise the same amount of capital from the equity market. Institutional investors, such as fund companies, may refuse to purchase the issued shares due to the decreased liquidity and information quality following the announcement of fraud as documented in Chen et al. (2005), Dechow et al. (1996) and Firth et al. (2010). Likewise, the damaged credibility could also prevent fraudulent firms from getting loans from banks, which are concerned about the accuracy of their accounting statements. However, firms with state ownership are less affected. Although the Chinese banking sector has been experiencing considerable reforms in various aspects, the state still controls virtually all of the sizable banks in China, and political connections continue to play an important role in gaining access to bank finance. Firth et al. (2009) note that the state shareholder, no matter whether it is in a dominant position or not, is able to help either state-owned or private firm to obtain bank loans. Khwaja and Mian (2005) show that politically connected firms are able to borrow 45% more from government banks than non-connected firms. In like manner, almost all securities companies are controlled by the government (Firth et al., 2010), and politically connected issuing firms enjoy significant benefits of their preference (Francis et al., 2009). Given these institutional features, firms with state ownership in the Chinese stock market tend to be less affected by the damaged credibility and thus have less strong incentives to ensure that fraud does not occur.

Chinese legal and regulatory systems

Allen et al. (2005) indicate the underdevelopment of the legal system in China by pointing out

government interference in the legal system and the lack of legal enforcement. The legal system provides few options for minority investors to take private enforcement action against the misconduct of blockholders (Jiang et al., 2010). Chinese courts are believed to be not politically powerful and consequently are reluctant to take cases involving (politically) powerful defendants (Clarke, 2003); and this is even more true for the main securities regulator CSRC (see Anderson, 2000; Chen et al., 2005, 2006). Among others, the duties for this regulatory commission include formulating regulations for the securities markets, examining and supervising listed firms. The regulatory commission is not independent of the government, but financed and answerable to the State Council (Chen et al., 2005), which also appoints its senior directors. Meanwhile, many of its supervisees, i.e. listed firms, are also affiliated with the government. Chen et al. (2009) show that around 14% of listed firms are affiliated to central government, and around 66% of the listed firms are affiliated to the provincial, local governments or their agencies known as the state asset management bureaus. Fan et al. (2007) further show that 27% of the CEOs of the newly partially privatised firms in China are former or current government bureaucrats. Li et al. (2006) observe that, due to the excessive government regulation and the weak legal system, private entrepreneurs also try to participate in politics in order to acquire certain privileges or resources brought about by their political connections. This is backed up by the argument in Chow (1997) that China has the appearance of a semi-legal system with the other half being supplied by the informal (political) network. Because politics and adjudication are often mixed and there is no effective judicial independence, to what extent the laws and regulations are enforced depends partially on the political resources of the involved parties (Chen, 2003). The SOEs with larger state ownerships are believed to be endowed with richer political resources as they are more commonly affiliated to the central government (Chen et al., 2009), and the state has a stronger intention to maintain its influence in these firms, and helps to secure favourable legal and regulatory conditions (Allen et al., 2005).

The regulatory commission used to carry out fraud inspection in accordance with the previous regulation of "*Solutions to Carry Out Listed Firm Checks System*" promulgated in December 1996, which was believed to be far too generous in that the regulatory commission adopted a practice of selective inspection on the listed firms (Chen et al., 2005). The non-transparent timing and sampling method to inspect listed firms were solely and privately decided by the regulatory commission. Due to the aforementioned institutional features, which gives rise to a conflict of interest between the "fair play" in practicing regulation and the monopoly power of the state (Allen et al., 2005), the regulatory commission may choose not to inspect the firms with rich political resources. Fraudulent activities are thus less likely to be uncovered or incur enforcement actions.

The situation could be mitigated by the new and more severe regulation "*Solutions for Listed Firm Checks*" promulgated to replace the "*Solutions to Carry Out Listed Firm Checks System*" in March 2001. The new regulation abolished selective inspection and induced regular checks and special checks, which are more comprehensive and detailed (Chen et al., 2005). The regulatory checks mandates the inspection of all listed firms including these with rich political resources, and the special checks assigns specialised inspection items. The new regulation is therefore expected to increase the authority of the regulatory commission and inspection severity by putting the firms with rich political resources under increased scrutiny. Although the new regulation does not make the regulatory commission independent, or guarantee that every fraud in these firms is uncovered and incurs effective enforcement, it is expected to increase the incidence of disclosed frauds and subsequent regulatory enforcements in these firms.

Hypotheses development

The detection of fraud

Regulatory enforcement can be taken only against disclosed fraud, which is a subset of total fraud. There may be some fraudulent activities uncovered in the inspections. We hereby express regulatory enforcement against disclosed fraud (*Fraud*) as a function of total fraud and inspection severity as follows:

$$Fraud = f(Total\ Fraud,\ Inspection\ Severity) \quad (1)$$

Both *Total Fraud* and *Inspection Severity* are expected to positively influence *Fraud* in that firms with more fraudulent activities are more likely to be found out, and fraudulent activities are more likely to be identified under closer scrutiny. As *Total Fraud* is unobservable, *Fraud* is used as its proxy in the literature, the impact of the *Inspection Severity*, however, tends to be ignored. Given the discussed institutional features of the Chinese stock market, we argue that inspection severity differs across listed firms with different entity. In particular, non-SOEs are treated impartially in fraud inspections because regulatory commission is independent of them; whereas SOEs are treated favourably because of the mutual political affiliation between them and the regulatory commission.

Non-SOEs

Given the institutional features that the state still retains some ownership in many privatised firms, i.e. non-SOEs (Chen et al., 2008), and the evidence that state ownership holds back the information environment (Gul et al., 2010), corporate governance (Cheung et al., 2010), and consequently internal monitoring mechanisms, fraudulent activities are expected to be more frequent in non-SOEs with large state ownerships than non-SOEs with low or nil state ownership. Despite having some retained state ownership, non-SOEs are not affiliated with the government, and therefore, lack the political resources to avoid fraud inspection to conceal misconducts. Hence, fraudulent activities in non-SOEs are likely to be uncovered and to incur enforcement actions. We thereby hypothesize that:

H1: In non-SOEs, state ownership increases the incidence of regulatory enforcements against fraud.

SOEs

Although state ownership of SOEs hampers the internal monitoring mechanism to deter fraudulent activities, SOEs have government affiliation which plays an important role in the semi-legal system (Chow, 1997) and which could influence the inspection severity of the regulatory commission to bring about favourable regulatory conditions. This is expected to be more pronounced in the SOEs with larger state ownership, because their political connection tends to stronger and they tend to affiliate with the ultimate authority, i.e. the central government (Chen et al., 2009). Controlled by the government, the regulatory commission is reluctant to enforce regulation effectively when government's affiliates of this kind are involved, and may even choose not to put these firms under scrutiny. This is possible when inspections take place in selected listed firms only under the regulation of "*Solutions to Carry Out Listed Firm Checks System*" promulgated in 1996. We hereby hypothesize that:

H2: In SOEs, state ownership decreases the incidence of regulatory enforcements against fraud.

New regulation

The new regulation "*Solutions for Listed Firm Checks*" promulgated in 2001 endows the regulatory commission with greater authority and enhances the inspection severity by mandating "regular checks" on all listed firms and "special checks" on specialised items to replace the non-transparent "selective checks" required in the previous regulation "*Solutions to Carry Out Listed Firm Checks System*" promulgated in 1996 (Chen et al., 2005). The SOEs with large state ownership, which have poor corporate governance but rich political resources, can no longer avoid inspection, and their fraudulent activities become more likely to be uncovered and incur regulatory enforcements than previously. We thereby hypothesize that:

H3: The promulgation of the new regulation "Solutions for Listed Firm Checks" in 2001 is associated with an increase in the incidence of regulatory enforcements against fraud in the SOEs with larger state ownership.

Research design

Model specifications

To empirically test the predictions in hypotheses H1 and H2, we apply a probit regression model as follows:

$$Fraud = \alpha_0 + \alpha_1 SOE + \alpha_2 SOR + \alpha_3 SOE.SOR + \sum_{k=1}^{k} \alpha_{k+3} Control_k + \varepsilon \quad (3)$$

where *Fraud* is a dummy variable assigned to 1 if the firm is subject to a regulatory enforcement against fraud, and 0 otherwise; *SOE* is a dummy variable assigned to 1 for state-owned enterprises, and 0 otherwise. *SOR* is the state ownership ratio which is measured by the percentage of shares held by the state. Note that the state retains minority ownership in some privatised listed firms. *SOE* and *SOR* are thereby interacted. A set of 1-year lagged control variables are incorporated to control the firm characteristics, firm operating performance, and corporate governance, including the natural logarithm of market capitalisation (*LnMC*), price-to-book ratio (*PB*), industry-median adjusted return on assets (*IROA*), dummy variable of ownership concentration (*OwnCon* is equal to 1 if the Herfindahl index based on the top 10 largest blockholders of the firm is above the median of the yearly observations, and 0 otherwise), dummy variable of foreign control (*Foreign* is equal to 1 if the dominant shareholder of the firm is a foreign investor, and 0 otherwise), dummy variable of duality (*Duality* is equal to 1 if CEO holds the position of the board chair, and 0 otherwise), dummy variable of board meetings (*DBmeeting* is equal to 1 if the number of board meetings is above the median value of the yearly observations, and 0 otherwise), dummy variable of board size (*DBsize* is equal to 1 if the number of board members is above the median value of the yearly observations, and 0 otherwise), the dummy variable of the ratio of the independent directors in the board (*DInd* is equal to 1 if the ratio is above the median value of the yearly observations, and 0 otherwise), and the dummy variable of the supervisory board size (*DSsize* is equal to 1 if the number of supervisory board members is above the median value of the yearly observations, and 0 otherwise). The control variables are lagged for 1-year to deal with the causality issue. Industry and region dummies are also included to control for the impact of industry and regional effects. The industry dummies are constructed based on the first two digits of the GICS (Global Industry Classification Standard) codes. The region dummies are constructed by following Firth et al. (2006), in which the firms are grouped into four different regions based on the levels of economic development: (1) Shanghai and Shenzhen; (2) The more developed areas including the open cities and provinces along the coast; (3) The inland provinces; and (4) the least developed area in the north-western part of the country. In Eq. 2, coefficients α_2 and α_3, respectively, capture the impacts of state ownership on the incidence of regulatory enforcement against fraud in non-SOEs and in SOEs. If $\alpha_2 > 0$ ($\alpha_3 < 0$), then state ownership is associated with higher (lower) incidences of enforcement actions in non-SOEs (SOEs), supporting our prediction in hypothesis H1 (H2).

To test hypothesis H3, we apply the following probit regression model in the samples of SOEs and non-SOEs, respectively:

$$Fraud = \alpha_0 + \alpha_1 PostNR + \alpha_2 SOR + \alpha_3 PostNR.SOR + \sum_{k=1}^{k} \alpha_{k+3} Control_k + \varepsilon \quad (3)$$

where *Fraud* remains the dummy variable assigned to 1 if the firm is subject to regulatory enforcement against fraud, and 0 otherwise; *PostNR* is a dummy variable assigned to 1 for the years after the promulgation of the new regulation "*Solutions for Listed Firm Checks*", i.e. 2001 onwards, and 0 otherwise; *SOR* is the state ownership ratio measured by the percentage of shares held by the state. *SOR* and *PostNR* are interacted to capture the impact of the new regulation on the incidence of regulatory actions among firms with larger state ownership. The same set of control variables are incorporated to control the firm characteristics, firm operating performance, and corporate governance. These control variables remain subject to a 1-year lag to cope with the causality problem. If $\alpha_3 | SOE > 0$ (i.e. the coefficient of the interaction term, *PostNR.SOR*, in the sample of SOEs is significantly positive) the hypothesis H3 is supported in the sense that the new regulation improves the regulatory enforcement among the firms with rich political resources. In fact, this also reinforces our hypothesis H2 because if the smaller incidence of the regulatory enforcements on these SOEs were

not due to the favourable regulatory condition brought by their political connections as we argued, but other underlying reasons such as the argument of their good corporate governance as a result of the alignment effect of the ownership concentration in Ding et al. (2007), the new regulation with increased inspection severity would not give rise to higher incidence of the regulatory enforcement actions on them. We predict that the $\alpha_3|non-SOE$ (i.e. the interaction term, *PostNR.SOR*, in the sample of non-SOEs) is not significant in that the regulatory commission is independent of the non-SOEs, and treats them impartially in fraud inspection at all times.

Sample description and characteristics

The data of regulatory enforcement against fraud, firm identity (i.e. SOE or non-SOE); firm characteristics, operating performance and the corporate governance indicators are taken from the CCER/Sinofin (China Centre for Economic Research). The state ownership ratio and the corporate governance variables are from GTA/CSMAR (China Stock Market and Accounting Research). The sample period covers a decade from 1999 to 2008. We take 1999 as the starting year because the 1-year lagged corporate governance variables used in this study are only available since 1998 in the database and also because there were overlapping supervision responsibilities of the regulatory commission with other agency bodies until 1998 (Chen et al., 2005). To perform empirical analysis, we construct two sets of sample, namely a firm-year sample and a matching-firm sample as robustness checks of each other. The matching-firm sample is constructed in the same way as Jia et al. (2009) that each fraudulent firm is matched with a non-fraudulent firm within 20% of its size, measured by the book value of total assets, from the same industry.

The yearly and industry distributions of disclosed fraudulent activities and the fraudulent firms are presented in Table I. In panel A, the numbers of disclosed fraudulent activities (*NFraud*), fraudulent firms (*FFirm*) and firms with multiple fraudulent activities (*MFFirm*) soared in 2001. The number of fraudulent SOEs, the ratio of fraudulent firms relative to total firms (*FFirm/Total*), and the ratio of fraudulent SOEs relative to the total SOEs (*FSOE/SOE*) also peak in the year of 2001, in which the new regulation "*Solutions for Listed Firm Checks*" was promulgated to increase the inspection severity. This is in support of our prediction about the effects of the new regulation in H3. Note that our observations are larger than that documented in Chen et al. (2006) because their data was manually collected from newspaper and perhaps with some omissions. Panel B shows the numbers of fraudulent activities and fraudulent firms in various industries. The ratio of disclosed fraudulent firms (*FFirm/Total*) is larger than the ratio of disclosed fraudulent SOEs (*FSOE/SOE*) across all industries. Given the worse corporate governance of SOEs noted in the literature, this may imply their favourable regulatory conditions. The telecommunication services industry, which includes only 25 firm-year observations, is associated with the highest ratios of fraudulent firms and fraudulent SOEs. In addition, the ratios are also relatively high among consumer staples, information technology, and financial industries. This coincides with the argument of low-integrity in banks and investment banks in Jensen (2010). Beasley et al. (2000) also point out that the industry traits could affect the commission of fraud. We therefore apply the industry fixed effects in our empirical analysis to make sure the results are not driven by a few industries.

Empirical findings

Descriptive statistics

Panel A and B of Table II, respectively, presents descriptive statistics of the variables in the firm-year sample and the matching-firm sample used in our analysis. In panel A, about 4% of firms are subject to regulatory enforcement against fraud. State-owned enterprises (SOEs) account for 73.09% of the total number of Chinese listed firms, and the overall mean (median) state ownership ratio is as large as 32.07% (34.63%), indicating the prevailing influence of the state. The ratio of firms with a foreign dominant shareholder is as small as 0.88%. Panel B compares the firm characteristics and corporate governance of the fraudulent firms and non-fraudulent firms in the matching-firm sample. For each fraudulent firm,

TABLE I

This table presents a yearly and industry breakdown of our sample. The sample period covers 1999–2008 and includes stocks in both Shanghai and Shenzhen exchanges. In panel A, *FraudN* indicates the number of disclosed fraudulent activities. *FFirm* is the number of fraudulent firms. *MFFirm* is the number of firms with multiple fraudulent activities. *FSOE* is the number of fraudulent SOEs (State-owned Enterprises). *Total* and *SOE*, respectively, indicates the number of listed firms and SOEs in the Chinese stock market. In panel B, the industries are classified based on the first two digits of the GICS (Global Industry Classification Standard) codes

Year	*FraudN*	*FFirm*	*MFFirm*	*FSOE*	*Total*	*SOE*	*SOE/Total* (%)	*FSOE/FFirm* (%)	*FFirm/Total* (%)	*FSOE/SOE* (%)
Panel A										
1999	13	13	0	7	911	768	84.30	53.85	1.43	0.91
2000	17	17	0	11	1048	869	82.92	64.71	1.62	1.27
2001	73	67	5	49	1125	925	82.22	73.13	5.96	5.30
2002	60	50	8	40	1193	929	77.87	80.00	4.19	4.31
2003	56	45	10	31	1257	923	73.43	68.89	3.58	3.36
2004	70	60	10	33	1352	934	69.08	55.00	4.44	3.53
2005	100	69	26	34	1351	934	69.13	49.28	5.11	3.64
2006	97	71	21	32	1410	916	64.96	45.07	5.04	3.49
2007	79	61	15	27	1526	921	60.35	44.26	4.00	2.93
2008	39	35	2	18	1599	954	59.66	51.43	2.19	1.89

	FraudN	*FFirm*	*MFFirm*	*FSOE*	*Total*	*SOE*	*SOE/Total* (%)	*FSOE/FFirm* (%)	*FFirm/Total* (%)	*FSOE/SOE* (%)
Panel B										
Energy	17	14	1	7	339	283	83.48	50.00	4.13	2.47
Materials	100	81	17	52	2500	1962	78.48	64.20	3.24	2.65
Industrials	88	72	14	41	2580	1872	72.56	56.94	2.79	2.19
Consumer discretionary	113	94	16	65	2677	1866	69.70	69.15	3.51	3.48
Consumer staples	76	61	10	39	951	697	73.29	63.93	6.41	5.60
Health care	41	32	8	13	884	526	59.50	40.63	3.62	2.47
Financials	45	38	6	21	1009	576	57.09	55.26	3.77	3.65
Information technology	87	66	20	30	1207	750	62.14	45.45	5.47	4.00
Telecommunication services	7	4	1	2	25	18	72.00	50.00	16.00	11.11
Utilities	20	16	4	12	556	501	90.11	75.00	2.88	2.40
Unclassified	10	10	0	0	44	22	50.00	0.00	51.82	0.00

a non-fraudulent firm of similar size (within 20% difference in the book value of total assets) from the same industry is matched to construct the matching-firm sample by following Jia et al. (2009). The fraudulent firms with missing control variables or matching firms are dropped, and the final sample includes 409 pairs of firms. It shows that the fraudulent firms are associated with larger size, worse past operating performance, CEO duality, and lower board meeting frequency. This preliminary result suggests the importance of corporate governance to deter fraud.

Table III presents the correlation matrix between the main variables. The regulatory enforcement against fraud (*Fraud*) is negatively related to both the state entity (*SOE*) and state ownership ratio (*SOR*),

TABLE II

Panel A and B, respectively, present the summary statistics of the variables in the firm-year sample and the matching-firm sample. The sample period covers 1999–2008. *Fraud* is a dummy variable assigned to 1 if the firm is subject to a regulatory enforcement against disclosed fraud, and 0 otherwise. *SOE* is a dummy variable assigned to 1 for state-owned enterprises, and 0 otherwise. *SOR* is the state ownership ratio which is measured by the percentage of shares held by the state. *PostNR* is a dummy variable assigned to 1 for the years after the promulgation of the new regulation "*Solutions for Listed Firm Checks*", i.e. 2001 onwards, and 0 otherwise. The 1-year lagged control variables include natural logarithm of market capitalisation (*LnMC*), price-to-book ratio (*PB*), industry-median adjusted return on asset (*IROA*), dummy variable of ownership concentration (*OwnCon* is a dummy variable which is equal to 1 if the Herfindahl index based on the top 10 largest blockholders of the firm is above the median of the yearly observations, and 0 otherwise), dummy variable of foreign control (*Foreign* is equal to 1 if the dominant shareholder of the firm is a foreign investor), dummy variable of duality (*Duality* is equal to 1 if CEO holds the position of the board chair, and 0 otherwise), dummy variable of board meetings (*DBmeeting* is equal to 1 if the number of board meetings is above the median of the yearly observations, and 0 otherwise), dummy variable of board size (*DBsize* is equal to 1 if the number of board members is above the median of the yearly observations, and 0 otherwise), the dummy variable of the ratio of the independent directors in the board (*DInd* is equal to 1 if the ratio is above the median of the yearly observations, and 0 otherwise), and the dummy variable of the supervisory board size (*DSsize* is equal to 1 if the number of supervisory board members is above the median of the yearly observations, and 0 otherwise). ⋆, ⋆⋆, and ⋆⋆⋆ denotes 10, 5 and 1% levels of significance

	Mean	Std. Dev.	25%	Median	75%	Obs.
Panel A. Descriptive statistics of the firm-year sample						
Fraud	0.0394	0.1945	0	0	0	11,456
SOE	0.7309	0.4435	0	1	1	11,456
SOR	0.3207	0.2527	0.0068	0.3463	0.5396	11,456
PostNR	0.8610	0.3460	1	1	1	11,456
LnMC	20.5109	0.9349	19.8685	20.4257	21.0333	11,456
PB	4.2283	4.1464	1.9962	3.1765	5.0905	11,456
IROA	−0.0015	0.0186	−0.0055	0.0001	0.0068	11,456
OwnCon	0.5082	0.5000	0	1	1	11,456
Foreign	0.0088	0.0935	0	0	0	11,456
Duality	0.0169	0.1290	0	0	0	11,456
DBmeeting	0.5850	0.4927	0	1	1	11,456
DBsize	0.3507	0.4772	0	0	1	11,456
DInd	0.5904	0.4918	0	1	1	11,456
DSsize	0.9060	0.2918	1	1	1	11,456

TABLE II
continued

	Matching-firm sample			Fraudulent firms			Non-fraudulent matching firms			Difference in means
	Median	Mean	Std. Dev.	Median	Mean	Std. Dev.	Median	Mean	Std. Dev.	*t* Statistics
Panel B. Descriptive statistics of the matching-firm sample										
SOE	1	0.6186	0.4860	1	0.6015	0.4902	1	0.6357	0.4818	−1.0322
SOR	0.2805	0.2853	0.2469	0.2802	0.2780	0.2435	0.2808	0.2925	0.2504	−0.8911
LnMC	20.0892	20.1461	0.8847	20.1195	20.2085	0.8917	20.0345	20.0838	0.8742	3.6932***
PB	3.2750	4.4485	4.7564	3.2678	4.5791	5.0609	3.2790	4.3178	4.4335	0.9236
IROA	−0.0043	−0.0154	0.0295	−0.0100	−0.0208	0.0295	−0.0020	−0.0101	0.0286	−6.5453***
OwnCon	0	0.3826	0.4863	0	0.3570	0.4797	0	0.4083	0.4921	−1.6186
Foreign	0	0.0037	0.0605	0	0.0024	0.0494	0	0.0049	0.0698	−0.5769
Duality	0	0.0147	0.1203	0	0.0122	0.1100	0	0.0171	0.1299	1.6703*
DBmeeting	0	0.4878	0.5002	0	0.4230	0.4946	1	0.5526	0.4978	−3.7050***
DBsize	0	0.3289	0.4701	0	0.3178	0.4662	0	0.3399	0.4742	−0.6722
DInd	1	0.5966	0.4909	1	0.6039	0.4897	1	0.5892	0.4926	0.5566
DSsize	0	0.3289	0.4701	1	0.9095	0.2872	1	0.8924	0.3102	0.8680
Obs.	818			409			409			409

TABLE III

This table presents the correlation matrix of the variables used in our analyses. The sample period covers 1999–2008. *Fraud* is a dummy variable assigned to 1 if the firm is subject to a regulatory enforcement against disclosed fraud, and 0 otherwise. *SOE* is a dummy variable assigned to 1 for state-owned enterprises, and 0 otherwise. *SOR* is the state ownership ratio which is measured by the percentage of shares held by the state. *PostNR* is a dummy variable assigned to 1 for the years after the promulgation of the new regulation "*Solutions for Listed Firm Checks*", i.e. 2001 onwards, and 0 otherwise. The 1-year lagged control variables include natural logarithm of market capitalisation (*LnMC*), price-to-book ratio (*PB*), industry-median adjusted return on asset (*IROA*), dummy variable of ownership concentration (*OwnCon* is a dummy variable which is equal to 1 if the Herfindahl index based on the top 10 largest blockholders of the firm is above the median of the yearly observation and 0 otherwise), dummy variable of foreign control (*Foreign* is equal to 1 if the dominant shareholder of the firm is a foreign investor, and 0 otherwise), dummy variable of duality (*Duality* is equal to 1 if CEO holds the position of the board chair, and 0 otherwise), dummy variable of board meetings (*DBmeeting* is equal to 1 if the number of board meetings is above the median, and 0 otherwise), dummy variable of board size (*DBsize* is equal to 1 if the number of board members is above the median, and 0 otherwise), the dummy variable of the ratio of the independent directors in the board (*DInd* is equal to 1 if the ratio is above the median, and 0 otherwise), and the dummy variable of the supervisory board size (*DSsize* is equal to 1 if the number of supervisory board members is above the median, and 0 otherwise). ⋆ Denotes 1% level of significance

	Fraud	*SOE*	*SOR*	*PostNR*	*LnMC*	*PB*	*IROA*	*OwnCon*	*Foreign*	*Duality*	*DBmeeting*	*DBsize*	*Dind*	*DSsize*
Fraud	1													
SOE	−0.0437⋆	1												
SOR	−0.0426⋆	0.6173⋆	1											
PostNR	0.0715⋆	−0.1313⋆	−0.0551⋆	1										
LnMC	−0.0791⋆	0.1343⋆	0.0389⋆	0.1359⋆	1									
PB	0.0441⋆	−0.0491⋆	−0.0824⋆	−0.0568⋆	0.1248⋆	1								
IROA	−0.2067⋆	0.0551⋆	0.0780⋆	0.0106	0.3179⋆	−0.0054	1							
OwnCon	−0.1043⋆	0.1954⋆	0.4253⋆	−0.1053⋆	0.0395⋆	−0.0684⋆	0.1029⋆	1						
Foreign	−0.0134	−0.1488⋆	−0.1014⋆	−0.0033	0.0218	0.0258⋆	−0.0067	−0.0335⋆	1					
Duality	−0.01	−0.0231⋆	−0.0334⋆	−0.0929⋆	0.0013	0.0292⋆	−0.0233⋆	−0.0359⋆	0.0228	1				
DBmeeting	−0.0458⋆	0.0573⋆	0.0611⋆	0.0114	−0.0507⋆	−0.0470⋆	−0.0026	0.0459⋆	−0.0036	−0.0124	1			
DBsize	−0.0554⋆	0.1129⋆	0.0803⋆	−0.1624⋆	0.0907⋆	−0.0379⋆	−0.0017	0.0079	−0.0127	0.0102	0.0397⋆	1		
DInd	−0.0458⋆	−0.1624⋆	−0.1177⋆	0.2383⋆	0.0541⋆	−0.1518⋆	0.0428⋆	−0.1336⋆	0.0095	−0.0374⋆	−0.0279⋆	0.0301⋆	1	
DSsize	−0.0288⋆	0.1140⋆	0.0934⋆	−0.0869⋆	0.0376⋆	−0.0124	0.006	0.0465⋆	−0.0344⋆	−0.1354⋆	−0.0141	0.1231⋆	0.0227⋆	1

TABLE IV

This table presents the empirical results of the following regression model from the firm-year sample and the matching-firm sample

$$Fraud = \alpha_0 + \alpha_1 SOE + \alpha_2 SOR + \alpha_3 SOE.SOR + \sum_{k=1}^{k} \alpha_{k+3} Control_k + \varepsilon,$$

where dependent dummy variable *Fraud* is assigned to 1 if the firm is subject to a regulatory enforcement against disclosed fraud, and 0 otherwise; *SOE* is a dummy variable assigned to 1 for state-owned enterprises, and 0 otherwise; *SOR* is the state ownership ratio which is measured by the percentage of shares held by the state. The 1-year lagged control variables are defined in the Appendix. The sample period covers 1999–2008. All *t* statistics are reported and adjusted for heteroskedasticity. ⋆, ⋆⋆, and ⋆⋆⋆ denotes 10, 5 and 1% levels of significance

	Firm-year sample				Matching-firm sample			
	Regression I		Regression II		Regression III		Regression IV	
SOE	0.0099	0.13	−0.0166	−0.22	0.0694	0.47	0.1425	0.85
SOR	0.5916	2.61⋆⋆⋆	0.7179	2.84⋆⋆⋆	0.8640	1.82⋆	0.9565	1.86⋆
SOE.SOR	−0.9797	−3.83⋆⋆⋆	−0.7693	−2.7⋆⋆⋆	−1.2047	−2.22⋆⋆	−1.1662	−1.94⋆
LnMC	−0.2117	−7.76⋆⋆⋆	−0.0751	−2.46⋆⋆	0.1204	2.28⋆⋆	0.2074	3.31⋆⋆⋆
PB	0.0209	4.61⋆⋆⋆	0.0151	3.17⋆⋆⋆	0.0044	0.47	0.0065	0.54
IROA			−16.3393	−17.2⋆⋆⋆			−11.5812	−6.04⋆⋆⋆
OwnCon			−0.1748	−3.18⋆⋆⋆			0.0323	−0.28
Foreign			−0.6859	−1.55			−0.5791	−0.82
Duality			−0.2996	−1.38			−0.1106	−0.29
DBmeeting			−0.2230	−4.73⋆⋆⋆			−0.3175	−3.16⋆⋆⋆
DBsize			−0.0525	−1.03			−0.0936	−0.86
DInd			−0.0244	−0.49			0.0733	0.65
DSsize			−0.0658	−0.84			0.1713	1.04
Intercept	2.5400	4.6⋆⋆⋆	0.4576	−0.54	−2.4327	−2.32⋆⋆	−4.6127	−3.16⋆⋆⋆
Industry	N		Y		N		Y	
Region	N		Y		N		Y	
Pseudo R^2	0.0362		0.1499		0.0103		0.0938	
Obs.	11,460		11,460		818		818	

but positively related to the promulgation of the new regulation (*PostNR*). This is in support of our hypotheses. In addition, value firms, large firms, and firms with sound corporate governance are associated with lower incidence of enforcements actions. The negative correlation between past operating performance and enforcement implies that the motivation of the firms to commit fraud is to prevent being delisted by the exchange. Chinese listed firms with 2-year consecutive losses will be ''Specially Treated'' and those with 3-year consecutive losses will be delisted (see Liu and Lu, 2007). On the contrary, the major motivations for earnings manipulation in the US have been identified as the desire to attract external financing at low cost (Dechow et al., 1996) and to obtain an increase in share price (Kellogg and Kellogg, 1991).

Test of hypothesis 1 and 2

Table IV presents the results for the test of hypotheses H1 and H2. We examine and compare the impact of state ownership (*SOR*) on the incidence of regulatory enforcements against fraud in SOEs and non-SOEs by regressing the dependent dummy variable (*Fraud*) on the state entity (*SOE*), the state ownership ratio (*SOR*) and their interaction term (*SOE.SOR*) as shown in Eq. 2. The regressions I and II in Table IV are based on firm-year sample while regressions III and IV are based on matching-firm sample. To construct the matching-firm sample, each fraudulent firm is matched with a non-fraudulent firm within 20% difference of size in terms of book value from same industry (See Jia et al., 2009). The regressions I and III include only

TABLE V

This table presents the empirical results of the following regression model from the firm-year sample and the matching-firm sample. Each sample is further split into SOEs (State-owned enterprises) and Non-SOEs

$$Fraud = \alpha_0 + \alpha_1 PostNR + \alpha_2 SOR + \alpha_3 PostNR.SOR + \sum_{k=1}^{k} \alpha_{k+3} Control_k + \varepsilon,$$

where dependent dummy variable *Fraud* is assigned to 1 if the firm is subject to a regulatory enforcement against disclosed fraud, and 0 otherwise. *SOR* is the state ownership ratio which is measured by the percentage of shares held by the state. *PostNR* is a dummy variable assigned to 1 for the years after the promulgation of the new regulation "*Solutions for Listed Firm Checks*", i.e. 2001 onwards, and 0 otherwise. The 1-year lagged control variables are defined in the Appendix. The sample period covers 1999–2008. All *t* statistics are reported and adjusted for heteroskedasticity. ⋆, ⋆⋆, and ⋆⋆⋆ denotes 10, 5 and 1% levels of significance

	Firm-year sample				Matching-firm sample			
	SOE		Non-SOE		SOE		Non-SOE	
	Regression I		Regression II		Regression III		Regression IV	
SOR	−1.2399	−2.92⋆⋆⋆	−0.1630	−0.13	−3.8181	−2.15⋆⋆	0.3953	0.09
PostNR	0.2208	1.32	0.1664	0.84	−1.6238	−2.31⋆⋆	0.2043	0.39
SOR.PostNR	1.2629	2.84⋆⋆⋆	0.9063	0.73	3.9804	2.23⋆⋆	1.4895	0.32
LnMC	−0.1103	−2.83⋆⋆⋆	−0.1048	−1.86⋆	0.2202	2.7⋆⋆⋆	0.2287	1.86⋆
PB	0.0186	3.05⋆⋆⋆	0.0078	1.09	0.0062	−0.4	−0.0047	−0.19
IROA	−17.6626	−12.95⋆⋆⋆	−14.1147	−10.03⋆⋆⋆	−16.6383	−5⋆⋆⋆	−5.8114	−1.95⋆
OwnCon	−0.1629	−2.37⋆⋆	−0.2075	−2.15⋆⋆	−0.2227	−1.4	0.1300	0.62
Foreign	Dropped		−0.6940	−1.68⋆	Dropped		−0.6497	−0.96
Duality	−0.4306	−1.32	−0.1256	−0.39	−0.5657	−1	0.0380	0.06
DBmeeting	−0.1962	−3.26⋆⋆⋆	−0.3118	−3.72⋆⋆⋆	−0.2298	−1.73⋆	−0.3855	−1.94⋆⋆
DBsize	−0.0533	−0.85	−0.2026	−2.02⋆⋆	−0.1319	−0.91	−0.2975	−1.47
DInd	−0.1552	−2.48⋆⋆	−0.1438	−1.4	0.0146	0.09	0.1475	0.63
DSsize	−0.0981	−0.94	−0.0792	−0.67	−0.0578	−0.24	0.5699	2.15⋆⋆
Intercept	1.4356	1.4	1.4890	1.26	−3.1972	−1.66⋆	−4.7771	−1.78⋆
Industry	Y		Y		Y		Y	
Region	Y		Y		Y		Y	
Pseudo R^2	0.1635		0.1849		0.1370		0.1604	
Obs.	8397		3083		506		312	

the key variables and 1-year lagged firm characteristics while the regression II and IV also incorporate 1-year lagged control variables of firm performance, corporate governance, as well as industry and region dummies.

Capturing the impact of state ownership in non-SOEs, the coefficients of state ownership (*SOR*) in regression I (0.5916) and III (0.8640) are significantly positive. This shows that the non-SOEs with a larger state ownership ratio, are more likely to be subject to regulatory enforcements against fraud, and therefore supports our hypothesis H1. On the one hand, non-SOEs with larger state ownership have less effective internal monitoring mechanisms because of their worse corporate governance and information environment documented in the literature, giving increased opportunities for fraudulent activities; on the other hand, non-SOEs are not officially affiliated with the government and therefore lack political affiliation to help them to avoid fraud inspection and/or enforcement actions. With 1 standard deviation increase (i.e. 0.2527 in the firm-year sample, and 0.2469 in the matching-firm sample as shown in Table II) in the state ownership, the results from regression I and III, respectively, suggest 14.95 and 21.33% rise in the incidence of regulatory actions in non-SOEs, implying the economic significance of the results.

The impact of the state ownership in SOEs is captured by the coefficients of the interaction term *SOE.SOR*, which are, as predicted in hypothesis H2, significantly negative in regression I (−0.9797) and III (−1.2047). Although state ownership has been found to exaggerate the agency problem in the literature, it also reflects the interests and intention of the government to maintain its influence and strengthens the political connection of SOEs. Chen et al. (2009) show that SOEs with higher state ownership tend to affiliate with the central government, i.e. the supreme authority. The political affiliations of higher ranks are more likely to bring about privileges for the SOEs in the regulatory system, and therefore decrease the incidence of regulatory enforcement actions on them. With 1 standard deviation increase (i.e. 0.2527 in the firm-year sample, and 0.2469 in the matching-firm sample as shown in Table II) in the state ownership, the results of regression (I) and (III), respectively, suggest 24.76 and 29.74% reduction in the incidence of enforcement actions in SOEs, showing the economic significance of the impact.

Hypotheses H1 and H2 are, again, empirically verified in regressions II and IV with all control variables incorporated and with industry/region fixed effects applied. The coefficients of *SOR* (*SOE.SOR*) remain significantly positive (negative) as 0.7179 and 0.9565 (−0.7693 and −1.1662) in regression II and IV, respectively; and the economic significance remains strong in the presence of control variables. Among the control variables, the operating performance (*IROA*) and the dummy variable of meeting frequency are significantly negative in both samples. This confirms the argument in Liu and Lu (2007) that firms with poor operating performance have incentives to manage earnings to prevent being de-listed. Moreover, in an untabulated analysis, we replace the industry-median adjusted performance measure (*IROA*) with the raw measure (*ROA*, i.e. Return-on-asset) and a dummy variable of the imminent de-listing risk (*ST* is equal to 1 if the firm is labelled as ''special treated'' by the exchange for its consecutive losses, and 0 otherwise), and the results are consistent. In particular, firms with 1 standard deviation decrease in *IROA* and firms being labeled as ''special treated'' are associated with about one-third increase in the incidence of regulatory actions. This has important policy implication for the regulatory commission and practical implication for the board that firms with poor performance and delisting risk deserve severe inspection and monitoring in order to better protect the investors. In addition, the firms with meeting frequency above the median is associated with 22.30% (31.75%) lower possibility of receiving sanctions from the regulatory commission as suggested in regression II (IV). This is in line with the argument in Uzun et al. (2004) that meeting frequency could make boards better perform their duties and enhance corporate governance. In an untabulated robustness check, we incorporate 1-year lagged key variables (i.e. SOE, SOR and their interaction term) to address the potential problem of endogeneity, adjust the clustering standard errors in the firm-year sample, and perform the analysis in a sub-sample of 446 cases of ''fraudulent statement and/or withholding disclosure''. The results remain consistent with the findings in Table IV.

Test of hypothesis 3

Table V presents the results for the test of hypothesis H3. We separately examine the impact of an exogenous change in the inspection severity brought about by the new regulation of ''*Solutions for Listed Firm Checks*'' promulgated in 2001 on the regulatory enforcement against fraud in SOEs and non-SOEs. We regress the regulatory enforcement against the state ownership ratio (*SOR*), the new regulation dummy (*PostNR*), and their interaction term (*SOR.PostNR*) as shown in Eq. 3. Again, regressions I and II (III and IV) are applied on the firm-year sample (matching-firm sample). Regression I and III (II and IV) are tested in the sample of SOEs (non-SOEs).

Capturing the impact of the regulatory change in the SOEs with larger state ownership ratio (*SOR*), the coefficients of the interaction term (*SOR.PostNR*) are significantly positive in regression I (1.2629) and III (3.9804). This supports our hypothesis H3 by demonstrating that, albeit their rich political resources, the SOEs with high state ownership and consequently poor corporate governance become

more likely to be sanctioned by the regulatory commission under the new severe regulatory conditions. When the inspection of more detailed items on all listed firms is mandated by the regulation, these SOEs can no longer avoid inspections, and the fraudulent activities are more likely to be uncovered. Specifically, for listed firms with the median level of state ownership in the firm-year sample (i.e. 34.63% as shown in Table II), the new regulation raises their incidence of regulatory enforcement actions by 43.76%, showing the economic significance of the impact. This result in fact reinforces our hypothesis H2 in that the documented lower incidence of sanction among the SOEs with higher state ownership in Table IV is not due to better corporate governance, but favourable regulatory conditions. If the result were due to better corporate governance and lower occurrence of fraudulent activities, this regulatory change would not affect them. In addition, it is worth noting that the sum of the coefficients of *SOR* and *SOR.PostNR* is close to 0, suggesting that the privilege of SOEs with rich political resources are roughly eliminated in the new regulatory condition.

As we predicted, the impact of the new regulation is not significant among the SOEs with inferior political resources and non-SOEs independent of the regulatory commission. Because they are not politically powerful enough to influence the ministry-level ranked regulatory commission to enjoy privilege in the regulatory system, they are treated more or less impartially anyway, and the regulatory change does not affect their regulatory condition. The results in Table V are robust with the control of firm characteristics, operating performance, corporate governance, and industry/region fixed effects. Consistent with the finding in Table IV, industry-adjusted performance (*IROA*) and dummy variable of meeting frequency (*DBmeeting*) remain significantly negative. As the sample period prior to and after the regulatory change is asymmetric in our sample, the documented impact may be driven by the recent years rather than the few years following the reform. We therefore perform the analysis based on a smaller sample of 2 years before and after the regulatory change (i.e. 1999–2002) as robustness check, and find that the untabulated results remain consistent with the findings in Table V.

Conclusion

China has been experiencing dramatic development in its capital market, but the financial regulatory system and investor protection remain weak. The main institutional feature, which holds back regulatory environment, is the dual roles played by the state. On the one hand, it controls more than 70% of the listed firms (known as SOEs, state-owned enterprises), and retains state ownership in half of privatised non-SOEs; on the other hand, it controls the regulatory commission known as CSRC (China's Securities Regulatory Commission). This article documents the different effects of state ownership on the regulatory enforcement actions across firms with different entities. In non-SOEs, the retained state ownership increases the incidence of regulatory enforcement against fraud in that the state ownership exaggerates the agency problem leaving chances for fraudulent activities. These misconducts are likely to be uncovered because the regulatory commission is independent of the non-SOEs and treats them impartially in the fraud inspection. In SOEs, however, the state ownership decreases the incidence of regulatory enforcement against fraud. Although the corporate governance in SOEs with large state ownership tends to be worse, their strong political connection could help to secure favourable regulatory conditions and extricate them from fraud inspections. Such privilege has been found to be mitigated by the new regulation "*Solutions for Listed Firm Checks*" promulgated in March 2001, which increases the inspection severity by mandating more comprehensive and detailed inspection on all listed firms.

Our results contribute original evidence of the impacts of state ownership on the regulatory conditions and investor protection. Our results also have some practical and policy implications. The results suggest enhancing auditing and fraud inspections on the listed firms with poor past operating performance and the risk of de-listing as they are more likely to commit fraud. The results also show that the government's reluctance to relinquish influence in the privatised non-SOEs through retained state ownership hinder corporate governance. Finally, the results confirm the improvement of the Chinese regulatory environment following the regulatory change. The finding implies that although the state will maintain its influence in the capital market in the foreseeable

future, the improvement of investor protection is still feasible through regulatory reform and development.

Note

[1] The imposed trading constraints in the Chinese stock market have been gradually relaxed in the Split Share Structure Reform which was launched in 2005 (See Firth et al., 2010; Hou, 2010).

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Appendix: Variable definitions

Fraud	A dummy variable assigned to 1 if the firm is subject to a regulatory enforcement against disclosed fraud, and 0 otherwise
SOE	A dummy variable assigned to 1 for state-owned enterprises, and 0 otherwise
SOR	The state ownership ratio which is measured by the percentage of shares held by the state
PostNR	A dummy variable assigned to 1 for the years after the promulgation of the new regulation "*Solutions for Listed Firm Checks*", i.e. 2001 onwards, and 0 otherwise
The following control variables are lagged for 1 year to solve the causality problem:	
LnMC	The natural logarithm of market capitalisation
PB	Price-to-book ratio
IROA	Industry-median adjusted return on assets
OwnCon	A dummy variable equal to 1 if the the Herfindahl index based on the top 10 largest blockholders of the firm is above the median value of the yearly observations, and 0 otherwise
Foreign	A dummy variable equal to 1 if the dominant shareholder of the firm is a foreign investor, and 0 otherwise
Duality	A dummy variable equal to 1 if CEO holds the position of the board chair, and 0 otherwise
DBmeeting	A dummy variable equal to 1 if the number of board meetings is above the median value of the yearly observations, and 0 otherwise
DBsize	A dummy variable equal to 1 if the number of board members is above the median value of the yearly observations, and 0 otherwise
DInd	A dummy variable equal to 1 if the ratio of independent directors is above the median value of the yearly observations, and 0 otherwise
DSsize	A dummy variable equal to 1 if the number of supervisory board members is above the median value of the yearly observations, and 0 otherwise

The following industry and region dummies are also incorporated in our empirical analyses:

The industry dummies are constructed based on the first two digits of the GICS (Global Industry Classification Standard) codes.

The region dummies are constructed by following Firth et al. (2006), in which the firms are grouped into four different regions by the levels of economic development: (1) Shanghai and Shenzhen; (2) The more developed areas including the open cities and provinces along the coast; (3) The inland provinces; and (4) The least developed area in the north-western part of the country.

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Reactivity and Passivity After Enforcement Actions: Better Late Than Never

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ABSTRACT. We examine the dynamics between enforcement actions and the responses from both the board of directors and supervisory boards amid China's governance reform. Rather than examining determinants of fraudulent activities, we investigate, after enforcement actions are imposed, whether the board of directors and supervisory boards react differently, and whether their different reactions play a role in preventing future occurrences of frauds. We find that both boards react to enforcement actions, but only the responses from the board of directors help us curb future enforcements under certain circumstances. The supervisory board fails to play any role in preventing future enforcements, even though it is one of the two monitoring mechanisms in the listed companies. Policy implications are discussed.

KEY WORDS: corporate governance, enforcement actions, fraud, dual-board structure

Introduction

Fraudulent activities by publicly listed firms normally involve the violations of either capital market regulations or accounting principles. Examples of these fraudulent activities include, but are not limited to, share price manipulations by means of a ''pump-and-dump'' approach, the delay of accounting reports, inaccurate revenues and expenses figures through fictitious transactions, and the expropriation of minority shareholder interests. These fraudulent activities not only damage individual investors' interests but also undermine the integrity of the entire capital market mechanism. Siebert (2007), for instance, claims that fraudulent activities in the U.S. capital market resulted in a loss of over USD 7 trillion in the first 3 years of the twenty-first century.

Emerging markets are not immune to fraudulent activities; rather, a widespread fraud could be found in emerging markets, possibly due to a less-developed macro governance environment (Li et al., 2006). For instance, between 2001 and 2006, 362 enforcement actions on the Chinese stock markets were imposed by capital market regulators, the Chinese Securities Regulatory Commission (CSRC), and/or by the stock exchanges because of fraudulent activities (Jia et al., 2009). Furthermore, it is indicated that some firms engage in fraudulent activities repeatedly. To safeguard investor's interests by mitigating the impairment arising from fraudulent activities, listed companies are expected to take actions to respond to the enforcements efficiently and effectively, and prevent future frauds. However, observations of repeated frauds in China seem to suggest the contrary. Our study is intended to examine how corporate governance mechanisms react to enforcement actions, and whether their responses, if any, are able to eliminate frauds in the periods thereafter. Since it is very hard to discover all the frauds committed by the listed companies due to the informational asymmetry between their investors and management teams, we follow previous studies (e.g., Chen et al., 2006; Dechow et al., 1996; Jia et al., 2009) to utilize enforcement actions as proxies for fraudulent activities.

In the corporate governance literature, few studies have examined the dynamic relationship between fraudulent activities and the subsequent reactions of corporate governance mechanisms. Beasley (1996) and Dechow et al. (1996) find that the involvement of independent board members and the separation of CEO and board chair duties can reduce the incidence of fraud. Chen et al. (2006) find that the

proportion of outside directors, the number of board meetings, and the tenure of the chairman are factors associated with fraud. In a recent study, Jia et al. (2009) find that supervisory boards play an active role in the extent to which a fraudulent firm is punished. However, none of these studies addresses the possible endogeneity issue among the corporate governance, the enforcement actions, and the frauds. For example, it could be fraud or enforcement action that causes executive turnover, CEO/Chair separation, or (more frequent) board meetings. It is also possible that executive turnover and (less frequent) board meetings may facilitate the fraud. Persons' (2006) recent study helps in shedding light on this issue by showing that fraudulent firms tend to have frequent executive turnovers.

This article is expected to enrich the existing literature by identifying the dynamic relationship between enforcement actions and the reactions of the dual boards in the Chinese corporate governance mechanisms: the board of directors and the supervisory board. We employ two structural models to investigate the responses of the dual boards facing enforcement actions, and find that the board of directors and supervisory boards react quite differently. More specifically, we show the passivity of both boards and the reactivity of the board of directors only, when listed companies face the enforcement actions by the CSRC. In this study, the passivity refers to the fact that boards meet more frequently after being punished, and the reactivity refers to the fact that the enforcement-driven board meetings help reduce the likelihood of being punished again due to fraudulent activities. These findings support the different roles of two boards in the dual-board mechanism as documented in prior literature.

Analyzing the dynamics between corporate governance and enforcement actions contributes to the corporate governance research. For firms that have been punished for frauds and for those that do not commit fraudulent activities, it is critical to understand which type(s) of corporate governance structure is(are) better when monitoring/preventing fraud, which elements of the corporate governance systems may react to enforcement, and whether these reactions are effective for preventing future fraudulent activities. Doing so also provides great implications for the regulators of the capital markets, since they would like to identify an efficient fraud-detection-and-monitoring system. With this system, regulators are able to tell whether firms are responding to punitive measures, and whether a firm being punished is likely to commit fraud again. What's more, this system can also help determine the circumstances under which reactions to enforcement do or do not prevent firms from committing fraudulent activities again. In short, findings of this study not only add to the corporate governance literature, but also shed light on the implications for both shareholders and the regulators of the capital markets.

Corruption and frauds are worldwide phenomena, and could be even worse in developing countries. The findings from this study may be well extended to other emerging markets in which a similar institutional environment exists and fighting frauds concerns stakeholders. China's experience or lessons of borrowing and learning best corporate governance practices, as evidenced by its implementation of both American and German styles of corporate governance, may benefit other emerging markets as well. Furthermore, given China's increasingly important role in today's global economy and its status as the biggest emerging market, a better understanding of this future powerhouse, amid its unfolding corporate governance reform, seems needed. North (2005) considers the economic development of China to be one of the most successful stories, but points out that "none of the standard models of economic and political theory can explain China." Our study may shed light on one important aspect of China's capital market characterized by its distinct ownership structure and institutional arrangements.

The remainder of the article is organized as follows: "Institutional background, literature review, and hypothesis development" section addresses the institutional background, literature review, and hypothesis development. "Research methodology" section describes the research methodology and empirical models used, followed by "Empirical analysis" section which presents and discusses the results from the empirical analysis. Conclusions and future research section concludes and proposes avenues for future research.

Institutional background, literature review, and hypothesis development

Corporate governance in China

A general review

China's two stock exchanges were established at the beginning of the 1990s as a step toward a socialist market-oriented economy. As the majority of Chinese listed companies were converted from state-owned enterprises (SOEs), domination by controlling shareholders is one of the typical characteristics of Chinese capital markets. Chen et al. (2006), for instance, show that the central and local governments own about 30% of the shares of listed companies directly and another 30% indirectly through legal entity ownership. Legal entities in China's stock markets are usually SOEs, which are ultimately controlled by the government. The existence of dominant shareholders presents a challenge to the corporate governance mechanism, which is supposed to help mitigate agency conflicts (Shleifer and Vishny, 1997). Dominant ownership makes the conflict between controlling and minority shareholders one of the major agency problems in the Chinese market; the short history of China's stock markets witnesses this concern (Hou and Moore, 2010; Lin et al., 1998). The CSRC has repeatedly claimed that its top priority is to protect the benefits of minority shareholders. The governance reform in Chinese stock markets, through promulgating and amending a series of laws and CSRC regulations, reflects the intention of the Chinese authorities to mitigate agency problems arising from the conflict of interest between majority and minority shareholders.

The existence of dominant shareholders, especially the large stakes held by the government, may lead some to doubt whether the board of directors and top management have the discretion over their behavior and decision making. SOEs before the economic reform are generally required to finish production plans, with little or no say in decision making, but this is not the case since the openness and reform. First, managers of SOEs are sufficiently empowered to make their own managerial decisions, since one of the major objectives of the reform is to help establish modern management style in SOEs. For instance, managers of SOEs have replaced the secretary of enterprise Chinese Communist Party (CCP) committee to become the ''sole representative'' of the firm (Mengistae and Xu, 2004, p. 619), and enjoyed the authority of decision making, including production, investment, bonus scheme design, and for the first time, personnel decisions (Byrd, 1992). Second, the development of the Chinese stock market has seen many non-state listed companies. In Firth et al. (2007), the percentage of non-state firms is 18.4%. In another study, Ding et al. (2008) examine the performance of Chinese family firms by covering a period (1999–2004) that is similar to the sample period in Firth et al. (2007) (1998–2003). According to Ding et al. (2008), family firms, which constitute part of the non-state sample, make up about 11% of total observations during that period. Our sample extends to Year 2006, and covers more non-state-owned firms; the authority of the board of directors in such firms is second to none.

As a typical emerging market, China has been experimenting/importing different governance mechanisms since the inception of its capital markets, with an intention to borrow the best practices around the world. The 1993 *Corporate Law* requires all the listed companies to have a board of directors, a supervisory board, and annual shareholder meetings. While the board of directors is directly involved in strategic and daily operations and the board chair is considered to be the chief executive in listed companies, the supervisory board's main function is to monitor (e.g., Chen et al., 2006; Jia et al., 2009). This two-tier board structure, consisting of both board of directors and supervisory boards, resembles its counterparts in Germany and Japan, but presents different features (Jia et al., 2009; Xi, 2006).

The independent directorship was then imported to enhance the monitoring bodies. Chinese listed companies started experimenting with independent directorships in 1998, but the mandatory requirement on independent directorship began in 2001. Listed companies were first required to start with at least two independent directors and to maintain a minimum of one third of the board directors as independent ones later. The implementation of independent directorships was codified into the *Corporate Law* in 2005 and came into effect on Jan 1, 2006. Commentators and media reports often paint independent directors as ''vase directors'' who only

serve as decorations in the boardroom (Xi, 2006), but positive effects of independent directors in the Chinese listed companies have also been reported; for instance, independent directors are found to play a positive role in corporate disclosure (Firth et al., 2007; Xiao et al., 2004).

The regulation promulgated by the CSRC in 2001 indicated that to ensure independence, certain individuals are not allowed to serve as independent directors in listed companies, including (1) employees who work in the listed company or its affiliated ones, (2) individuals who own, either directly or indirectly, at least 1% of the shares of the company or are among the top ten shareholders of the company, (3) individuals who are employed by the shareholders with at least 5% of the shares, and (4) professionals who provide financial, legal, or consulting service to the company. For the aforementioned individuals, their parents, dependents, and relatives are prohibited from working as independent directors as well. The recent China Corporate Governance Survey, conducted by the CFA Hong Kong (2007), reveals that respondents view independent directors' expertise and independence as somewhat important to decision making, and both are believed to have improved over the years.

The development of institutional investors could be seen as another attempt by Chinese authorities to enhance corporate governance. Chinese authorities are known to support the idea that institutional investors should be given priority, as they will enhance corporate governance and stabilize the capital markets (Chen, 2000; Shen, 2000). However, the effectiveness of institutional shareholders in China's corporate governance system is not clear.

In China, the *General Principles of Corporate Governance for Listed Companies* was issued by the CSRC in 2002. It suggests that the listed firms form operating committees under the board of directors, such as an audit committee, a strategy committee, and a compensation committee. These committees mainly consist of independent directors and are expected to play a positive role in enhancing corporate governance. For instance, the board of directors may delegate "responsibility for the oversight of management's financial reporting" (p. 548) to audit committees, which in turn may monitor the internal and external audit functions to improve the credibility of financial reporting (Beasley and Salterio, 2001). The CSRC's intention to improve corporate governance is clear, but the establishment of committees is not mandatory; as a result, many firms have not yet formed operating committees.

The role of board of directors

The role of boards of directors has been extensively examined. Prior studies examine a variety of characteristics of a board of directors, such as size, knowledge base, composition/independence, and degree of diligence (e.g., Jensen, 1993; Vafeas, 1999). A recent study even examined the political connections of CEOs and board members in China (Fan et al., 2007). Extensive studies notwithstanding, results on the effect of boards of directors are quite mixed. The effect of board composition on firm performance, for instance, is mixed; some studies document a positive role of board independence on firm-level performance (e.g., Rosenstein and Wyatt, 1990), while others fail to find such an effect. The effect of board size is controversial as well. Larger boards may positively influence the knowledge base about earnings forecasts (Karamanou and Vafeas, 2005), while Jensen (1993) points out that a larger board size may not necessarily play a positive role because of the lack of flexibility and the increase in monitoring costs. Empirical evidence on the effectiveness of smaller boards is increasingly available, and prior research (e.g., Cheng et al., 2008; Yermack, 1996) shows that firms with smaller boards tend to outperform those with larger boards. Del Guercio et al. (2003) find that funds with smaller boards have a lower expense ratio, which is used in their study as a proxy of board effectiveness, and Cheng et al. (2008) show that smaller boards improve firm performance, especially before the passage of antitakeover laws.

Prior studies have also examined the role of boards of directors in fighting fraud. Beasley (1996), for example, finds that the board independence may help reduce the likelihood of fraudulent activities. This study is intended to offer insight on the role/activism of board of directors, along with the supervisory board under China's two-tier structure, after a fraud is revealed.

The role of supervisory boards

As previously mentioned, the role of supervisory boards in Chinese listed companies is different from

their counterparts in Japan and Germany (Jia et al., 2009). Supervisory boards in China do not appoint or evaluate managers; instead, they are supposed to monitor directors, the top management team, and financial affairs (Xi, 2006). It serves as one of the two monitoring organs in the Chinese governance mechanism, although its role is more like a trade union[1] in many companies in the early years (Xiao et al., 2004); independent directors are the second, and possibly the major, monitoring organ.

The 1993 *Corporate Law* clearly establishes the role of supervisory boards as a monitor, but unfortunately, their monitoring role has been controversial and some survey results even suggest that it is negligible (Xi, 2006; Xiao et al., 2004). Limited access to information and the lack of expertise and legal supports are often cited as the possible reasons why supervisory boards fail to monitor effectively (Jia et al., 2009; Xi, 2006). To change this situation, the most recent amendment of China's *Corporate Law* clearly specifies the monitoring scopes and functions of supervisory boards and their legal power, which became effective in 2006 (Jia et al., 2009; Xi, 2006). Therefore, it is reasonable to believe that supervisory boards' activism in monitoring and their reactions to revealed frauds, together with those of the board of directors, may play an important role in preventing firms from committing fraudulent activities repeatedly.

Studies examining corporate governance in China usually ignore the role of supervisory boards (e.g., Chen et al., 2006), but recent evidence on the two-tier board structure in China seems to suggest that supervisory boards have been improving their role. The first study that sheds light on this issue is an event study in which investors seem to value supervisory boards and their reports, which are required to be disclosed in annual reports (Dahya et al., 2003). Firth et al. (2007), Cho and Rui (2008), and Jia et al. (2009) provide further evidence that the size and meeting frequency of supervisory boards plays a significant role in influencing earnings informativeness, firm-level performance, and enforcement actions when a fraud is revealed, respectively.

Fraudulent activities of Chinese publicly listed companies

The Chinese stock market developed fairly fast but, unfortunately, the institutional environment is still believed to be very weak. During our sample period from 2001 to 2006, a total of 362 enforcement actions were imposed by the Chinese government (mainly by CSRC) and/or by the stock exchanges (Jia et al., 2009). Reasons include delay in the disclosure of annual/quarterly reports (Jia et al., 2009), ''the inflation of profits, creating fictitious transactions, false disclosures, and expropriating assets from minority shareholders'' (Chen et al., 2005, p. 456).

There are multiple motivations for firms to commit fraudulent activities. First, the legal environment is relatively weak in China. After establishing the two stock exchanges, laws and rules related to capital markets were crafted and passed, but details regarding fraud were not specified until recently. For instance, the *Securities Law* was first put forward in 1999 but not amended until 2005, and the *Rules of Information Disclosure for Listed Firms* was not issued to delineate detailed requirements until 2007. Furthermore, the punishment for firms engaging in fraudulent activities was not particularly severe. For example, according to the *Securities Law*, if a firm makes a false disclosure, the punishment consists of a formal warning and a small monetary fine between 300,000 and 600,000 CNY. Civic lawsuits are still rare due to the lack of relevant laws and a weak investor protection system (Jia et al., 2009).

Second, equity financing in China must meet financial requirements. More importantly, if a firm plans to do an initial public offering (IPO) or seasoned equity offering (SEO), the permission from the Public Offering Review Committee is mandatory, and it is based on a voting procedure. To get the permission, there are concrete requirements besides information disclosure. For instance, a firm must have positive profits in three consecutive fiscal years to be qualified for an IPO. To have an SEO, including both cash offering and rights offering, a firm must have a return on net assets higher than 10% for three consecutive fiscal years. To successfully raise capital in the two stock exchanges in China, some firms inflate their profits (Jia et al., 2009). On the other hand, the delisting process starts with a special treatment (ST) stage. If the return on net assets of a listed firm has been negative for two consecutive fiscal years, or if its net assets per share are negative in the most recent fiscal year, then the ticker symbol of this company will be prefixed ''ST''

to declare its higher risk. If the status does not get better within a year, then this company will be delisted, and therefore some firms choose to manipulate their financial figures to avoid being delisted (Jia et al., 2009).

Third, most Chinese listed firms have concentrated ownership, and therefore the conflict of interest between controlling and minority shareholders is a significant issue (Chen et al., 2006; Firth et al., 2005, 2007; Hou and Moore, 2010). To divert resources from listing companies to their parent companies, some firms may engage in fraud by violating disclosure rules (Jia et al., 2009). In addition, another possible reason of fraud is that the top management team of listed firms may manipulate stock prices using the pump-and-dump strategy, i.e., purchasing stocks while announcing false, bad news, and then selling these stocks while announcing a series of false, good news. These are typical examples of the principal–principal agency problems addressed in the literature (Claessens et al., 2000; Ward and Filatotchev, 2010), and in the Chinese context, the principal–principal agency issues mainly refer to the conflict of interest between majority and minority shareholders (La Porta et al., 2000; Lang and Young, 2002; Li et al., 2010).

Owing to the weak legal environment, fraud firms, whose fraudulent activities have been caught, in China are mainly punished by the CSRC and/or by the two stock exchanges, rather than by the courts (Jia et al., 2009). The CSRC's enforcement actions may include "an official warning, a monetary fine, the return of illegally raised proceeds, the confiscation of illegal income, the termination of share issuance, and/or the suspension or termination of securities trading qualifications" (Jia et al., 2009, p. 565). The two stock exchanges punish listed firms that violate their listing rules, and the punishments from the stock exchanges include warnings and condemnations, with the latter more serious since they are made public (Jia et al., 2009). Firms may be punished by both the stock exchanges and the CSRC for a fraudulent activity if the fraud is sufficiently severe. In the Chinese markets, some firms were caught for having engaged in more than one fraudulent activity and one of the main reasons for repeated fraudulent activities is the negligibility of the corresponding punishments. So far, no law has stressed more severe punishment for repeatedly fraudulent behaviors. Based on past experience, firms may anticipate that even if a fraud is detected, the punishment will not be serious.

Hypotheses

Prior research has significantly improved our understandings on how corporate governance plays a role in curbing fraudulent activities. Board independence and the separation of the positions of CEO and board chairs, for instance, are shown to be effective elements to reduce the likelihood of frauds (Beasley, 1996; Chen et al., 2006; Dechow et al., 1996). Extant studies primarily focus on the proactive role played by corporate governance, which is important, but the role of corporate governance, after an enforcement action is imposed, in preventing future frauds seems rarely covered. In other words, the dynamics between corporate governance and enforcement actions may be important as well, and may merit a careful examination. Persons (2006) sheds important light on the consequences of frauds by examining firms facing enforcement actions; for instance, CEOs of firms receiving enforcement actions are more likely to leave. Chen et al. (2006) find a positive association between board meeting frequency (BMF) and the likelihood of frauds; the association is contrary to what they predicted, but they suggest that it is likely that firms with enforcement actions may have to meet more frequently so as to respond to the sanction. It is plausible, but no empirical evidence is provided in terms of the role of these meetings in preventing future fraudulent activities, or the enforcement actions caused by them.

Our review of the corporate governance mechanism in Chinese publicly listed companies and the institutional environment leads us to believe that both boards may react to enforcement actions, but their responses could be different due to the different status and functions they have in the system. Furthermore, and probably more importantly, the effectiveness of their responses could be very different, in terms of preventing future frauds and/or enforcement actions.

Two reasons will be able to explain this. First, the board of directors is more powerful than supervisory boards (Jia et al., 2009; Xi, 2006; Xiao et al., 2004).

According to China's *Corporate Law*, the board of directors is in charge of making firm's strategic decisions, managing its daily operation, choosing the management team including the CEO, and setting up company management and compensation systems. Supervisory boards mainly monitor the behaviors of the management team, and if they detect any wrongdoing, they make suggestions to the shareholder meetings. Therefore, if the board of directors intends to take efforts to prevent fraudulent activities from happening again, they are sufficiently powerful to do so. Unfortunately, even though the role of supervisory boards is enhanced in the revised *Corporate Law*, it is still weak, and not powerful enough to take such effort. Second, since the board of directors is managing daily operations of its company, their members are more likely, than the supervisory board members, to be personally involved in the fraudulent activities causing enforcement actions. According to China's *Securities Law*, when fraudulent activities are caught and enforcement actions are imposed, both the companies and their related personnel may be punished. Considering their own risk, members on an active board of directors have much stronger incentive to reduce future fraudulent activities.

Hence, we predict that the board of directors may respond more actively, and their active responses may help reduce the likelihood of being punished due to fraudulent activities again. Supervisory boards, on the other hand, may react as well, since they are supposed to be a monitoring organ in this dual-board structure. Unfortunately, however, their reactions may not help prevent firms from being punished in the following periods. Our hypotheses are developed as follows:

H1: Hypothesis of Passivity

- *H1a*: Members on the board of directors meet more often after an enforcement action is imposed.
- *H1b*: Members on the supervisory board meet more often after an enforcement action is imposed.

H2: Hypothesis of Reactivity

- *H2a*: The fraud-driven board meetings reduce the likelihood of firms being punished due to frauds again.
- *H2b*: The fraud-driven supervisory board meetings do not reduce the likelihood of firms being punished due to frauds again.

A recent article, Jia et al. (2009), also examines the role of supervisory boards in China, and finds that among firms facing enforcement actions, the size of supervisory boards makes the monitoring role of supervisory boards even worse in the sense that firms with larger supervisory boards are more likely to receive more severe sanctions. They also find that firms facing more severe sanctions are likely to have more supervisory board meetings afterwards. This study is significantly different from Jia et al. (2009). First, while they focus on the type of fraud, categorized by the fraud sanctioned by the CSRC or that sanctioned by the stock exchanges, we examine the dynamic interactions between enforcement actions and the dual-board corporate governance mechanism. That is, we focus on the responses of the dual boards after the enforcement, and whether their responses are effective to curb future frauds. Second, the focal point in Jia et al. (2009) is the supervisory board, but we investigate both the board of directors and supervisory boards. Last, both studies find that supervisory boards have more meetings following the enforcement actions. However, we investigate further and document that when forced to react, the increased meetings from supervisory boards fail to prevent future frauds and enforcement actions caused by them, while boards of directors may play a positive role in curbing future fraudulent activities.

Research methodology

To test the passivity and reactivity hypotheses, we followed Jia et al. (2009) and formed a sample with firms which were punished for fraudulent activities from 2001 to 2006.[2] These 362 observations were collected from three major providers of Chinese stock market and corporate governance information, GuoTaiAn, SINOFIN, and WIND.

To highlight the passivity of the two boards in the corporate governance system, we also followed Jia et al. (2009) and built a matching sample consisting of firms without being penalized for frauds. Using

the same criteria adopted by Jia et al. (2009), we included 327 observations in this matching sample. Thus, the full sample has 689 observations. In addition, the three data sources also provide detailed accounting information and the information about corporate governance. These sets of information enable us to form a valid sample for testing the hypotheses proposed in "Institutional background, literature review, and hypothesis development" section.

We adopt two sets of dependent variables. The first set consists of the meeting frequencies of two boards, the BMF and the supervisory board meeting frequency (SBMF). This set is used to test the hypothesis of passivity, and taking into consideration the efficiency of two boards' reactions, we use variables in both years, the year in which a firm was punished and the year immediately after. To differentiate the variables in 1 year from the other, we use the subscript t to represent the year in which a firm was punished, and $t + 1$ to represent the year after. The second set of dependent variables is punish_{t+1}, a dummy indicating whether a firm was punished in Year $t + 1$, and this is used for testing the reactivity hypothesis.

As mentioned earlier, the fine resulting from an enforcement action may be a small amount to large corporations. However, its negative impacts on stock prices are expected to motivate both the board of directors and the supervisory board to respond actively and meet more; prompt reactions after the punishment would help firms minimize the negative impacts. Therefore, two sets of independent variables are used for corresponding dependent variables, respectively. While testing the hypothesis of passivity, we use two alternative measures of punishment: a dummy indicating whether a firm was punished in Year t (Punish_t), and a continuous variable measuring the number of punishments received by a firm in Year t (PTime_t). Fitted values of board and supervisory board meeting frequencies in two consecutive years, BMF_t, BMF_{t+1}, SBMF_t, and SBMF_{t+1}, are estimated from the models for testing the passivity hypotheses (H1a and H1b), respectively, and are used as the independent variables in the models for testing the reactivity hypotheses (H2a and H2b).

Four categories of control variables are adopted for testing the passivity and reactivity hypotheses, and all of them are in Year t, the year in which an enforcement action was imposed. To simplify the notation, we do not include the subscript t in these variables' names. The first category consists of a board and a supervisory board's characteristics, and variables in this category include the size of the board of directors (BSize) and that of the supervisory board (SBSize), the tenure of board chair (BTenure) and that of supervisory board chair (SBTenure), dummy variables indicating the turnover of board chair (BTurnover) and that of supervisory board chair (SBTurnover), and the age of the board chair (BAge) and that of the supervisory board chair (SBAge). IBSize is the number of independent board members, and CTurnover is a dummy indicating the turnover of the CEO. The size of the board of directors or supervisory boards (BSize and SBSize) may have effects on their meeting frequencies since larger boards tend to hold more meetings as they are less efficient to reach an agreement (Jensen, 1993). The tenure and the turnover of board/supervisory board chair may also have effects on the meeting frequency since chairs with shorter tenure or newly appointed chairs tend to hold more meetings. The age of board/supervisory board chair may affect meeting frequencies probably because older chairs are generally more bureaucratic than younger ones who might be more efficient and decisive.

The second category consists of variables measuring ownership characteristics, such as HHI[3] which measures ownership concentration, TSP which gives the ownership percentage of the largest shareholder, and two dummy variables indicating whether at least one of the ten largest shareholders was a foreigner (Foreign) and a government/government agency (Government), respectively. Ownership variables may have effects on meeting frequencies as well. In China, foreign owner-controlled firms are believed to operate more efficiently than government-controlled firms as they involve less bureaucracy. The concentration of shareholders (HHI and TSP) represents the diversion of shareholders' opinions. Firms with more concentrated ownership would have less diverse opinions among board/supervisory board members. Agreements are more likely to be reached with fewer meetings in these firms. In addition, the variable, Government, also serves as a proxy for listed companies' political connections. One of the unique features of the listed companies in the Chinese market is that most of them were privatized from SOEs (Firth et al., 2007;

Mengistae and Xu, 2004). During this privatization process, the government kept a portion of the shares so as to maintain the control on these listed companies, and these shares held by the government are non-tradable (Chen et al., 2006; Dahya et al., 2003). As a result, instead of considering managers' individual political connections adopted in prior studies (Fan et al., 2007; Francis et al., 2005; Li et al., 2008), it is more appropriate to focus on the listed companies' political connections to the government in general since enforcement actions are imposed by authorities affiliated to the government (Sun and Tong, 2003). Furthermore, both variables HHI and Government help characterize the principal–principal agency issues between majority and minority shareholders in the Chinese context.

Control variables in the third category are about a firm's financial status, which is normally managed or monitored by the board or the supervisory board. These variables include the accounting return measured by the return on assets (ROA), the annual market return (MR), the volatility of market returns measured by standard deviation (Sigma), and the firm size measured by the logarithm value of the book value of total assets (LnTA). The last category consists of other control variables, such as a dummy variable indicating whether the board chair also served as the CEO (Dual), the percentage of shares that are tradable in the secondary market (Tradable), the size of the auditor (Asize, ranging from 0 to 8), and a dummy indicating whether one of the Big Four accounting firms served as the auditor (Big4).[4]

To test the hypotheses of passivity, we use the following OLS regression models. Equations (1) and (2) are designed to detect whether meeting frequencies react to the punishment (measured by Punish_t or PTimes_t) in the current year.[5]

$$\text{BMF}_t = \alpha_1 + \beta_1 \cdot \text{Punish}_t \text{ or } \text{PTimes}_t + \gamma_1 \cdot \text{Control Variables}_t + \varepsilon_1 \quad (1)$$

$$\text{SBMF}_t = \text{A}_1 + \text{B}_1 \cdot \text{Punish}_t \text{ or } \text{PTimes}_t + \text{C}_1 \cdot \text{Control Variables}_t + \text{u}_1 \quad (2)$$

The fitted values from the first equation are denoted as $\text{BMF}_{\text{pred1}}$ and $\text{BMF}_{\text{pred2}}$, respectively, corresponding to those two different independent variables, Punish_t and PTimes_t. Similarly, the fitted values from the second equations are denoted as $\text{SBMF}_{\text{pred1}}$ and $\text{SBMF}_{\text{pred2}}$, respectively. It is also possible that the meeting frequency variables in the same year do not necessarily capture the two boards' reactions to enforcement actions completely, we consider the board and supervisory board meeting frequencies in the following year (i.e., year $t + 1$) and retest Eqs. (1) and (2). Equations (3) and (4) are used to detect whether meeting frequencies in the following year ($t + 1$) react to the punishment this year (t).

$$\text{BMF}_{t+1} = \alpha_2 + \beta_2 \cdot \text{Punish}_t \text{ or } \text{PTimes}_t + \gamma_2 \cdot \text{Control Variables}_{t+1} + \varepsilon_2 \quad (3)$$

$$\text{SBMF}_{t+1} = A_2 + B_2 \cdot \text{Punish}_t \text{ or PTimes}_t + C_2 \cdot \text{Control Variables}_{t+1} + u_2 \quad (4)$$

The fitted values from Eq. (3) are denoted as $\text{BMF}_{\text{pred3}}$ and $\text{BMF}_{\text{pred4}}$, respectively, and those from Eq. (4) are denoted as $\text{SBMF}_{\text{pred3}}$ and $\text{SBMF}_{\text{pred4}}$, respectively.

To test the hypotheses of reactivity using the Logit model, we estimate the following models using those fitted values of meeting frequencies obtained from Eq. (1)–(4). We also generate four interactive terms $\text{BMF}_{\text{pred1}} \times \text{MR}$, $\text{SBMF}_{\text{pred1}} \times \text{MR}$, $\text{BMF}_{\text{pred1}} \times \text{Sigma}$, and $\text{SBMF}_{\text{pred1}} \times \text{Sigma}$, as the independent variables to capture the potential interactive effects between firm performance/risk and meeting frequencies. Below are the models we have used to test Hypotheses H2a and H2b:

$$\text{Punish}_{t+1} = a_1 + b_1\left(\text{BMF}_{\text{pred1}}\right)_t + c_1\left(\text{SBMF}_{\text{pred1}}\right)_t + d_1 \text{ Control Variables}_t + e_1 \text{ MR} + \upsilon_1 \quad (5)$$

$$\text{Punish}_{t+1} = a_2 + b_2\left(\text{BMF}_{\text{pred1}}\right)_t + c_2\left(\text{SBMF}_{\text{pred1}}\right)_t + d_2 \text{ Control Variables}_t + e_2 \text{ MR} + f_2 \text{ sigma} + \upsilon_2 \quad (6)$$

$$\text{Punish}_{t+1} = a_3 + b_3\left(\text{BMF}_{\text{pred1}}\right)_t + c_3\left(\text{SBMF}_{\text{pred1}}\right)_t + d_3 \text{ Control Variables}_t + \text{e}_3 \text{ MR} + f_3 \text{ sigma} + g_3 \text{ BMF}_{\text{pred1}} \times \text{MR} + h_3 \text{ SBMF}_{\text{pred1}} \times \text{MR} + \upsilon_3 \quad (7)$$

$$\begin{aligned}\text{Punish}_{t+1} = {} & a_4 + b_4\left(\text{BMF}_{\text{pred1}}\right)_t + c_4\left(\text{SBMF}_{\text{pred1}}\right)_t \\ & + d_4\ \text{Control Variables}_t + e_4\ \text{MR} \\ & + f_4\ \text{sigma} + g_4\ \text{BMF}_{\text{pred1}} \times \text{MR} \\ & + h_4\ \text{SBMF}_{\text{pred1}} \times \text{MR} + j_4\ \text{BMF}_{\text{pred1}} \\ & \times \text{Sigma} + k_4\ \text{SBMF}_{\text{pred1}} \times \text{Sigma} + \upsilon_4 \end{aligned} \tag{8}$$

Note that the dependent variable Punish_{t+1} is a dummy indicating whether a firm punished in Year t was also punished in Year $t + 1$.

Empirical analysis

This section presents major empirical results from the univariate and multivariate tests. We start with the descriptive statistics, followed by the results of univariate tests, and then discuss those results based on Models (1)–(8). We then summarize results from the robustness tests so as to further support our empirical analysis.

The descriptive analysis and univariate tests

Panel A of Table I presents the summary statistics based on the cases that have valid values for all the variables of interest. Doing so gives us 412 observations in the full sample, 184 in the sub-sample consisting of fraudulent firms, and 228 in the matching sample. Considering the dummy variable, Punish, we have 362 observations of fraudulent firms being punished from year 2001 to year 2006. The maximum number of punishments that a firm received within a year was four. About one-fourth of these punished firms were punished again in the following year. For the comparison purpose, we also generate 327 matching firms with comparable firm characteristics that were not punished between year 2001 and year 2006.[6] Panel B of Table I shows the distribution of enforcement actions over this 6-year sample period; 67 in 2001, 40 in 2002, 45 in 2003, 60 in 2004, 69 in 2005, and 71 in 2006.

When comparing the means of independent and control variables using these two sub-samples consisting of fraudulent and matching firms, respectively, we find that boards of directors in fraudulent (punished) firms tend to meet more than those of matching firms. On average, fraudulent firms' boards meet 8.65 times a year whereas the matching firms' boards meet only 7.25 times a year. The difference is significant at the 1% significance level. Similarly, supervisory boards of fraudulent firms tend to meet more than those of non-fraudulent firms do. The average tenure of board chairs in the fraudulent firms (484 days) is significantly shorter than that of board chairs in the matching firms (571 days), but the average tenure of supervisory board chairs does not differ significantly between these two subsamples. The turnover of board chairs tends to happen more often in fraudulent firms (34.8%) than in matching firms (17.1%); so does the turnover of CEO between two subsamples (39.1 vs. 19.3%). However, the turnover of supervisory board chairs does not show this pattern. In addition, an average fraudulent firm also possesses some other characteristics such as having a younger board chair (BAge), a smaller percentage ownership by the largest shareholder (TSP), a more negative stock market returns (MR), a lower accounting returns (ROA), a larger total risk (Sigma), less government ownership (Government), and a larger percentage of tradable common shares.

As displayed in Table II, the univariate tests show that the variable, Punish, is related to six variables including the BMF, the tenure of supervisory board chair, the turnover of CEOs, firms' total risk, government ownership and return on assets. As an alternative measure of punishment, the variable PTimes is related to nine variables including the BMF, the tenure of the supervisory board chair, the turnover of the board chair, the turnover of the supervisory board chair, the turnover of CEO, the stock market return, return on assets, total risk and government ownership. The results based on multivariate models in the following sub-sections will further explore and reveal these relationships.

Testing the hypotheses of passivity

Table III summarizes the results from testing the hypotheses of passivity. To ensure the robustness, we use the board and supervisory board meetings in the year in which a firm is punished, as well as those in the year immediately after, as the dependent variables. Panel A presents the results based on the board

TABLE I

(A) Descriptive statistics and (B) distribution of enforcement actions over the period 2001–2006

Panel A: Descriptive statistics

	Full sample (N = 412)		Fraudulent firms (N = 184)		Matching firms (N = 228)		Compare mean t-value
	Mean	SD	Mean	SD	Mean	SD	
PTimes	0.544	0.68	1.217	0.46	–	–	–
Punish	0.447	0.50	–	–	–	–	–
PAgain	–	–	0.261	0.44	–	–	–
BMF	7.876	3.12	8.652	3.40	7.250	2.73	4.649***
SBMF	3.653	1.77	3.739	1.96	3.583	1.61	0.887
Dual	0.117	0.32	0.141	0.35	0.096	0.30	1.410
BSize	9.425	2.13	9.435	2.25	9.417	2.03	0.086
IBSize	2.667	1.24	2.609	1.27	2.715	1.21	−0.866
SBSize	4.187	1.36	4.152	1.25	4.215	1.45	−0.464
BTenure	532	353	484	357	571	346	−2.504**
SBTenure	565	368	523	364	599	368	−2.099**
BTurnover	0.250	0.43	0.348	0.48	0.171	0.38	4.197***
SBTurnover	0.408	0.49	0.435	0.50	0.386	0.49	1.001
CTurnover	0.282	0.45	0.391	0.49	0.193	0.40	4.549***
BAge	48.209	7.79	47.038	8.09	49.154	7.42	−2.763***
SBAge	47.942	8.10	47.429	8.15	48.355	8.05	−1.154
HHI	0.021	0.03	0.024	0.03	0.018	0.02	2.570**
TSP	39.359	16.41	35.901	15.12	42.149	16.90	−3.909***
Foreign	0.063	0.24	0.054	0.23	0.070	0.26	−0.656
MR	−0.415	0.93	−0.703	1.21	−0.184	0.53	−5.830***
Sigma	0.026	0.01	0.026	0.01	0.025	0.01	2.352**
LnTA	20.778	0.95	20.734	0.98	20.814	0.93	−0.843
Government	0.544	0.50	0.467	0.50	0.605	0.49	−2.813***
ROA	−0.098	0.51	−0.233	0.74	0.012	0.10	−4.959***
Tradable	0.419	0.13	0.429	0.12	0.411	0.13	1.385
ASize	0.425	1.27	0.310	1.14	0.518	1.36	−1.650
Big4	0.061	0.24	0.054	0.23	0.066	0.25	−0.483

TABLE I

continued

Panel B: Distribution of enforcement actions

Year	Number of enforcement actions
2001	67
2002	40
2003	45
2004	60
2005	69
2006	71

BMF and SBMF represent the meeting frequencies of two boards, the board meeting frequency and the supervisory board meeting frequency, respectively. Punish is a dummy indicating whether a firm was punished in 1 year. PTimes measures how many times the firm was punished within a year. BSize is the size of the board of directors. SBSize is the size of the supervisory board. BTenure is the tenure of board chair. SBTenure is the tenure of supervisory board chair. BTurnover and SBTurnover are dummy variables indicating the turnover of board chair and that of supervisory board chair, respectively. BAge is the age of the board chair. SBAge is the age of supervisory board chair. IBSize is the number of independent board members. CTurnover is a dummy indicating the turnover of the CEO. HHI measures ownership concentration, TSP is the ownership percentage of the largest shareholder. Foreign and Government are two dummy variables indicating whether at least one of the ten largest shareholders was a foreigner or a government/government agency. ROA is the accounting return measured by the return on assets, MR is the annual market return, Sigma is the volatility of market return measured by standard deviation. LnTA is the firm size measured by the logarithm value of the book value of total assets. Dual is the dummy variable indicating whether the board chair also served as the CEO. Tradable is the percentage of shares that are tradable in the secondary market. ASize is the size of the firm's auditor in that year. Big4 is a dummy indicating whether one of the Big Four accounting firms served as the auditor. $^{**}p < 0.01$, $^{***}p < 0.001$.

TABLE II

Univariate analysis

	Punish		PTimes	
	Correlation	Significance	Correlation	Significance
BMF	0.1392	0.004	0.1517	0.002
SBMF	−0.021	0.664	−0.0167	0.729
Dual	0.0526	0.276	0.0539	0.265
BSize	0.0196	0.686	−0.0155	0.749
IBSize	−0.0734	0.128	−0.0485	0.316
SBSize	0.017	0.725	0.0207	0.668
BTenure	0.0484	0.317	0.0705	0.144
SBTenure	−0.1108	0.021	−0.1338	0.005
BTurnover	0.0927	0.054	0.1049	0.029
SBTurnover	−0.0864	0.073	−0.1047	0.030
CTurnover	0.1266	0.009	0.1121	0.020
BAge	−0.0473	0.327	−0.0425	0.379
SBAge	0.0196	0.685	0.0549	0.255
HHI	0.043	0.373	0.0761	0.115
TSP	−0.0269	0.578	0.0000	1.000
Foreign	0.0183	0.704	−0.0112	0.816
MR	−0.0576	0.233	−0.1064	0.027
Sigma	0.0946	0.050	0.1134	0.019
LnTA	0.0842	0.081	0.0689	0.154
Government	−0.0985	0.041	−0.103	0.033
ROA	−0.1551	0.001	−0.2265	0.000
Tradable	0.0213	0.659	0.0552	0.253
ASize	−0.0605	0.210	0.011	0.820
Big4	−0.0005	0.992	0.0068	0.888

BMF and SBMF represent the meeting frequencies of two boards, the board meeting frequency and the supervisory board meeting frequency, respectively. Punish is a dummy indicating whether a firm was punished in 1 year. PTimes measures how many times the firm was punished within a year. BSize is the size of the board of directors. SBSize is the size of the supervisory board. BTenure is the tenure of board chair. SBTenure is the tenure of supervisory board chair. BTurnover and SBTurnover are dummy variables indicating the turnover of board chair and that of supervisory board chair, respectively. BAge is the age of the board chair. SBAge is the age of supervisory board chair. IBSize is the number of independent board members. CTurnover is a dummy indicating the turnover of the CEO. HHI measures ownership concentration, TSP is the ownership percentage of the largest shareholder. Foreign and Government are two dummy variables indicating whether at least one of the ten largest shareholders was a foreigner or a government/government agency. ROA is the accounting return measured by the return on assets, MR is the annual market return, Sigma is the volatility of market return measured by standard deviation. LnTA is the firm size measured by the logarithm value of the book value of total assets. Dual is the dummy variable indicating whether the board chair also served as the CEO. Tradable is the percentage of shares that are tradable in the secondary market. ASize is the size of the firm's auditor in that year. Big4 is a dummy indicating whether one of the Big Four accounting firms served as the auditor.

and supervisory board meetings which react to the punishment in the same year, and Panel B presents those based on the meetings in the year immediately after the enforcement.

Empirical findings indicate the behaviors of two boards after enforcement. It is intuitively understandable that firms punished for fraud hold more board and supervisory board meetings in the year of

TABLE III

Testing the hypotheses of passivity

Panel A: The dependent variables – $SBMF_t$ and BMF_t

Dep. Var.	$SBMF_t$				BMF_t			
	Estimate	*t*-value	Estimate	*t*-value	Estimate	*t*-value	Estimate	*t*-value
Punish	0.295*	2.17			0.767**	2.73		
Ptimes			0.238*	2.51			0.714***	3.40
SBSize	0.057	1.12	0.058	1.15				
SBTenure	−0.001***	−7.16	−0.001***	−7.18				
SBAge	−0.001	−0.08	−0.001	−0.15				
BSize					0.071	1.07	0.076	1.15
BTenure					−0.001**	−3.16	−0.001**	−3.19
BAge					0.014	0.77	0.014	0.79
HHI	2.170	0.58	2.118	0.57	7.340	0.97	6.668	0.88
TSP	0.003	0.38	0.003	0.37	0.006	0.46	0.006	0.42
Foreign	0.581*	2.13	0.581*	2.13	−0.599	−1.00	−0.547	−0.92
LnTA	0.071	0.90	0.077	0.97	0.506**	3.09	0.488**	2.98
Government	0.007	0.05	0.016	0.10	−0.145	−0.49	−0.128	−0.44
Tradable	0.870	1.07	0.815	1.01	2.984*	1.87	2.848*	1.79
MR					−0.521***	−3.36	−0.488***	−3.14
ROA					−0.601*	−2.17	−0.504	−1.80
Sigma					40.203	1.71	36.128	1.54
ASize					0.164	1.57	0.148	1.42
Big4					−0.435	−0.66	−0.433	−0.66
Constant	2.032	1.29	1.953	1.24	−6.527	−1.94	−6.014	−1.79
N	614		614		504		504	
F-statistic	7.34***		7.52***		5.72***		6.04***	
Adj. *R*-square	0.0938		0.0961		0.1235		0.1307	

Panel B: The dependent variables – $SBMF_{t+1}$ and BMF_{t+1}

Dep. Var.	$SBMF_{t+1}$				BMF_{t+1}			
	Estimate	*t*-value	Estimate	*t*-value	Estimate	*t*-value	Estimate	*t*-value
$Punish_t$	0.085	0.51			0.692*	2.35		
$Ptimes_t$			0.097	0.85			0.466*	2.35

TABLE III
continued

Panel B: The dependent variables – $SBMF_{t+1}$ and BMF_{t+1}

Dep. Var.	$SBMF_{t+1}$				BMF_{t+1}			
	Estimate	*t*-value	Estimate	*t*-value	Estimate	*t*-value	Estimate	*t*-value
$SBSize_{t+1}$	0.087	1.45	0.089	1.48				
$SBTenure_{t+1}$	−0.001★★★	−6.36	−0.001★★★	−6.38				
$SBAge_{t+1}$	0.016★	2.47	0.016★	2.47				
$BSize_{t+1}$					0.020	0.27	0.028	0.37
$BTenure_{t+1}$					−0.002★★★	−5.26	−0.002★★★	−5.38
$BAge_{t+1}$					−0.011	−0.63	−0.011	−0.6
HHI_{t+1}	4.444	1.33	4.276	1.28	3.744	0.64	3.587	0.61
$Foreign_{t+1}$	0.244	0.79	0.238	0.77	−0.395	−0.74	−0.445	−0.83
$LnTA_{t+1}$	0.163★	1.96	0.168★	2.01	0.530★★★	3.24	0.543★★★	3.33
$Government_{t+1}$	−0.156	−0.89	−0.147	−0.83	−0.757★	−2.55	−0.746★	−2.5
$Tradable_{t+1}$	0.737	1.06	0.711	1.03	0.519	0.47	0.565	0.51
MR_{t+1}					0.616★	2.03	0.559	1.86
ROA_{t+1}					−0.085	−0.17	−0.022	−0.04
$Sigma_{t+1}$					−8.583	−0.34	−7.094	−0.28
Constant	−0.489	−0.30	−0.611	−0.37	−1.904	−0.53	−2.277	−0.63
N	398		398		365		365	
F-statistic	6.63★★★		6.69★★★		5.75★★★		5.75★★★	
Adj. *R*-square	0.1133		0.1143		0.1353		0.1354	

BMF and SBMF represent the meeting frequencies of two boards, the board meeting frequency and the supervisory board meeting frequency, respectively. Punish is a dummy indicating whether a firm was punished in 1 year. PTimes measures how many times the firm was punished within a year. BSize is the size of the board of directors. SBSize is the size of the supervisory board. BTenure is the tenure of board chair. SBTenure is the tenure of supervisory board chair. BTurnover and SBTurnover are dummy variables indicating the turnover of board chair and that of supervisory board chair, respectively. BAge is the age of the board chair. SBAge is the age of supervisory board chair. IBSize is the number of independent board members. CTurnover is a dummy indicating the turnover of the CEO. HHI measures ownership concentration, TSP is the ownership percentage of the largest shareholder. Foreign and Government are two dummy variables indicating whether at least one of the ten largest shareholders was a foreigner or a government/government agency. ROA is the accounting return measured by the return on assets, MR is the annual market return, Sigma is the volatility of market return measured by standard deviation. LnTA is the firm size measured by the logarithm value of the book value of total assets. Dual is the dummy variable indicating whether the board chair also served as the CEO. Tradable is the percentage of shares that are tradable in the secondary market. ASize is the size of the firm's auditor in that year. Big4 is a dummy indicating whether one of the Big Four accounting firms served as the auditor. The subscript *t* is used to represent the year in which a firm was punished, and $t + 1$ represents the year after.

★$p < 0.05$, ★★$p < 0.01$, ★★★$p < 0.001$.

being punished. Furthermore, a firm's boards meet even more if it is punished more than once in a year. In the year after, however, meeting patterns are changed; the board of directors of a firm which was punished in the year before tends to hold more meetings, but its supervisory board does not. These results are consistent with the different natures of the two boards; a board of directors has to deal with daily operations actively, while a supervisory board only does so passively. In other words, H1a is not rejected, but H1b is partially rejected.

Some of the control variables also affect the meeting frequencies significantly. For instance, the tenures of board chairs and supervisory board chairs tend to lower board meeting frequencies and supervisory board frequencies, respectively, both in the year a firm is punished and the year immediately after. In addition, the existence of foreign investors helps increase the supervisory board meeting frequencies in the year of punishment, and this can mainly be interpreted as the monitoring effects. Firm size is positively related to the BMF in both years since a larger firm tends to have more issues to deal with in their daily operations. The government ownership, which also serves as a proxy for political connection, tends to reduce the BMF in the year immediately after a firm was punished because of its fraudulent activities, but not in the year in which it was punished. In the meantime, we also find that it does not affect the supervisory board meeting frequencies.

To further investigate the impacts of enforcement actions on two boards' behaviors, we have also done the following two sets of analysis.[7] First, we constructed the Harmonization Index to further measure board activism based on the content of meetings. The Harmonization Index is defined by the percentage of directors who voted YES to the decision items in the year in which enforcement actions were imposed. Owing to the missing information about details of the meetings, only 196 observations of the Harmonization Index were hand collected over the sample period, 98 of which were from fraudulent firms and the other 98 were from matching firms. A firm in the full sample had 73.07% of the board members who voted YES; a fraudulent firm and a matching firm had 70.82 and 75.32% of board members who voted YES, respectively. Furthermore, the Harmonization Index and the dummy variable Punish are negatively correlated; their correlation is −0.2637, which is significant at the 10% level. Since lower Harmonization Index means more active board, these findings support our empirical results about the reactions of board of directors to the enforcement actions imposed, and consequently, support the Hypothesis of Passivity. Second, we also collected the information about the amount of fine and construct a variable named Fine; the average amount of fine was CNY99,009 over the sample period. Using Fine to replace the independent variables Punish and PTimes so as to re-run the tests whose results are presented in Table III, we find that the amount of fine does not impact the BMF or the SBMF significantly. These findings support our discussion about the minimal influences of the fine itself, and what the companies really care about is the impact of enforcement actions on their stock prices.

Testing the hypotheses of reactivity

Adopting Models (5)–(8), we test the reactivity hypotheses proposed in ''Institutional background, literature review, and hypothesis development'' section, and present the results in Table IV. Without considering the interactive effects between enforcement-driven meeting frequencies of the two boards and firm's profitability, we find that the reactivity of the two boards does not lower the chance of punished firms to be punished again in the year immediately after. The results are presented in the columns based on Models (5) and (6). As addressed in the literature (e.g., Vafeas, 1999), however, firms with lower profitability tend to hold more board meetings. Furthermore, our empirical tests show that lower profitability may result in a higher chance of committing fraud; this association is also tested by prior studies (e.g., Beasley, 1996; Chen et al., 2006), but they fail to find its significance. Thus, it is critical to take into consideration the interactions between meeting frequencies of the two boards driven by the enforcements and the market returns.

Results based on Models (7) and (8) indicate that while punishment-driven meetings do not affect the likelihood of getting punished in the year after and firms with low profitability tend to be punished, the interaction between board meeting frequencies and market returns ($BMF_{pred1} \times MR$) is positively

TABLE IV

Testing the hypotheses of reactivity: dependent variable – $Punish_{t+1}$

	Model 5		Model 6		Model 7		Model 8		Robustness tests (Model 7)			
	Estimate	*Z*-value	Estimate	*Z*-value	Estimate	*Z*-value	Estimate	*Z*-value	Estimate	*Z*-value	Estimate	*Z*-value
BMF_{pred1}	−0.063	−0.25	−0.322	−1.06	0.03	0.11	−0.092	−0.09				
$SBMF_{pred1}$	0.071	0.20	0.161	0.44	0.123	0.30	−0.496	−0.28				
BMF_{pred2}									0.123	0.53	0.220	1.16
$SBMF_{pred2}$									0.078	0.19	−0.085	−0.22
Dual	0.025	0.05	−0.002	0.00	0.002	0.00	−0.043	−0.08	−0.008	−0.02	0.021	0.04
HHI	4.166	0.56	5.241	0.69	3.016	0.39	4.186	0.53	2.688	0.35	3.922	0.50
Government	−0.079	−0.21	0.000	0.00	−0.048	−0.12	0.024	0.06	−0.018	−0.05	−0.029	−0.07
LnTA	0.062	0.31	0.213	0.93	0.216	0.97	0.313	1.28	0.130	0.62	0.099	0.44
Tradable	0.267	0.15	0.814	0.43	−0.1	−0.05	0.272	0.14	−0.292	−0.16	−0.189	−0.11
MR	−0.623⋆	−2.03	−0.634⋆	−2.17	−4.606⋆⋆	−3.08	−4.445⋆⋆	−2.77	−2.989⋆⋆	−2.64	−3.817⋆⋆	−2.83
Sigma			70.094	1.84			−41.101	−0.12				
$BMF_{pred1} \times MR$					0.267⋆⋆	3.22	0.243⋆⋆	2.74				
$SBMF_{pred1} \times MR$					0.135	0.69	0.166	0.70				
$BMF_{pred2} \times MR$									0.210⋆⋆	2.78	0.220⋆⋆	2.78
$SBMF_{pred2} \times MR$									−0.068	−0.46	0.116	0.56
$BMF_{pred1} \times Sigma$							−1.848	−0.05				
$SBMF_{pred1} \times Sigma$							26.124	0.39				
Constant	−2.680	−0.69	−6.129	−1.36	−7.350	−1.65	−7.269	−0.73	−5.903	−1.39	−5.564	−1.27
N	187		187		187		187		187		187	
LR χ^2	12.72		16.21		23.63⋆⋆		25.11⋆		20.64⋆		21.76⋆	
Pseudo R^2	0.0591		0.0754		0.1099		0.1167		0.0959		0.1012	

BMF and SBMF represent the meeting frequencies of two boards, the board meeting frequency and the supervisory board meeting frequency, respectively. Punish is a dummy indicating whether a firm was punished in 1 year. BSize is the size of the board of directors. SBSize is the size of the supervisory board. BTenure is the tenure of board chair. SBTenure is the tenure of supervisory board chair. BTurnover and SBTurnover are dummy variables indicating the turnover of board chair and that of supervisory board chair, respectively. BAge is the age of the board chair. SBAge is the age of supervisory board chair. IBSize is the number of independent board members. CTurnover is a dummy indicating the turnover of the CEO. HHI measures ownership concentration, TSP is the ownership percentage of the largest shareholder. Foreign and Government are two dummy variables indicating whether at least one of the ten largest shareholders was a foreigner or a government/government agency. ROA is the accounting return measured by the return on assets, MR is the annual market return, Sigma is the volatility of market return measured by standard deviation. LnTA is the firm size measured by the logarithm value of the book value of total assets. Dual is the dummy variable indicating whether the board chair also served as the CEO. Tradable is the percentage of shares that are tradable in the secondary market. ASize is the size of the firm's auditor in that year. Big4 is a dummy indicating whether one of the Big Four accounting firms served as the auditor. The subscript t is used to represent the year in which a firm was punished, and $t + 1$ represents the year after. Fitted values of board and supervisory board meeting frequencies, BMF_{pred1}, BMF_{pred2}, $SBMF_{pred1}$, and $SBMF_{pred2}$, are estimated from the models for testing the hypothesis of passivity, respectively, and are used as the independent variables in the models for testing the hypothesis of reactivity.

⋆$p < 0.05$, ⋆⋆$p < 0.01$, ⋆⋆⋆$p < 0.001$.

related to the chance of being punished. The result shows that punishment-driven board meeting frequencies help lower the probability of being punished again for firms having negative returns only. To further show the robustness of these results, we use alternative independent variables, BMF_{pred2}, $SBMF_{pred2}$, $BMF_{pred2} \times MR$, and $SBMF_{pred2} \times MR$, respectively, to retest Model (7). No qualitative change has been found, and results are also presented in Table IV. In short, Hypothesis 2a is partially rejected, and Hypothesis 2b is rejected.

To test the robustness of these empirical findings, we have also conducted further tests as follows. First, we use industry-adjusted return on assets (IND-ROA) to replace ROA and repeat all the above tests. Second, since the values of dependent variables BMF and SBMF are bounded integers, we implement ordered logit models, in addition to the OLS regressions, and re-estimate Models (1)–(4). Third, we have also adopted the propensity score matching method with respect to both $Punish_t$ and $Punish_{t+1}$ to confirm the empirical results we have obtained. Fourth, we have also included additional corporate governance variables, such as the existence of audit committee, in the analysis. Constructing a variable named AC, which is a dummy variable with a value of one if a listed company has an audit committee and zero if not, we find that 35.12% of the firms had audit committees over the sample period. Among the fraudulent firms, 34.81% of them had audit committees, and 35.47% of the matching firms had; they are insignificantly different from each other. The correlation between AC and the dummy variable, Punish, is 0.0823, which is insignificant. We have also included the variable AC into the regressions for robustness tests, and find that the existence of audit committee does not impact the reactions of listed companies to the enforcement actions. Our findings support the conclusions made by Lin et al. (2008) about the ineffectiveness of audit committees in the listed companies in China. No qualitative change from these robustness tests has been found, and therefore, our empirical findings are robust.[8]

Some further discussion

The results from Models (1)–(8) for testing the hypotheses of passivity and reactivity have shown that the two boards in Chinese publicly listed companies behave differently. First, after a punishment is enforced, the reactions of boards of directors last longer than those of supervisory boards. Second, the effectiveness of boards' reactions is more significant than that of supervisory boards'. Thus, do board chairs, supervisory board chairs, and CEOs take the same responsibilities? To answer this question, we examine the effects of enforcements on their turnovers in the year immediately after firms are punished. To do so, we adopt Logit models, and use dummy variables measuring their turnovers as dependent variables. Furthermore, we use both the full sample and the subsample of firms in which the variable Dual has a value of zero, suggesting that the board chair and the CEO are two individuals. Empirical results are presented in Table V, and indicate that punishments increase the probabilities of the turnovers of board chairs and CEOs, but do not increase that of the turnovers of supervisory board chairs.

Conclusions and future research

This article highlights two aspects of the two boards' behaviors, passivity and reactivity of board of directors and those of supervisory boards, in Chinese publicly listed companies after they are punished for fraudulent activities enforced by CSRC or the stock exchanges. We also dynamically test these two aspects by considering board and supervisory board meeting frequencies in the year of being punished and in the year immediately after that, while controlling for other factors documented in the literature on corporate governance and fraud.

In the tests of passivity, we find that both the board of directors and the supervisory board tend to meet more in the year of punishment, but in the subsequent year, the board still meets more whereas the supervisory board does not, meaning that the supervisory board usually takes a passive strategy. While testing the hypotheses of reactivity, we find that in firms with negative market returns, if their boards of directors meet more frequently after the punishments, the likelihood of these firms being punished again in the subsequent year is lower, which means the board of directors tends to take effective reactive strategies. However, we do not find similar reactivity in the supervisory board.

TABLE V

Effects of punishments on turnovers of supervisory board chairs, board chairs, and CEO

Dep. Var.	$SBTurnover_{t+1}$		$BTurnover_{t+1}$				$CTurnover_{t+1}$			
	Full sample		Full sample		Dual = 0		Full sample		Dual = 0	
	Estimate	*Z*-value	Estimate	*Z*-value	Estimate	*Z*-value	Estimate	*Z*-value	Estimate	*Z*-value
Punish	0.604	1.87	0.841*	2.55	0.760*	2.26	0.832*	2.54	0.893*	2.49
BMF	0.017	0.32	−0.040	−0.74	−0.030	−0.55	−0.043	−0.78	−0.062	−1.02
SBMF	−0.055	−0.61	−0.084	−0.95	−0.133	−1.42	−0.064	−0.70	−0.054	−0.53
BSize	0.005	0.05	0.052	0.53	0.066	0.67	−0.014	−0.14	−0.006	−0.05
SBSize	−0.097	−0.80	0.193	1.66	0.192	1.59	0.049	0.42	0.038	0.30
IBSize	0.185	0.87	−0.343	−1.59	−0.325	−1.50	−0.293	−1.36	−0.265	−1.18
BTenure	0.002***	3.35	0.000	−0.48	0.000	−0.35	0.000	0.90	0.000	0.79
SBTenure	0.002***	4.00	0.000	0.28	0.000	0.18	0.000	−0.20	0.000	0.08
HHI	7.601	0.90	3.093	0.39	0.765	0.09	4.012	0.53	0.358	0.04
TSP	−0.008	−0.53	−0.022	−1.43	−0.023	−1.46	−0.008	−0.50	−0.015	−0.93
Foreign	0.814	1.21	−0.566	−0.74	−0.563	−0.72	1.747**	2.87	2.572***	3.52
MR	0.057	0.34	−0.239	−1.28	−0.267	−1.36	−0.327	−1.79	−0.365	−1.81
Sigma	−21.953	−0.75	31.988	1.07	32.068	1.03	28.284	0.94	30.085	0.91
LnTA	0.020	0.11	0.153	0.79	0.139	0.69	0.132	0.70	0.191	0.93
Government	0.349	1.09	0.115	0.35	0.091	0.27	0.269	0.82	0.394	1.09
ROA	−0.077	−0.29	−0.268	−1.09	−0.270	−1.09	0.300	0.79	0.310	0.77
BAge	−0.023	−1.14	0.006	0.29	0.009	0.43	−0.026	−1.21	−0.034	−1.53
SBAge	−0.008	−0.41	0.026	1.31	0.028	1.40	0.012	0.61	−0.002	−0.08
Tradable	0.094	0.05	−2.016	−1.10	−1.727	−0.93	−2.402	−1.29	−3.328	−1.65
ASize	−0.028	−0.25	0.179	1.66	0.179	1.60	0.138	1.31	0.096	0.81
Big4	0.624	1.00	0.297	0.45	0.455	0.67	−0.820	−1.17	−1.631	−1.88
Dual	−1.167*	−2.27	−1.505*	−2.33			−0.249	−0.53		
Constant	−1.565	−0.40	−5.382	−1.33	−5.457	−1.32	−2.568	−0.65	−2.175	−0.52

TABLE V
continued

Dep. Var.	$SBTurnover_{t+1}$		$BTurnover_{t+1}$				$CTurnover_{t+1}$			
	Full sample		Full sample		Dual = 0		Full sample		Dual = 0	
	Estimate	*Z*-value	Estimate	*Z*-value	Estimate	*Z*-value	Estimate	*Z*-value	Estimate	*Z*-value
N	298		307		271		307		271	
LR χ^2	90.41		39.53**		31.33		31.42		37.54**	
Pseudo R^2	0.2286		0.1166		0.1005		0.0940		0.1267	

sBMF and SBMF represent the meeting frequencies of two boards, the board meeting frequency and the supervisory board meeting frequency, respectively. Punish is a dummy indicating whether a firm was punished in 1 year. BSize is the size of the board of directors. SBSize is the size of the supervisory board. BTenure is the tenure of board chair. SBTenure is the tenure of supervisory board chair. BTurnover and SBTurnover are dummy variables indicating the turnover of board chair and that of supervisory board chair, respectively. BAge is the age of the board chair. SBAge is the age of supervisory board chair. IBSize is the number of independent board members. CTurnover is a dummy indicating the turnover of the CEO. HHI measures ownership concentration, TSP is the ownership percentage of the largest shareholder. Foreign and Government are two dummy variables indicating whether at least one of the ten largest shareholders was a foreigner or a government/government agency. ROA is the accounting return measured by the return on assets, MR is the annual market return, Sigma is the volatility of market return measured by standard deviation. LnTA is the firm size measured by the logarithm value of the book value of total assets. Dual is the dummy variable indicating whether the board chair also served as the CEO. Tradable is the percentage of shares that are tradable in the secondary market. ASize is the size of the firm's auditor in that year. Big4 is a dummy indicating whether one of the Big Four accounting firms served as the auditor.

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

One of the prior studies in this stream of the literature on the relationship between corporate governance mechanisms and fraudulent activities of Chinese listed companies is Jia et al. (2009), but the research focus of the current study is fundamentally different from theirs. Jia et al. (2009) emphasize the monitoring effects of supervisory boards, one of the two boards in the dual-board system of Chinese listed companies, on the severity of the enforcement actions when frauds are revealed. However, this study with the post-fraud analysis focuses on how the dual-board corporate governance mechanism, consisting of the board of directors and supervisory boards, reacts to the enforcement actions, and also on whether their reactions help to prevent Chinese listed companies from committing future frauds. Further studies may be developed to investigate the relationship between fraudulent activities and changes in board composition, especially the specific committees under the board of directors; this issue has been rarely touched in extant studies examining corporate governance and fraud. Alternatively, future studies may also further explore the market reactions to CEO turnovers, the board chair turnovers, and/or supervisory board chair turnovers resulting from fraud-driven punishments.

Notes

[1] Unlike their counterparts in developed economies where trade unions represent and protect the interest of employees, unions in most, if not all, Chinese companies function very differently. Union officials are usually highly impotent, and many of them are or were officials of the local Communist Party. It is rare that unions in Chinese companies play a role in collective bargaining.

[2] As pointed out by Chen et al. (2006), it is extremely difficult to uncover all the actual fraudulent activities. Following the approach adopted by previous studies, such as Dechow et al. (1996), Firth et al. (2005), and Jia et al. (2009), we use punishment imposed by authorities as a proxy for fraudulent activities. Throughout the article, we still use the term fraudulent activities to avoid potential confusion.

[3] HHI refers to the Herfindahl index based on the ownership held by the second largest to the tenth largest shareholders (Chen et al., 2006; Jia et al., 2009).

[4] It is worth mentioning that the variables Asize and Big4 are not overlapping. The variable Asize is to capture the size effect of auditors, while the variable Big4 refers to their international reputation. Both variables have been adopted by prior studies in the accounting literature. In China, the Big4 accounting firms are not the largest auditors (DeFond et al., 1999). In addition, robustness tests were conducted using each of the two variables, but no qualitative change was found.

[5] We conducted the compare-mean t-tests among board meeting frequencies, as well as supervisory board meeting frequencies, in the year in which enforcement actions were imposed (Year t), the year before it (Year $t-1$), and the year after it (Year $t+1$). Results show that the average board meeting frequency in Year t was significantly higher than that in Year $t-1$ (t value = 2.6996), and was also significantly higher than that in Year $t+1$ (t value = −2.9482). However, the average board meeting frequencies between Year $t-1$ and Year $t+1$ was insignificantly different from each other. In addition, the average supervisory board meeting frequencies were not significantly different between Year $t-1$ and Year t, between Year t and Year $t+1$, or between Year $t-1$ and Year $t+1$. These findings show the enforcement action-driven board meeting frequencies in the short run, and this effect tends to disappear once problems have been dealt with. The above tests confirm the validity of using dependent variables, such as board meeting frequencies and supervisory board meeting frequencies, in the year in which enforcement actions were imposed.

[6] Instead of using firm size and industry effects as Jia et al. (2009) do, we use the following seven matching principles to find the closest matching firms to ensure the robustness of the empirical results. In each year between 2001 and 2006 and in the same industry, for each punished firm, we find firms (i) whose market value of equity was within the range of ±5% of the punished firm's market value; (ii) whose book value of total assets was within the range of ±5% of the punished firm's book value of assets; (iii) that had a ROA within the range of ±5% of that of the punished firm; (iv) that had a ROE within the range of ±5% of that of the punished firm; (v) that had a stock return within the range of ±5% of that of the punished firm; and (vi) that had a Tobin's Q within the range of ±5% of that of the punished firm. To make the findings of this study comparable to those of Jia et al. (2009), we also consider the information about the matching sample used in their study.

[7] The authors thank two anonymous referees and the discussant, Professor Chris Mallin, for suggesting us to consider these additional tests. To save space, the empirical results are not presented here, but they are available upon request.

[8] The authors would like to thank two anonymous referees and the discussant Professor Chris Mallin for suggesting us to do these robustness tests.

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Chinese Management Buyouts and Board Transformation

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ABSTRACT. We assess the extent to which Chinese MBOs of listed corporations enable a balance to be achieved between facilitating growth and supporting the interests of minority shareholders other than the buyout organization. Using novel, hand-collected data from 19 MBOs of listed corporations in China, a matched sample of 19 non-MBOs and the population of listed corporations, we examine the extent to which boards of directors are changed to bring in executive and outside directors with the skills to grow as well as restructure a business. We also examine the extent to which outside directors become involved in actions to develop the business rather than actions related to fostering the interests of all shareholders. We find in fact 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.

KEY WORDS: management buyouts, China, board, governance, listed companies

Introduction

Management buyouts (MBOs) involving the acquisition of firms by incumbent managers 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 (Strömberg, 2008; 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 Western economies generally indicates that 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; Kaplan and Stromberg, 2009; Wood and Wright, 2010). Yet, MBOs may be undertaken to advantage particular groups of stakeholders, notably managers and private equity backers, at the expense of others (Bruner and Paine, 1988; Houston and Howe, 1987; Harris and Brown, 1990; Jones and Hunt, 1991; Lee, 1992; Lowenstein, 1985; TSC, 2007).

For emerging economies, and especially those transitioning from central planning, MBOs raise serious and controversial issues, especially in contexts where the legal and regulatory framework is often weak. The latter enables management to benefit from short-term income redistribution by acquiring undervalued assets (Filatotchev et al., 1994). 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 (Djankov et al., 2008).

Indeed, MBOs became a very controversial issue in China in 2004 when Hong Kong-based professor

of corporate governance Larry Lang condemned the MBI (management buy-in) of Kelon, a township and village enterprise, i.e., an enterprise owned at the local government level, listed both in Hong Kong and Shenzhen. As a result, ''MBO'' became a derogatory term in China. In 2004 the Ministry of Finance (MOF) also stopped approving state-owned enterprise (SOE) share transfers to buyout management. Finally, in 2005, the State-owned Assets Supervision and Administration Committee (SASAC), the new established authority and the ultimate owner of state-owned assets, prohibited MBOs of listed SOEs.

There are, however, major countervailing arguments to these claims. First, MBOs may be necessary to ensure that restructuring occurs in order to avoid firm failure. Indeed, studies of listed corporations in China have identified the importance of ''propping up'' as an alternative to tunneling (Cheung et al., 2006). 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).

In the absence of the pressure of debt and the role of private equity firms, boards assume an important place in MBOs in China in achieving this balance. Yet the role of boards in this context has been neglected. 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.

This article unfolds as follows. The following section provides a brief overview of the context in which Chinese MBOs occur. We then review the literature on the role and place of boards in MBOs. ''Data and sample'' section explains our data sources, while ''Results: evidence on the role of boards in Chinese MBOs'' section presents our findings under headings corresponding to the three research questions outlined above. The final section discussions our findings.

Context of Chinese MBOs

The Chinese government, has adopted a gradualist reform strategy (Liu and Sun, 2005), part of which involves *retreating* from state control of small and medium-sized enterprises that operate in highly competitive markets.[1] In the early stages of market reforms, the entrepreneurs founding emerging enterprises invested their own money (or borrowed money from the local government)[2] and typically possessed the key managerial or technical capabilities,[3] but they were not the legal owners. When these firms were listed on the stock market, their largest shareholder was local (town-village or urban-street) or even the central government. These firms were said to be ''wearing the red hat'', which provided both protection from political harassment and favorable access to scarce resources including natural monopoly resources, land, ''soft'' loans from state-owned banks, independent export–import rights and foreign exchange quotas (Sun et al., 2010). Some large SOEs were floated on the stock market with

the state typically maintaining controlling shares, the majority of shares, including management's shares, not being freely tradable (Walter and Howie, 2003).[4]

Incumbent management with good market-oriented capabilities played a key role in saving some non-strategic SOEs from bankruptcy, turning them around and making them relatively competitive. However, management did not receive shares as compensation, and their salaries and bonuses were only at moderate levels.[5]

By the end of the 1990s, these companies were frustrated by a lack of incentives, organizational inefficiency, declines in profit margins, technical upgrading and interference by bureaucratic government decision makings in daily operations.[6] With the progress of market reforms, these organizations had typically reached a critical point where they had to decide between innovation versus non-adaptation and eventual dissolution. Windows of opportunity can emerge where a firm finds new growth and renewal opportunities facilitated by a new ownership structure, such as a buyout (Wright et al., 2000).

Because of the relationships with government, at various levels,[7] the success or failure of buyout attempts is heavily influenced by a bargaining or alliance process between entrepreneurs and politicians (Sun et al., 2010). MBO targets were typically purchased at a price based on net assets per share or even at a discount to this, and far below the price of tradable shares. Typically management did not take the companies private as in Western buyouts but bought less than 30%[8] of the total equity through a newly established holding company wholly owned by management or with employees. Management typically paid only around 10% of the total price on deal completion, with the remainder paid in installments. Management obtained finance mainly from personal networks. Banks were strictly forbidden from providing loans for buyouts until November 2008. However, in some township and village enterprise buyouts, management obtained finance from local credit unions or 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, categorized by scholars as financial, governance, and operational engineering changes (Cumming et al., 2007; Kaplan and Stromberg 2009).

The first of these, financial leverage, creates pressure on managers not to waste money on unprofitable projects. The pressure of meeting debt payments 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 elements. First, private equity firms typically give the management of portfolio companies a large equity upside through stock and options. Also they require management to make a meaningful investment in the company. 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 (Kaplan and Stromberg 2009). But success in private equity transactions is also associated with operational improvements including the introduction of new products and other routine innovations (Gottschalg, 2007; Meuleman et al., 2009; Wright et al., 1992; Zahra, 1995).

Therefore, 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 therefore reflect the strategic challenges and contingencies firms face at different phases in their life-cycle (Zahra et al., 2010). 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 private equity backed buyouts that were formerly listed corporations in the UK become smaller with fewer outside directors (Cornelli and Karakas, 2008). 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).

Investors in Western buyouts tend to be more active than in listed corporations, one manifestation of which is more frequent board meetings (Acharya and Kehoe, 2008). 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 addition to hiring executives with financial engineering and monitoring skills, private equity firms in Western countries 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. Acharya et al. (2009) provide evidence from the UK that boards in private equity backed buy-outs play an active role in leading strategy formulation to create value, involving both assisting and challenging management, while boards in publicly listed companies play more of a scrutinizing, follower role. Directors from private equity firms also do not hesitate to replace poorly performing management.

In the MBOs of China's listed companies there is no direct pressure of financial leverage, or governance engineering by PE firms since these factors play little part in these deals.[9] Thus, the board of directors assumes a key role in these companies. This role, however, faces distinctive challenges in the context of the 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.

However, there is also a 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). 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. We summarize our variables and expectations in relation to our research questions in Table I.

Data and sample

Sample selection

To examine the nature and role of boards in Chinese MBOs of listed corporations, we focus on a sample of 19 firms. We identify the sample of companies as follows:

TABLE I

Summary of research questions, variables, expectations and findings

Research questions	Variables	Western MBO expectations	Chinese MBO expectations	Findings
Q1: General board characteristics	Size	Size declines to smaller than listed corporations	Size declines	Size declines but not significantly different from listed corporations
	No. Executives	Relatively more important	Relatively more important	Relatively more important
	Duality	Less duality following Western buyouts	More duality	No significant differences from other companies
Q2: Independent director characteristics	No. & proportion	Decline with increase of PE directors	Expected increase due to regulatory change	Increases more than in matched companies
	Characteristics	Increase in directors with monitoring and growth expertise	Increase in IDs with growth expertise	Expertise in internationalization and industrial companies most important and more important than in other companies
Q3: The functioning of the board	Meeting frequency	Increases due to more active investors	Modest change	Evidence of increase (matched companies only)
	Issues addressed	In Western buyouts expected to focus on supporting investors – both monitoring and business development issues	Expected increase in issues relating to related transactions and minority shareholders as well to business development issues	Related transactions significantly more important than in other companies
	Challenging executives	PE directors in Western buyouts expected to challenge executives	Few challenges to executives	Few challenges to executives [in line with listed corporations]

1. We define an MBO as an arrangement involving the incumbent management of listed companies acquiring control rights in, and becoming the largest shareholder of, the company through equity transfer.
2. An MBO should be completed before 31 December 2003. By taking end 2003 as our cut-off point we observe at least 4 years of subsequent changes in corporate governance after MBO. Following the controversy of 2004, MBOs completed after 2003 could not obtain approval from the Ministry of Finance (MOF) and later the SASAC.[10] Management has also taken a variety of other initiatives than MBO to gain control of listed companies.[11] We do not include such companies in our sample.
3. The listed companies published their announcement of completion of the MBO before 2003. Some companies released an intention to implement MBO in 2003, but they have not been approved by the government. We exclude those companies where management was the largest shareholder since inception of the company.
4. We include EMBOs (employee and management buyouts). 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 belong to the enterprise's internal management. So an EMBO results in a management buyout.

5. We exclude *de facto* government-controlled MBO companies. 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 indirect controllers of the listed companies from the ownership structure, but in their 2005 or 2006 annual report these companies disclose that "the local government/SASAC is the de facto controller through an 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 belong to traditional industries such as manufacturing, public transport, aquaculture, etc.[12] For consistency, we use the total equity market capitalization whether shares are freely tradable or not. Market capitalization 1 in Table II is at 31 December 2003. Market capitalization 2 is at December 31, 2008. After adjusting for appreciation in the RMB exchange rate, the median compound annual growth rate over this period is 9.33%, with a mean of 18.6%. However, in four companies, capitalization dropped. The highest growth rate is 12 times for TBEA, followed by Midea's 6.7 times.

Following Claessens et al. (2000) and Faccio and Lang (2002), 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 (Midea, Fangda, Xiamen Prosolar, Dongting Aquaculture, Wuchangyu, Hongdou). The ultimate controllers of three companies (TBEA, Yongding, Humanwell) are 3–5 core management members. In the other 10 companies, the ultimate controllers belong to the management teams or ESOP owned companies.

The mean ownership of the controlling group in the year of the MBO in the sample companies is 26.7%, while the mean control right is 35.1%. The mean control/ownership separation index (C/O) is 1.57. These figures are substantially higher than those found for 9 East Asia countries by Claessens et al. (2000), where the ultimate controller had an average (mean) C/O of 1.25, and for 13 Western European countries of 1.11 by Faccio and Lang (2002).

Board information

As these companies remain publicly quoted, information on their boards is publicly available.[13] We obtained data on the following measures:

Directors

It is difficult to define the executive directors in Chinese listed companies clearly. Many companies are called "carve-out" listing (Liu and Sun, 2005), that is the creation of a separate listing of a minority of the equity in a subsidiary company, so many directors are affiliated to the holding companies. The group (parent company) and the listed company are not actually separated. We define strictly 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, we consider the person as an executive director of the listed company too. Chinese listed companies' annual reports disclose their directors' affiliation with holding companies from 2001 and their directors' biographies from 2004. 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 specially by GTA IT Co. in 1999.

Issues discussed by directors

We also collected information on the issues discussed by the independent directors from the CSMAR

TABLE II

The main features of 19 Chinese MBO companies

Company Name	Industry	O	C	C/O	Mrkt ca.1 (in millions, US$)	Mrkt ca.2 (in millions, US$)	Mrkt ca.2/ Mrkt ca.1
Shenzhen Universe Group Co., Ltd	Construct and building material	29.68	40	1.35	106	77	0.73
China Fangda Group Co., Ltd	Conglomerate	24.32	27.36	1.12	129	128	0.99
Shenzhen Huaqiang Industry Co., Ltd	Audio-visual material	15.01	45	3	260	187	0.72
Shandong Shengli Co., Ltd.	Chemical industry (plastic material)	18.12	18.12	1	153	290	1.90
Guangdong Midea Electric Appliances Co., Ltd.	Household electric appliance (white goods)	15.82	30.68	1.94	340	2291	6.74
Zhengzhou Yutong Bus Co., Ltd.	Bus and coach manufacturing	17.19	17.19	1	225	685	3.04
Wuhan Humanwell Hi-tech Industry Company Limited	Medical apparatus and instruments	22.08	29.76	1.35	116	239	2.06
TeBian Electric Apparatus Stock Co., Ltd (TBEA)	Electric transmission and transformation equipment	21.11	21.11	1	339	4187	12.35
JiangSu YongDing Company Limited	Manufacture of communication equipment	47.8	47.8	1	215	139	0.65
Xiamen Prosolar Technology Co., Ltd	Conglomerate	26.58	49.59	1.87	108	173	1.60
Hunan Dongting Aquaculture Co., Ltd	Aquaculture	23.57	29.9	1.27	87	199	2.29
Hubei Wuchangyu CO., Ltd	Aquaculture	68.69	68.69	1	207	135	0.65
Inner Monglia Eerduosi Cashmere Products Co., Ltd.	Clothing	43.36	43.8	1.01	386	724	1.88
Jiangsu Hongdou Industry Co., Ltd	Clothing	19.31	27.48	1.42	163	202	1.24

TABLE II
continued

Company Name	Industry	O	C	C/O	Mrkt ca.1 (in millions, US$)	Mrkt ca.2 (in millions, US$)	Mrkt ca.2/ Mrkt ca.1
Shanghai Dazhong Transportation (Group) Co., Ltd	Public transportation	5.35	21.61	4.04	388	857	2.21
Shanghai Qiangsheng Holding Co., Ltd	Public transportation	19.36	21.51	1.11	439	1267	2.89
Shanghai Pudong Dazhong Taxi Co., Ltd	Public transportation	11.5	32.87	2.86	271	431	1.59
Sichuan Quanxing Co., Ltd.	Foods and beverage	32.79	48.44	1.48	261	801	3.07
Ningbo Shanshan Co., Ltd	Clothing	45.77	45.77	1	233		1.28
		22.08	30.68	1.27	225	290	1.88
		26.71	35.09	1.57	233	701	2.52

Note: We exclude the year of the MBO for consistency and comparability reasons. 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 19MBO companies grew 88% (median), or 1.52 times(mean). O represents ownership (cash flow right), C for control (voting) right. And C/O indicates the separation of cash flow right and control right. The greater the C/O value, the greater the degree of separation of two rights.

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 assets acquisition or assets sales with the group/holding company;
(5) guarantee items;
(6) acquisitions (including acquisition of a company's equity, asset acquisition, joint venture, the capital increase of a invested company);
(7) audit items;
(8) divestment;
(9) equity financing (right offering, seasoned offering, and the allocation of financing);
(10) other (such as corporate governance self-examination, and so on);
(11) the non-tradable share reform plan[14] 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. The selection principle is firstly based on the industry code of the China Securities Regulatory Commission (similar to US the 4-digit SIC code), then secondly according to the closest total assets size.

In terms of the population, we chose all the Chinese listed A-share companies on Shanghai and Shenzhen Stock Exchange. The board data are from CSMAR. We obtained the characteristics of independent directors of the population of listed companies from the Shanghai Stock Exchange, 2004 Annual Report on Corporate Governance: Board independence and effectiveness. The report contains data for 2319 independent directors of all 768 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 key people from the 19 buyouts, according to whether they were chairman of the board or general manager at the time of MBO and had been present in the enterprise for at least 5 years from 2 years before MBO. From analysis of their biographies and the annual reports of these companies, these people are the most important leaders in developing their enterprises.

The 26 leaders had a mean age of 45.04 years (median 44 years) at the year of MBO. These individuals are very young given that they have led the enterprises for a long time before 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 program rather than being traditional SOEs management who are mostly officials assigned by the government.

Board size

The size of the board in MBOs decreases from an average of 10.75 members 2 years before MBO, to 10.1 at MBO year, to 8.33 individuals by year eight. This decline at time of buyout is consistent with evidence from Western MBOs (where buyouts lose between one and two directors on buyout), although evidence suggests that boards in MBOs in the West are smaller than in China at around five members (Cornelli and Karakas, 2008).

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 III).

The number and proportion of executive directors

The average number of executive directors drops from 3.44 people 2 years before MBO to 2.33 people 8 years after MBO, in other words a fall of just over one person on average. However, the proportion of the executive directors in the board as a whole is almost unchanged. Excluding the period 2

TABLE III

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
Mean	9.60	9.68	9.54
MBO–non-MBO Matched pairs: Mann–Whitney test, $z = -0.387$(n.s.)			
MBO-Population: Mann–Whitney test, $z = -0.782$(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 ($P < 0.10$).

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

Separation of the roles of Chairman and the CEO (usually called ''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 examined, only two maintained duality, that is lack of separation, throughout the period. Duality existed in only five companies before MBO. There are four cases of duality at MBO year with three cases at year five 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 do not find significant differences between the three groups (Table IV). 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 before June 2002 and the independent directors should comprise not less than a third of the board from June 2003.[15] This approach imitates the 1998 Combined Code in the UK. As most Chinese MBOs

TABLE IV

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
Mean	1.81	1.88	1.86

1 = duality, 2 = non-duality

MBO–non-MBO Matched pairs: Mann–Whitney test, $z = -1.473$(n.s.)

MBO-Population: Mann–Whitney test, $z = -1.381$(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.

happened in 2001 or 2002, they were completed before this legislation came into force.

The number of independent directors increased dramatically from 0.05 on average 2 years before MBO to an average of 2.37 in the MBO year. The average then slowly rose to 3.33 eight years after buyout. Also notable is the increase in the proportion of the board accounted for by independent directors from 0.5% 2 years before the MBO to 24.6% in the MBO year. The proportion of the board accounted for by independent directors rose further to 30% 1 year after the MBO and continued to rise to 40.2% by year nine. Interestingly, the average proportion of independent directors is above the recommended one-third prescribed by the China Securities Regulatory Commission (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 V). The significantly different years in the matched sample were 2002, 2003, and 2005.

The characteristics of the independent directors

Over the period 1999–2008 we identified a total of 120 people who served as independent directors of the 19 MBO companies examined, amounting to 211 person-terms. A term is usually 3 years. Among the 120 people, 2 (1.7%) served 4 terms, 18 (15%) served 3 terms, 49 (41%) served 2 terms, and 51 (42.5%) served 1 term. According to the CSRC decree of 2001, independent directors can be re-elected for another term, but not exceeding continuous 6 years. 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; (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

TABLE V

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
Mean	25.68	23.99	24.20
MBO–non-MBO Matched pairs: Mann–Whitney test, $z = -1.659$ ($P = 0.097$)			
MBO-Population: Mann–Whitney test, $z = -0.379$ (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 and 2005 ($P < 0.05$ or better). Testing MBO-Population for each year we find significant differences in 2003, 2004 and 2005 ($P < 0.05$ or better).

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.[16]

Scholars provide the most common background of independent directors at 37.5% of the 120 individuals (Table VI). The second most frequent category (19.2%) is individuals who are incumbent management of industrial companies. Of the four independent directors from financial institutions, one is from a securities company, one from a bank, one from a mutual fund management company, and one from a VC/PE firm.[17] All four are their respective firms' chairman or general manager. The third group is professionals, notably those with an industrial or international background who each account for the 10.8% of independent directors. Lawyers and accountants account for 12.5 and 10%, respectively. The fourth group is retired persons, with retired management accounting for 2.5%, while the retired government officials account for 5%.

There are significant differences in the backgrounds of the independent directors between MBOs and the matching pairs (at 10% significance level, the Pearson Chi-Square test, $P = 0.078$), and between MBO and the population of listed companies (at 5% significance level, Pearson Chi-Square test, $P = 0.034$). Specifically, the MBO sample includes more independent directors with an international background and who are incumbent managers in other companies than the matching companies and the overall population. However, MBOs have fewer independent directors who are scholars than the matching companies and 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.

TABLE VI

The characteristics and categories of independent directors of 19 MBO companies post-MBO (1999–2008)

Characteristics	No.	Proportion (%)
Expert: Industrial background	13	10.8
	(6)	(9.84)
	[310]	[13.37]
Expert: International background	13	10.8
	(2)	(3.28)
	[35]	[1.51]
Accountant (incl. asset valuer)	14	11.67
	(10)	(16.39)
	[172]	[7.42]
Lawyer	15	12.5
	(7)	(11.48)
	[181]	[7.81]
Retired management of industrial companies	4	3.33
	(3)	(4.92)
	[132]	[5.69]
Retired government official	6	5.0
	(9)	(14.75)
	[23]	[0.99]
Incumbent management of financial institutions	4	3.3
	(2)	(3.28)
	[181]	[7.81]
Incumbent management of industrial companies	23	19.2
	(6)	(9.84)
	[282]	[12.16]
Scholar	45	37.5
	(31)	(50.82)
	[894]	[38.55]
Other	18	15.0
	(8)	(13.11)
	[109]	[4.70]

Note: For MBO companies the proportion is the number of directors with each characteristic divided by 120. Since a director may have multiple backgrounds and so can be ascribed into different categories, the total number of affiliations is 155 and the total percentages exceed 100%. The figures in parentheses are for the 19 matching paired samples in the 2004 annual report. The figures in squared brackets are for 768 listed Chinese firms on Shanghai Stock Exchange in 2004, from: Shanghai Stock Exchange, 2004 Annual Report on Corporate Governance: Board independence and effectiveness.

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 buyout. The increase in the year of the MBO may reflect the preparations for the MBO.

We find evidence of a significant difference in the frequency of board meetings between the MBOs and matching pairs (at 5% significance level) (Table VII). The MBOs' boards on average held 0.74 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 and Kehoe, 2008).

TABLE VII

Comparison of frequency of board meetings

Year	The frequency of board meeting (MBO)	The frequency of board meeting (non-MBO)	The frequency of board meeting (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
Mean	8.09	7.15	8.03
MBO–non-MBO Matched pairs: Mann–Whitney test, $z = -2.199$ ($P = 0.028$)			
MBO-Population: Mann–Whitney test, $z = -0.323$(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.

TABLE VIII

Comparison of disclosure statements (by number)

Firm categories	Type of disclosure statement											Total no.
	1	2	3	4	5	6	7	8	9	10	11	
A	24	1	4	71	10	1	0	13	3	9	21	157
B	34	6	7	72	29	1	1	14	2	3	19	188
C	3288	378	751	6003	2712	350	355	967	797	1028	1160	17,789
Pearson Chi-Square test (Asymp. Sig., 2-sided), A–B, $P = 0.073$; A–C, $P = 0.000$												

Note: Firm categories: A: MBO sample, B: the matched companies; C: the population (all listed companies on Shanghai and Shenzhen stock exchange). The type of disclosure statement is 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 assets acquisition or assets sales with the group/holding company; 5 = guarantee items; 6 = acquisitions (including acquisition of a company's equity, asset acquisition, joint venture, the capital increase of a invested company); 7 = audit items; 8 = divestment; 9 = equity financing (right offering, seasoned offering, and the allocation of financing); 10 = other (such as corporate governance self-examination, and so on); 11 = the non-tradable share reform plan and its adjustment. The data related to the period 2002–2008 and are from CSMAR.

Nature of issues addressed by independent directors

In total, there are 151 disclosure statements relating to the issues discussed by the independent directors of the 19 MBO companies from 2002 to 2008 (Table VIII). The 151 disclosures involved a total of 157 distinct items, among which most are related transactions (45%), followed by personnel change (15%). The non-tradable share reform items accounted for 13%. Divestiture accounts 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) (Table VIII). 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.

Case study evidence from among the 19 MBO companies is not consistent. Zhu et al. (2006) studied the Yutong buses case and found that after the MBO the related-party transactions, most of which relate to purchasing and sales, frequently took place between the Yutong group (holding company) and the listed company. The listed company's resources were transferred to the parent company or other companies in which the management had significant equity. The related-party transaction is a means to tunnel the private benefit of control for management. But Li (2008) studying the Midea case found that the parent group which is wholly owned by management pays the listed company a charge for use of its trademark, and supports the listed company on brand investments. In this case, the parent company props up the listed company. The ''tunneling or propping up'' effects of related-party transactions in MBOs is in need of further fine-grained analysis.[18]

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. However, anecdotal evidence suggests that independent directors may challenge executives behind the scenes. For example, Mr. GU who is a well-known law professor and vice-chancellor of a leading university in Shanghai is reported as stating that independent directors will challenge executives and request further information before a proposal gets to the voting stage, so that few proposals that reach this stage will be controversial.[19]

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.[20]

For convenience, we summarize the findings of the study, in comparison with our expectations, in Table I.

Discussion and conclusion

Using novel, hand-collected data from 19 MBOs of listed corporations in China, a matched sample of 19 non-MBOs and the population of listed corporations, this article has analyzed the characteristics and behavior of boards of directors in MBOs of Chinese listed corporations and compared these as far as possible with their Chinese non-buyout and Western counterparts.

The major differences between Chinese MBOs and other Chinese listed corporations appear to be a greater proportion of independent directors, more independent directors with internationalization and industry expertise, greater frequency of board meetings and greater focus on discussing related-party transactions, tradable share reforms and divestment. However, there are important similarities between Chinese buyouts and other listed Chinese companies. Some of the changes over time and the lack of differences with other non-MBO firms may reflect the introduction of corporate governance regulations for all listed corporations.

By examining MBOs in China our analysis helps identify limits to applying the private equity backed, highly leveraged Western buyout model in a transition economy where important features are absent.

We find in line with Western experience (Acharya et al., 2009) that the board post-MBO shrinks, but, in contrast, boards in China remain larger and have greater duality. Executives in Chinese MBOs generally have a long association with the firm. The frequency of Board meetings increases in comparison with matched non-MBO companies but not to the level seen in Western MBOs. While there is evidence of greater management replacement in PE-backed Western buyouts than in Western listed corporations, the dominance of insiders means that this difference is absent in Chinese MBOs.

Our findings resonate with and extend other studies of board structures and processes in China. For example, Firth et al. (2007) find that a greater proportion of outsiders on the boards of Chinese listed corporations is associated with greater earnings informativeness. Chen et al. (2006) show that a greater proportion of outside directors are linked to reduced fraud while an increased number of board meetings is associated with more fraud, probably because of the need for greater debate about contentious issues. Our analysis emphasizes the need to recognize that listed corporations in China are heterogeneous as there are important differences between MBOs and other listed corporations. We extend the analysis of Chen et al. (2006) by showing that there are significant differences between MBOs and listed corporations with respect to the role of the board in discussing related-party transactions.

Our first two research questions focused on the nature of boards and the extent to which boards of directors are changed to bring in executive and outside directors with the skills to restructure and grow the business. The results were disappointing. Scholars are the most common group of independent directors. Although they may have important social networks, they are likely to know little about the actual operation of the enterprise and with typically heavy teaching, research, and administration commitments are likely to have little time to play a full role as an independent director. The effectiveness of independent directors, who are incumbent managers in other companies have business expertise, may also be reduced due to limitations on time and energy. Independent directors from financial institutions also seem under-represented which is surprising, since China has numerous emerging securities companies and fund management companies. Given that China's MBOs are likely to need considerable transformation, we would argue that there is a requirement for more independent directors from financial institutions especially from VC/PE firms. This is consistent with the need for further stimulus to the development of the VC/PE industry in China (Bruton and Ahlstrom, 2003; Wright, 2007). Moves in this direction could contribute to an increase in the frequency of board meetings and more specialist involvement towards levels seen in Western buyouts.

Our third question focused on the functioning of the board and the issues addressed by outside directors. Our evidence shows that 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 MBO, significantly more so than in other listed corporations. 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; Nikoskelainen and Wright, 2007). There also appears to be little overt challenging of management.

Although there appears to be compliance with recently introduced corporate governance regulations on independent directors, they 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. Therefore, we suggest that the China Securities Regulatory Commission (CSRC) establish an independent director bank that provides the independent directors who are responsible directly to 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 MBO companies Midea Electrical was the receipt of one of the 10 best boards awards. The citation for the award noted that the Board of Directors is proactive and positive in helping Midea make important acquisitions, continuously optimizing the ownership structure, building a professional team of directors, and giving full play to the role of independent directors. Further, Midea promotes equity incentives and has been pursuing a high cash dividend policy to protect the interest of small shareholders.

While we have identified differences in the relative importance on boards of independent directors with different backgrounds based on publicly available data, we have not been able to provide more fine-grained analysis of the activities of these individuals in the process of board activities. Further work is needed on this topic. This would likely involve the need to undertake more longitudinal in-depth analysis of the processes taking place post-MBO, although gaining access to board meetings is notoriously problematical.

Overall, this article has sought to extend examination of MBOs to the context of MBOs of listed corporations in China. Our evidence indicates that while there has been some development of boards, they do not adequately possess the expertise needed to address both business development and the monitoring of management.

Notes

[1] There seems, unfortunately, to be no precise definition of medium and small enterprises, or of highly competitive industries.

[2] There were no private property rights under Mao's China and concepts of corporation, share, shareholders, etc. did not exist either. Property rights remained ambiguous even after they went public in the early years of 1990s.

[3] In several MBOs the company founders owned critical technical patents and know-how to run the companies.

[4] This government-controlled regulatory framework contrasts markedly with the administratively independent regulatory bodies in the US and UK. The state in China monopolizes access to equity finance since this allows it the final say as to which firms are qualified to raise equity funds through initial public offerings (IPO). Since 2005 reforms have helped ease the non-tradability problem subject to lock-up conditions.

[5] In 1994 the Ministry of Labor issued a policy that the bonus and salary level of CEO and chairman of SOEs could not exceed 8 times the average employee's income. These policies were canceled at the end of 1990s.

[6] For example in an interview with a reporter during the buyout process, Xiangjian He, the founder and chairman of Midea, admitted that incentives were the most crucial problem he was confronted with before the MBO (*CAIJING*, 2000, 4).

[7] In a township-village enterprise case, the managers of Midea, the largest air-conditioner and other white goods manufacturer in China, had to say that the relationship between Midea and the town government has always been one of ''mutual respect, mutual help'', ''Each step in the development of Midea depends on the town government's support''. *CAIJING*, 2000, 4. In another SOE case, Yutong, China's largest bus and coach manufacturer, the MBO process was full of frustration. The municipal government, the agent of the state owner, strongly and firmly supported the MBO while the ultimate owner, central government disapproved. Under a local legal decision the management, implicitly supported by the local government, acquired the original state-owned majority shares and completed the MBO without central government approval.

[8] In our sample the holding companies of the 19 listed companies held an average 28.9% of the equity at the end of 2008. At this level the holding companies can virtually control the listed companies without triggering the 30% threshold of a mandatory tender offer.

[9] Some institutions (like consultant companies, trust companies for financing MBO, investment banks as underwriters and financial consultants for these listed companies) play a similar role in some aspects to PE firms in Chinese MBO. However, they are not PE in essence.

[10] In practice, there were several cases of MBOs involving state-owned companies after 2004 because of delays in government approval. However, 2003 is our cut-off.

[11] These can be referred to as ''hidden MBO'' or ''curved MBO''. The management became the controlling shareholder through the restructuring of the state-owned or collective-owned parent company. Or the management controlled enterprise acquired the shares through an auction (not through equity transfer) and became the largest shareholder.

[12] One company, Shanghai Pudong Dazhong Taxi Co., completely changed its main line of business from the taxi industry to public utility (gas). Another

company, Wuchangyu, changed from aquaculture farming to two major lines of business, aquaculture and real estate.

[13] The Supervisory Boards of Chinese listed companies are very weak and vulnerable. The supervisory board is dominated by insiders (Union members, financial staff). Supervisory board members' pay, job, etc. are de facto decided by the management. So the supervisory board cannot monitor management. At present, Chinese regulators realize that the role of the supervisory board and the role of independent directors overlap. As a result, the supervisory board is gradually being marginalized. We therefore focus upon executive boards.

[14] A distinct feature of Chinese public corporations was the significant constraint on the tradability of corporate stocks, most of which were in government hands. Shares could be transferred among various institutions subject to government approval but after transfer these shares still remain non-tradable on the market. Beginning in September 2005 the CSRC formally started ''the non-tradable share reform'', which was accomplished by the end of 2006. As a result of the reforms, the non-tradable shareholders were required to pay a compensation package to those holding tradable shares after active communication with them. On average, the tradable shareholders receive approximately 3 for every 10 shares they hold from the non-tradable shareholders as compensation. The lockup period is 12 months for small non-tradable shareholders. But the large non-tradable shareholders (holding greater than 5% of total shares) must hold their shares for at least 36 months once they become tradable.

[15] Before the 2001 decree of CSRC, most Chinese listed companies had no independent director at all.

[16] If the expert works at a university research institution with a strong industrial link, we identify them as having industrial expertise. An expert with an international background is identified as working or having worked in overseas organizations or having graduated from an overseas university, or works for Chinese-foreign cooperation agencies. Each director may have multiple backgrounds and so can be ascribed to different categories simultaneously.

[17] The VC firm is Shenzhen Capital Group Co, which was founded in 1999.

[18] Friedman (2003) developed a model in which controlling shareholders may choose either tunneling or propping depending on the magnitude of an adverse shock and the magnitude of the private benefits of control. Peng et al. (2011) employ connected transaction data from China and show that when listed companies are financially healthy (in financial distress), their controlling shareholders are more likely to conduct connected transactions to tunnel (prop up) their listed companies.

[19] Interview in BOARD, October 2010.

[20] In China listed companies rarely dismiss independent directors. According to Zhi and Tong (2005), independent directors were changed for a total of 427 person/time. Among them only two cases were public dismissals (0.47%). The other reasons for a change of independent directors were: (1) change personnel upon completion of a term (36.3%); (2) resignation (51.5%); (3) undisclosed (11.7%). As the disclosure of the resignation of an independent director will have a negative impact on the capital markets, some directors will be asked to submit their resignation when their term expires or will not disclose at all.

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