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**DIRECTORS' COMPENSATION & FINANCIAL STATEMENT FRAUD: A
COMPARATIVE STUDY OF CHINA AND THE US**

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ABSTRACT

Financial statement fraud (FSF), generally committed by personnel in high ranks commanding substantial power, is regarded as one of the costliest corporate frauds which has affected both developed and developing nations. One of the reasons for the occurrence of FSF is the divergence in interests of the management (agents) and shareholders (principals). Agency theory propounds implementation of adequate compensation for achieving the alignment of interests of agents and principals. However, compensation is a double-edged sword, which may control or aggravate the incidence of FSF. Existing research has, primarily, focused on earnings management/restatement/FSF and its linkages with executive compensation. However, such analysis does not give a full picture, as directors (acting as agents of shareholders) are key monitors of the management and if they are effective in their monitoring function, then the incidence of FSF can be controlled. Hence, it is imperative that the directors' interests are well aligned with those of the shareholders. Thus, this research attempts to view the incidence of FSF from the perspective of directors. Herein, an attempt is made to examine the causal relationship between FSF and directors' compensation and shareholding.

The main objective of this study is to find out if there are any elements within the compensation packages of directors which may induce FSF. Using matched pairs methodology, this study examines the association between directors' compensation and shareholding and FSF in two of the worlds' largest economies, China and the US as these two economies are diametrically opposite in their cultural make-up and in their institutional, political, legal, and governance orientation. China is a collectivist society whereas the US is individualistic. US follows the American corporate governance model whereas Chinese corporate governance paradigm is influenced by the German governance system. Further, in US the private sector plays a key role in the corporate sector whereas in China the state owned enterprises (SOEs) are still a dominant player in the corporate sector.

This research contributes to literature on corporate governance, agency theory, institutional theory, and fraud. The results show that stock-based compensation can induce FSF. Directors' shareholding in China and directors' stock-based compensation in the US both have a significant positive association with the incidence of FSF, thereby implying that directors' shareholding and stock-based compensation can induce fraud. This research finding has implications for practice as it questions the packaging of directors' compensation and provides evidence against the use of stock-based compensation and shareholding for directors. On the governance front, the results indicate that type of auditor, CEO duality, and frequency of board meetings also influence the incidence of FSF. Also, this research also points out that measures of good corporate governance are vital for all economies irrespective of their cultural and governance orientations.

Additionally, the results of this study can be extended to other developed and developing economies operating within the same corporate governance paradigms as that of China and the US.

EXPECTED PUBLICATIONS FROM THIS THESIS

S. No.	Research Paper	Targeted Journal	Targeted timeline to submission
1.	Paper 1 (China): <i>Directors and financial statement fraud in China</i>	<ul style="list-style-type: none"> • Review of Quantitative Finance and Accounting (RQFA) 	30 th July 2022
2.	Paper 2 (US): <i>Does directors' compensation induce financial statement fraud?</i>	<ul style="list-style-type: none"> • International Review of Financial Analysis 	15 th July 2022
3.	Paper 3 (US Vs China): <i>Do fraud firms differ? – A perspective from the fraud triangle. A comparative study of the United States and China</i>	<ul style="list-style-type: none"> • International Journal of Finance and Economics 	15 th August 2022

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DEDICATION

I dedicate this research work to my Spiritual Guru, Sai Baba.

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List of Abbreviations

S. No.	Abbreviation	Full Form
1.	AoA	Articles of Association
2.	ADR	American Depository Receipts
3.	BoD	Board of Directors
4.	CEO	Chief Executive Officer
5.	CG	Corporate Governance
6.	2CGM	2 corporate governance models namely American and Chinese
7.	CPA	Certified Public Accountant
8.	CSRC	China Securities Regulatory Commission
9.	EM	Earnings Management
10.	ESOP	Employee Stock Option Plans
11.	FSF	Financial Statement Fraud
12.	GSM	General Shareholder Meeting
13.	LTIP	Long Term Incentive Plans
14.	MB	Management Board
15.	NASDAQ	National Association of Securities Dealers Automated Quotations
16.	NYSE	New York Stock Exchange
17.	OECD	Organisation for Economic Co-operation and Development
18.	RPT	Related Party Transaction
19.	SASAC	State-owned Assets Supervision and Administration Commission
20.	SB	Supervisory Board
21.	SEC	Securities Exchange Commission, USA
22.	SOE	State Owned Enterprises
23.	WTO	World Trade Organization

1. Introduction

This research is about financial statement fraud (FSF) and its linkages with directors' compensation, particularly about the interaction between these two factors in two different corporate governance (CG) settings. This thesis engages, critically, with literature on corporate governance, financial statement fraud, and compensation (both executive compensation and directors' compensation). It assesses the importance of directors' compensation in inducing financial statement fraud and delves into theories on corporate governance along with theories on fraud and examines their contribution to compensation practices. Focus of this study is on financial statement fraud in listed companies in US and China.

1.1 Background

White-collar crime is a bane for the development and growth of any society. Sutherland (1949, p. 13) states that 'White-collar crimes violate trust and therefore create distrust; this lowers social morale and produces social disorganization... Ordinary crimes, on the other hand, produce little effect on social institutions or social organization'. Given this background, historically efforts have been made to prevent fraud and to bring those guilty to the book. Kerwin (1995) further elucidates on this issue and states that the cost of fraud is ten times more than the cost of traditional crime. He argues that greatest loss occurs when the management is itself involved in the perpetration of fraud. However, corporate fraud can assume various facets. O'Gara (2004, p. 1) defines corporate fraud and states that "Fraud encompasses an array of irregularities and illegal acts characterized by intentional deception. It can be perpetrated for the benefit of or to the detriment of the organization and by persons outside as well as inside the organization". Thus, corporate fraud can include corruption/internal misappropriation; bribery; money laundering; external frauds like credit card fraud; or financial statement fraud (FSF) (O'Gara, 2004). Of these, FSF is the costliest kind of corporate fraud. Though FSF may be present in just 10% of corporate fraud cases, its median cost can be as much as USD 2.0 million (Coenen & ProQuest, 2008). The high cost and magnitude of this crime emanates from the fact that those who commit FSF tend to be in positions of power, generally senior-level managers/executives, who have access to assets, information, and systems. Further, this access can be easily used by them to carry out the fraud (Coenen & ProQuest, 2008). Thus, FSF, which is a deliberate crime, can cause excessive harm to all stakeholders of a business including shareholders, employees, auditors, bankers, creditors, and pensioners. FSF erodes the confidence of the market participants in audited accounting statements. Further, it also has an adverse impact on security prices and the cost of capital, as the market participants associate low quality of financial statements with high information risk. As per some estimates, FSF has caused losses of approximately USD 500.0 billion over the last few years (Rezaee, 2005). The present estimation of loss may be even higher on two accounts – firstly, the figure of USD 500.0 billion is only for the US market and

secondly, the estimate dates back to 2002 (Rezaee, 2005). Further, substantial enforcements costs have to be incurred in investigating white collar crimes (Nguyen, 2021).

FSF is committed with an intent to deceive and has a wide connotation. According to Rezaee (2005, p. 279) it can encompass several schemes such as: '(1) falsification, alteration, or manipulation of material financial records, supporting documents, or business transactions; (2) material intentional misstatements, omissions, or misrepresentations of events, transactions, accounts or other significant information from which financial statements are prepared; (3) deliberate misapplication, intentional misinterpretation, and wrongful execution of accounting standards, principles, policies and methods used to measure, recognize, and report economic events and business transactions; (4) intentional omissions and disclosures or presentation of inadequate disclosures regarding accounting standards, principles, practices, and related financial information; (5) the use of aggressive accounting techniques through illegitimate earnings management; and (6) manipulation of accounting practices under the existing rules-based accounting standards which have become too detailed and too easy to circumvent and contain loopholes that allow companies to hide the economic substance of their performance'. Beasley (1996) adds to the above definition of FSF and considers it to also include the misappropriation of assets. Coenen and ProQuest (2008) also define FSF on similar lines and state that FSF can include intentional misstatement of numbers or intentional misapplication of accounting norms.

The extent of damage caused by FSF can be gauged from the statements released by the U.S. Securities Exchange Commission (SEC) from time to time on various cases of financial statement fraud that have plagued the US economy. For instance: SEC (2002a) states that 'Mr. Fastow's actions, along with the actions of others at Enron and elsewhere, have undermined investor confidence in our markets and our system of financial reporting'. In another statement on Adelphia, SEC (2002b) states that 'This case presents a deeply troubling picture of greed and deception at a large, publicly-held company'. With respect to Xerox, SEC (2002c) states 'Xerox used its accounting to burnish and distort operating results rather than to describe them accurately. For Xerox, the accounting function was just another revenue source and profit opportunity. As a result, investors were misled and betrayed'. SEC's views on Waste Management are summed up as follows 'Our complaint describes one of the most egregious accounting frauds we have seen. For years, these defendants cooked the books, enriched themselves, preserved their jobs, and duped unsuspecting shareholders' (SEC, 2002d). In another release related to a financial statement fraud by a Chinese company namely Luckin Coffee Inc., the SEC stated that 'Public issuers who access our markets, regardless of where they are located, must not provide false or misleading information to investors. The SEC's complaint alleges that Luckin's disclosures to investors about its revenues were false' (SEC, 2020).

Fraud (including corporate fraud, and FSF) and fraud related topics such as earning management (EM) have been widely examined and existing research has attempted to view these topics from different perspectives (Hogan, et al., 2008) such as strength/weakness in internal controls (Bell & Carcello, 2000; Farber, 2005; McMullen & Raghunandan, 1996); auditors' fees, tenure and type (Lennox & Pittman, 2010; Pyzoha & Jenkins, 2019; Patterson, et al., 2019; Markelevich & Rosner, 2013; Mukhlisin, 2018); external funding pressure (Shi et al., 2017); gender diversity (Wang, et al., 2022; Liao et al., 2019; Liu et al., 2016), external monitoring pressure (Shi, et al., 2017; Chen, et al., 2016), insider trading (Summers & Sweeney, 1998); personal gain/compensation (Harris & Bromiley, 2007; Laux & Laux, 2009; Conyon & He, 2016).

With respect to compensation (including equity incentives) and fraud, erstwhile research has focused primarily on executive compensation. Further, the empirical evidence from this research remains inconclusive with respect to the nature association between these two variables with some studies claiming absence of any robust relationship (as directors will increase their oversight efforts in light of higher CEO compensation (Laux & Laux, 2009)) and others claiming a positive relationship between compensation and fraud (Jiang, et al., 2010; Harris & Bromiley, 2007; Hsieh, et al., 2016) and yet some others claiming a negative relationship (Alkebsee, et al., 2021; Zhou, et al., 2018; Conyon & He, 2016; Erickson et al., 2006; Armstrong et al., 2010).

Considering only executive compensation, however, represents a limited view of the issue as from the perspective of financial statements, three parties namely the directors, the management, and the auditors are the key actors involved in the preparation of financial statements. Further, the role of the directors gains more credence as directors are instrumental in setting the right 'tone at the top', which in turn has a bearing on the effectiveness of internal controls, the truthfulness of financial statements, the oversight of management, and the level of vigilance within the control environment (Brennan & McGrath, 2007; Brandes et al., 2016).

Directors also play an important role in corporate governance. Weisbach (1988; p. 431) considers directors to be the 'shareholders' first line of defence' in the wake of management incompetence. Further, in cases of firms performing poorly, the turnover of CEOs is highest when the board of directors (BoD) has a higher percentage of outside directors. Bravo et al. (2018) associate lower cost of capital with better composition of the BoD. Better boards result in better risk disclosures, which result in the lowering of the cost of capital. Fama and Jensen (1983; pp. 313, 314) regard the BoD to have the 'ultimate control over internal agents' and to be the 'the top-level court of appeals of the internal agent market'.

According to Bainbridge (2012, p.43) as per Delaware General Corporation Law a firms' affairs and business 'shall be managed by or under the direction of a board of directors'. Shivdasani and Yermack (1999) contend that protecting shareholders' interest is the fiduciary duty of the directors and that the BoD is the pivotal monitoring mechanism. Thus, the directors are appointed by the

shareholders to monitor and guide the management with a view to maximise shareholders' wealth. Hence, directors act as agents of the shareholders (Pereira, 2015).

According to Zalewska (2014, p. 1), the corporate scandals of the 20th and early 21st centuries 'exposed a high level of mismanagement', and 'resulted in unprecedented loss of money'. These scandals not only pulled down the corporates perpetrating the fraud but also the entire sector/industry and economies. Thus, there is heightened focus on avoiding such scandals from being committed in future. Agency issues have been identified as being at the heart of these corporate scandals and managerial incentive has been argued to be a solution to agency problems. However, Bebchuk and Fried (2003, 2004) contend that remuneration can also result in agency problems.

According to Adams et al. (2010), corporations have a significant share in economic activity and hence the cost of their agency problems is very significant. Therefore, the role of BoD/ directors in governance is of vital importance, as the directors are a key internal control mechanism through which the shareholders exercise control over the top management in corporations. Further, the directors also play a significant role in setting an ethical tone at the top. Hamdani and Kraakman (2007) argue that the directors are duty-bound to guard the shareholders against misconduct by the managers which includes manipulation of financial data.

Given the pivotal role played by directors in corporate governance, it is of vital importance that the interests of the directors (as agents) are well aligned with the interests of the shareholders (as principals). This relationship brings to fore the significance of compensation in tackling the apparent agency problem¹ in the relationship between the directors and the shareholders and in the alignment of their goals (Pereira, 2015). Jensen and Meckling (1976) support this view and state that the establishment of appropriate incentives for the agents can limit the divergence between the interests of the principal and the agent.

However, constituents of compensation packages such as 'stock options' have been found to result in the compromise of the independence and objectivity of executives (Rose et al., 2013; Aboody & Kasznik, 2000; Yermack, 1997; Bebchuk et al., 2002; Goldman & Slezak, 2006). Further, stock options can also be employed to inflate earnings. Jeffrey Skilling, former CEO of Enron testified that 'Essentially what you do is you issue stock options to reduce compensation expense, and therefore increase your profitability' (Hitt & Schlesinger, 2002).

Thus, it is vital to examine whether there are any elements within the compensation packages of the directors which can induce them into conniving in FSF and which thus have an adverse impact on their ability to set the tone of

¹ Agency problems arise as the pay-off structures of different stakeholders of a firm are different and also the alignment of the interests of different stakeholders with the interests of agents is different (John & Senbet, 1998)

'truthfulness' at all levels within the organisation. Further, such an enquiry into directors' compensation needs to be made within the paradigm of the various corporate governance (CG) models as the CG mechanisms vary across nations, as each nation's institutional and legal factors govern the mechanisms that the stakeholders adopt to govern management behaviour. For instance, the American governance model is characterised by liquid capital markets and an active market for corporate control. These result in the efficient use of agency contracts as a disciplinary mechanism. Private households/investors tend to be the largest group of shareholders. Further, the focus is on the maximisation of shareholder wealth and hence from a governance perspective, the shareholders' benefit is superior to that of a company's managers. On the other hand, the German/Continental governance model is characterised by high ownership concentration, resulting in a less active capital market and a low-profile market for capital control. These characteristics hold true for China as well (Bhabra et al., 2008; Ma et al., 2018). Further, non-financial enterprises tend to be the most significant group of shareholders. From a management compensation perspective, the American model relies heavily on bonus plans and stock options, whereas the German/Continental governance model has traditionally relied less on performance-linked compensation (Dietl & Ebrary Inc., 1998; García-Sánchez et al., 2015; John & Senbet, 1998). The Chinese governance model, on the other hand, has elements of both the American and the German/Continental systems in that China has a dual board system (with both a board of directors and a supervisory board) and has been slow in adopting stock-based compensation.

In this research, a comparative study of China and the US is undertaken to examine the impact of directors' compensation on the incidence of FSF. China and US have been chosen for several reasons. Firstly, both the countries are, presently, two of the largest economies of the world. In terms of gross domestic product (GDP), US reported a GDP of USD 20.95 trillion² in 2020 whereas China reported a GDP of USD 14.72 trillion³ for the same year. Secondly, these countries are also home to the world's largest stock markets. Shanghai Stock Exchange is in China whereas National Association of Securities Dealers Automated Quotations (NASDAQ) and New York Stock Exchange (NYSE) are in the US⁴. Thirdly, in terms of culture, the two nations are diagonally opposite. China represents a collectivist culture whereas the US is marked by individualism (Hofstede Insights, 2021; Wang, et al., 2021) and as argued by Franke and Richey (2010) in case of country comparisons, choosing countries which considerably vary in cultural dimensions can be helpful in identifying relationships. Fourthly, China and US follow different corporate governance paradigms. China is influenced by the German governance system and follows the dual board model whereas the US follows the American governance model with a single board. Fifthly, the two countries are at different levels of corporate

² Source: <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD>

³ Source: <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD>

⁴ <https://www.statista.com/statistics/270126/largest-stock-exchange-operators-by-market-capitalization-of-listed-companies/>. Accessed on 8th September 2021

governance maturity with US being a front-runner in corporate governance and China still evolving with respect to corporate governance. For instance: in China, company law was introduced only in 1994 (Fleckner et al., 2013). Further, China Securities Regulatory Commission (CSRC) was formed in 1992 whereas the U.S. Securities and Exchange Commission (SEC) was established way back in 1934. Sixthly, the role of the government is limited in the corporate sector in case of the US while in case of China the state owned enterprises still play a dominant role especially in strategic industries such as banking, petrochemicals, telecommunications, and raw material (Ralston, et al., 2006; Wang & Song, 2019). Seventhly, investor protection and the legal system in China are weak as compared to the western world (Allen, et al., 2005; Conyon & He, 2016; Jiu, 2021). According to Ding et al. (2010), in China punishment to fraudulent firms is not very severe. Further, such punishment is meted out by the CSRC or the stock exchanges and not by the court. Lastly, the two countries also exhibit differences in their compensation practices. In the US there is wide acceptance of stock and option-based compensation for directors (Gordon, 2007). On the other hand, China has exhibited reluctance in use of stock/option-based compensation (Adithipyangkul et al., 2011), which was permitted by CSRC only from December 2005 (Jiang et al., 2017).

Most of the existing literature has been focused on executive compensation and financial statement fraud in the US. Further, little attention has been paid to role of directors' compensation in inducing fraud. However, globalisation of investment and business necessitates that such examination be carried out in respect of other countries as well. Therefore, in this study, we provide additional empirical evidence on directors' compensation & FSF in China and in the US.

This study is related to that of Kim, et al. (2013), Cullinan, et al. (2008), and Cullinan, et al. (2010), though these papers focus on the US market. Kim, et al. (2013) focuses on corporate fraud (including bribery, embezzlement, option back-dating) and its association with directors' compensation & composition. Further, this study has a smaller sample size (128 fraud firms) and uses Accounting and Auditing Enforcement Releases (AAERs) for the period from 2003 to 2010 to identify firms that have been implicated of corporate fraud. On the other hand, Cullinan, et al. (2008) focus on independent directors' option based compensation and misstatements in revenue. Using GAO databased over the period from 1997 and 2002, this study also has a smaller sample 105 misstating firms. Cullinan, et al. (2010) using a sample of 243 firms, examine the association between stock options grants to audit committee members and weakness internal controls. Other pertinent studies include Persons (2012) which focuses on independent directors' cash & stock-based compensation and violation of Rule 10(b)-5 of the 1934 Securities Exchange Act in relation to purchase and sale of securities. Bebchuk, et al. (2010) which looks at opportunistic timing of option grants to independent directors. Alkebeese, et al. (2021) focuses on the Chinese market and examines the association between likelihood of corporate fraud and independent directors' cash compensation. Archambeault, et al. (2008) examines the effectiveness of audit committee in

wake of stock-option grants to audit committee members, using a sample of 153 firms in the US which restated their financial statements. Ye (2014) which examines the linkage between independent directors' cash-based compensation and earnings management, in China.

The present study differs from the above research efforts in several ways. Firstly, we use a larger sample of 903 fraud firms for China and of 387 fraud firms for the US. Secondly, this study focuses on a different kind of fraud i.e. financial statement fraud. Also, this study uses a broader definition of financial statement fraud by including cases of fraud both in the financial statement fraud and in offering documents (for the US market). Further, it may be noted that a mere misstatement in financial statements doesn't necessarily imply that a fraud has been committed (Hamilton & Smith, 2021). Thirdly, this study uses different databases for identification of fraud firms (CSMAR for China and SCAC for the US) which provide a larger sample for study. Fourthly, the present research takes a comprehensive look at directors' compensation by investigating the effect of both cash-based and stock/option-based compensation. Further, it also bifurcates the directors into three sub-categories namely executive, independent, and non-executive & non-independent directors (as applicable) and analyses each of them separately. Lastly, the sample period of this study is longer and more recent (2005-2018/19). Thus, this study complements the few studies conducted on the subject and provides another lens to view the impact of directors' compensation on financial statement fraud.

From a theoretical lens, theories from the fields of fraud and corporate governance are of relevance to this research project. As people are at the centre of any fraud, both as victims and as perpetrators, an understanding of the motivations and avenues which provide opportunities for committing fraud are vital to understand why it occurs and to devise mechanisms to reduce the incidence of it happening. Many theories have attempted to explain the incidence of fraud. A key theory among them is the theory of the Fraud Triangle, formulated by Cressey (1953). As per the theory, occurrence of fraud is explained by the co-existence of three elements: perceived opportunity, perceived pressure, and rationalisation. Rationalisation deals with the fraudster's justification for the fraudulent behaviour. Perceived pressure deals with the motivation to commit the fraud, and perceived opportunity relates to weakness in controls, availability of a target, or the remote likelihood of fraud detection. With respect to FSF, Brennan and McGrath (2007) find that in 43%⁵ of the cases of FSF studied by them, the key motivation was personal gain and most of those involved were guilty of either obtaining bonuses, which were unlawful, or of insider trading.

Taking a cue from personal gain/ self-interest being at the heart of FSF, this research examines the role of compensation as a motivating/demotivating factor for FSF and chiefly uses the agency theory of CG apart from institutional

⁵ 6 out of 14.

theory and the theory of fraud triangle. The agency theory has a wide applicability and it is the most important theory for research on executive compensation (Pepper & Gore, 2015). This theory argues that the agents may indulge in self-serving behaviour to protect/ promote their interests when their interests are not aligned with those of the principals. 'Compensation' is regarded as one of the tools to achieve alignment of these divergent interests (Eisenhardt, 1989; Jensen & Meckling, 1976).

This brings us to the research agenda for this research project.

1.2 Research agenda

Drawing upon studies on compensation, corporate governance, and fraud, the main research question for this study is identified as:

1. Whether the quantum and structure of directors' compensation packages, under the two corporate governance models, namely the US and Chinese models (2CGM) has a role to play in tempting the directors to either connive in or overlook FSF. Sub-research questions/areas are:
 - (a) Does the level of directors' stock ownership in the corporation influence FSF?
 - (b) Does the design of directors' compensation package such as the proportion of stock-based compensation affect FSF?
 - (c) Do BoD characteristics such as independence and diversity influence the incidence of FSF?
 - (d) What role do CG and firm-specific factors play in influencing the incidence of FSF?
 - (e) Despite the overarching influence of culture & legal/institutional structures on the different CG systems, are there any best practices with respect to directors' compensation which can be adopted under the 2CGM to combat FSF? Also, is there an optimal structure of directors' compensation, or if not, what type of compensation is good enough?

1.3 Research aim and objectives

The aim of this research is to examine, empirically, the influence of policies related to directors' compensation/ remuneration under the 2CGM, on FSF. Directors' compensation is significant, as directors are a key mechanism in the CG structure and remuneration has always been regarded as a potent tool in corporate governance literature for aligning divergent interests. At a granular level, this research seeks to gauge whether the structure and composition of directors' compensation have an influence on the incidence of FSF, and further, whether the CG model adopted by a corporation affects the composition and quantum of directors' compensation.

The research objectives are as follows:

- To review literature on corporate governance, financial statement fraud, and compensation and analyse the interactions between them.
- To undertake an analysis of directors' compensation and CG mechanisms, including those related to compensation, under the 2CGM;
- To use the approach of matched pairs (fraud vs. no fraud firms) to analyse if there exists a causal relationship between directors' compensation and FSF under the 2CGM; and
- To offer recommendations towards the effective design and packaging of directors' compensation based on analysis of the data gathered.

1.4 Research contribution

There has been extensive research on management compensation and earnings management/ restatements/ fraud. Studies have also been conducted on corporate governance and its role in preventing financial statement fraud. In fact, new laws like the Sarbanes–Oxley Act of 2002 (US) have been passed to bolster CG mechanisms and to combat FSF. However, there have not been many studies which specifically study directors' compensation under each of the 2CGMs and then relate those findings to the occurrence of FSF. This research will fill that gap and enhance the understanding of the interaction between CG models, directors' compensation, and FSF. A larger implication of this study could be an outcome in the form of the identification of best practice with respect to directors' compensation, which are relevant and adaptable in each of the 2CGMs i.e., whether there could be some level of harmonisation in directors' compensation packages.

This comparative case-study-based research will contribute to a better understanding of directors' compensation under the 2CGM and its influence on FSF. The main contribution of this research would be the compilation of best practice with respect to directors' compensation, which can be adopted under each of the 2CGM (with or without modifications) to combat/reduce the incidence of FSF.

1.5 Thesis structure

Described in the section below is the structure of this thesis along with the broad description of each of the individual chapters.

Chapter 2. Literature review

Chapter two marks the beginning of this thesis and presents a review of the relevant literature. This chapter discusses research on corporate governance

covering the various corporate governance theories, different CG systems, impact of culture on corporate governance, Chinese and the US corporate governance systems, and the challenges to corporate governance.

This is followed by examination of research on compensation including executive and directors' compensation, models of determining compensation, compensation practices in China and the US, and the role of compensation in corporate governance. Presented next is a review of literature on financial statement fraud covering the various theories of fraud and the challenges presented by financial statement fraud. Finally, literature on the linkages between financial statement fraud and compensation has been reviewed.

The above review of literature forms the basis for the identification of the research gap, and the primary and secondary research questions. It also sets the scope of the research that is carried out in this thesis.

Chapter 3. Research philosophy and methodology

The research philosophy and the methodology used in the thesis are covered in chapter three. It describes the ontological basis of this research as one reality which is external and universal and the epistemology of this research is that knowledge is quantifiable and observable. The chapter describes that 'positivist' philosophy has been adopted and quantitative methods have been used. Research design, sample selection process, and data analysis techniques have also been covered in this chapter. It also covers the ethical considerations of this research. Detailed description of the data generation and various methods are covered in each of the empirical chapters.

Chapter 4. Paper 1 – Directors and financial statement fraud in China

Chapter four is the first empirical chapter and explores financial statement fraud and its relationship with directors' compensation in China. Using quantitative methods, this chapter examines secondary data on FSF and directors' compensation to assess, if there is a causal relationship between the two variables. The results are validated using several robustness checks. The impact of state owned enterprises and of politically connected directors is also examined.

Chapter 5. Paper2 - Does directors' compensation induce financial statement fraud?

Chapter five, the second empirical chapter, examines the causal relationship between directors' compensation and financial statement fraud in the US. Using hand-collected data, from SEC filings, on directors' compensation and several other control variables, this chapter employs several quantitative

methods and scenarios analysis which reconfirm the results of the initial analysis.

Chapter 6. Do fraud firms differ? – A perspective from the fraud triangle. A comparative study of the United States and China

The comparison of the US and China is covered in the third empirical chapter which is chapter six. Using the fraud triangle theory, this chapter first compares the two countries on the various variables representing the three legs of the fraud triangle and then undertakes a detailed analysis of the combined data from the US and China.

Chapter 7. Conclusion

The summary of the findings, methodology, and the research background are presented in chapter seven. The conclusions and recommendation of each empirical chapter as well as the overall conclusion of the study is provided. The chapter also attempts to answer reach questions and discusses the limitations and the contributions of this study.

2. Literature review

2.1 Corporate governance (CG)

The Cadbury report (1992, p. 14) defines corporate governance as 'the system by which companies are directed and controlled'. John and Senbet (1998) state that the reason for existence of CG is the separation between ownership and management of corporations and the resulting agency problems. As per their study, corporate governance is a means for the owners to exert control over a corporation, thereby exercising the rights accorded to them by the corporate bylaws, and by the legal and regulatory frameworks. On the other hand, Demb and Neubauer (1992, p. 9) define CG as 'the process by which corporations are made responsive to the rights and wishes of the stakeholders'. Further, according to them there are four mechanisms that can be employed to attain corporate accountability by influencing corporate behaviour, namely board structures, social pressure, ownership, and regulations. Shleifer and Vishny (1997, p. 737), on the other hand, state that corporate governance deals with mechanisms by 'which suppliers of finance to corporations assure themselves of getting a return on their investment. How do the suppliers of finance get managers to return some of the profits to them? How do they make sure that managers do not steal the capital they supply or invest it in bad projects? How do suppliers of finance control managers?'

The above definitions reflect the divergence of viewpoints with respect to corporate governance. Demb and Neubauer (1992) propound the stakeholders' view of CG, whereas Shleifer and Vishny (1997) focus chiefly on the shareholders' view. On the other hand, Claessens and Yurtoglu (2012) argue that two views of CG prevail. The behavioural view focuses on behavioural patterns as measured by efficiency, growth, financial structure, performance, and treatment of shareholders and other stakeholders. On the other hand, the normative view is concerned with the rules under which firms operate, with the rules coming from such sources as the legal system, financial markets, and factor (labour) markets. Larcker, Richardson, and Tuna (2007, p. 964) state that 'corporate governance refers to the set of mechanisms that influence the decisions made by managers when there is a separation of ownership and control'. On the other hand, Armstrong, Guay and Weber (2010, p. 181) define CG as 'the subset of a firm's contracts that helps align the actions and choices of managers with the interests of shareholders'. Brickley and Zimmerman (2010) contend that there are diverse definitions of CG and there is no general consensus on the definition of the term. However, according to them, it is better to have a broader definition of corporate governance which encompasses all the top three decision makers of a firm namely the directors, shareholders, and the top managers. They argue that centring attention on the separation of ownership and control at the level of the top management and the shareholders ignores the conflicts that may arise between different classes of shareholders (such as majority and minority shareholders). They recommend the following definition of corporate governance 'corporate governance is the

system of laws, regulations, institutions, markets, contracts, and corporate policies and procedures (such as the internal control system, policy manuals, and budgets) that direct and influence the actions of the top-level decision makers in the corporation (shareholders, boards, and executives)' (Brickley & Zimmerman, 2010, p. 236).

According to Hart (1995), corporate governance issues arise under two situations. Firstly, in the presence of conflict of interest/ agency issues. Secondly, when contracts are not comprehensive and fail to deal with such agency issues owing to transaction costs. The divergent viewpoints on what CG is has led to the development of different theories on corporate governance, which are discussed in greater detail in the subsequent sections.

2.1.1 Corporate governance – theoretical frameworks

The divergence in definitions of corporate governance can be traced back to various theoretical frameworks. These frameworks are discussed below.

Agency theory

Agency theory postulates that governance is needed in any situation where a 'principal' (an owner of an asset) delegates use of the asset to an 'agent', whose performance cannot be completely observed by the principal (Buchanan et al., 2014). Agency theory uses the term 'contract' to define this relationship between the agent and the principal (Eisenhardt, 1989).

According to Jensen and Meckling (1976), agency theory demonstrates the principal-agent relationship that exists between the shareholders (principals) and the management (agent). The shareholders appoint the management and entrust it with the task of running the business. However, the management may become opportunistic and pursue its own self-interest, which may conflict with the interest of the shareholders, thereby creating the agency conflict/problem (Albrecht et al., 2004). Thus, the basic premise of agency theory is that there exists an inherent conflict between the interests of the management and the interests of the owners (Kiel & Nicholson, 2003). The theory is concerned with aligning of these conflicting interests and is based on the premise that managers/agents, on account of their superior expertise and knowledge, pursue self-serving behaviour to advance their interests as opposed to the interests of the shareholders/principals. The implication of this theory for corporate governance is that it necessitates institution of monitoring mechanisms to safeguard shareholders' interests (Nicholson & Kiel, 2007).

In similar vein, Shapiro (2005), argues that the agency theory directs the bridging of information asymmetry between the principals and the agents by institution of appropriate monitoring mechanisms. The theory also seeks alignment of divergent interests of agents and the principals by instituting appropriate incentives and compensation.

Eisenhardt (1989) claims that, agency theory can be used to resolve two issues that are encountered in agency relationships viz. (a) divergence in objectives/goals of agents and principals along with the issue of high costs related to verification of the behaviour of agents; and (b) sharing of risk between agents and principals who may have different attitudes towards risk. The former ('a') is the positivist approach, which seeks to devise governance methods to restrict the self-serving conduct of the agents and to align the goals of the agents and the principals. Contracts based on outcome, and reduction of information asymmetry between the agents and the principals, are two mechanisms for reducing the agency problem under this approach. The latter ('b') forms the core of the principal-agent approach.

With respect to the positivist approach, Fama and Jensen (1983) studied the role of adequate information in controlling self-serving conduct, whereas Jensen and Meckling (1976) explored the use of stock ownership as a mechanism to align the divergent interests of owners and managers.

On the principal-agent front, behaviour-based contracts can be used as they do not transfer the risk on to the agent, who is considered to be risk-averse. Further, to control agency problems with respect to moral hazards (agent not putting in the right effort) and adverse selection (the agent not having the skills that it proclaimed to have at the time of being hired), information systems such as budgeting and reporting can be used (Eisenhardt, 1989).

Theoretical contributions of agency theory have been well established. This theory has provided a conceptual framework for research on varied topics including efficacy of internal governance in terms of BoD independence, BoD size, BoD competence, managerial ownership, institutional ownership (Acharya et al., 2011; Tosun & Senbet, 2019; Wu, 2008; Filatotchev & Wright, 2011); moral hazard and adverse selection due to information asymmetry between agents and principals and their mitigation through compensation (Armstrong et al., 2010b); external governance such as rating agencies, disclosures, market for corporate control (Chen et al., 2015; Katmon & Farooque, 2017), institutional ownership (Chang et al., 2016; Sharma, 2004), misstatements, earnings management, and fraud (Jiraporn et al., 2008; Efendi et al., 2007; Chen et al., 2016); and takeovers (Chatterjee et al., 2003; Shleifer & Vishny, 1991). Somomon et al. (2021) apply the agency framework to entrepreneurship and conclude that interaction between social spending and market freedom spur entrepreneurship. Fayezi et al. (2012) contend that the agency theory can be and has been applied to diverse settings in case of supply chain management.

However, the agency theory has also been criticised for failure to find concrete support for the agency construct of relationship between pay and performance (Jensen & Murphy, 1990, Roberts, 2010, Tosi, et al., 2000).

The present research is concerned with the agency problems between directors (as agents) and shareholders (as principals). It examines the efficacy of directors' compensation in aligning the divergent of interests the directors and

shareholders. In doing so, this study takes a 'positivist' approach to agency theory (Eisenhardt, 1989; Pepper & Gore, 2015).

Stakeholder theory (SHT)

Freeman and Reed (1983) propound the stakeholder theory and argue that the term 'stakeholder' should be used in a wider sense (to include any individual or identifiable group which can affect the attainment of an organisation's objectives) to understand its implication for corporate governance. SHT provides a context for the development and analysis of policy alternatives to balance the interests of all participants.

Freeman (2010, p. 25) provides the stakeholder view of the firm and states that this view 'takes into account all of those groups and individuals that can affect, or are affected by, the accomplishment of organizational purpose. Each of these groups plays a vital role in the success of the business enterprise in today's environment. Each of these groups has a stake in the modern corporation, hence, the term, "stakeholder", and "the stakeholder model or framework"... each category of stakeholder groups can be broken down into several useful smaller categories'. According to Freeman, the key stakeholder groups for a corporation include competitors, consumer advocates, customers, employees, environmentalists, governments, local community organisations, media, owners, special interest groups, and suppliers. Similarly, John and Senbet (1998) state that the stakeholders in a corporation include creditors, consumers, employees, equity holders, the government, and the suppliers or other claimants who supply capital. Further, corporations cannot formulate organisational objectives for their continued survival unless the concerns and needs of all stakeholder groups are understood (Freeman, 2010).

Thus, SHT suggests that a business owes duties to various stakeholder groups. Hence, in case of a conflict of interest between the interests of different stakeholders, interests of some stakeholders have to be compromised to meet the basic commitments to others. From a governance perspective, the theory deals with how different stakeholders should oversee the management to protect their interests (Heath & Norman, 2004).

Kaufman and Englander (2011, p. 421) focus on the role of directors in managing stakeholders and contend that the BoD 'has the legal authority to distinguish among these stakeholder groups and to distribute rights and obligations among these stakeholder groups'.

SHT has been increasingly applied to the field of corporate social responsibility (CSR). Research by Abreu, David, and Crowther (2005); Longo, Mura, and Bonoli (2005); and Uhlener van Goor-Balk and Masurel (2004) employs the stakeholder approach to examine CSR. Dmytriyev, Freeman, and Hörisch (2021, p. 1442), argue that SHT and CSR 'provide major theoretical frameworks that confront the shareholder-primacy view that inhibits managers' attention to social issues'. O'Riordan and Fairbrass (2008) propose a model which provides

a comprehensive approach to decision-making with respect to CSR and to stakeholder dialogue aimed at enabling the managers to meet the CSR expectations of their stakeholders. Ayuso et al. (2014) study two dimensions of the stakeholder perspective, namely CSR at board level and stakeholder engagement. They conclude that dealing with CSR issues at the BoD level results in positive association/engagement with various stakeholders, which translates into better results for the corporation. However, Heath and Norman (2004) argue that the stakeholder perspective which considers shareholders as 'just another stakeholder' should be viewed with caution as shareholders have incentives to act as watchdogs over the managers. Further, in a stakeholder governance system, profit-consuming CSR strategies are likely to be abused by managers who may be motivated to promote their self-interest as opposed to acting in the interest of the stakeholders. The stakeholder theory perspective has also been criticised for having failed to provide a practical and viable alternative to the shareholder perspective (focused at safeguarding shareholders' interests), which has flourished even in stakeholder-oriented nations such as Japan, Germany and Korea (Hendry, 2001).

This study adopts the stakeholders' view to corporate governance as it is concerned with financial statement fraud which is argued to have adverse consequences for all stakeholders of a firm.

Stewardship theory

Derived from sociology and psychology, this theory views managers as stewards of their employers, who act in the best interest of the shareholders. The theory proposes that the managers will choose the interest of the shareholders over self-interest, despite personal motivations. According to the theory, stewards derive satisfaction from excelling in their work and fulfilling their duties even when these duties conflict with their personal interests. Therefore, this theory seeks to enable managers rather than to control them. Thus, this theory is based on two premises. Firstly, that the managers/agents are trustworthy. Secondly, that agency costs will be minimal as management will not undertake self-serving behaviour as they are concerned about losing their reputation (Nicholson & Kiel, 2007).

Further, as opposed to the agency theory, this theory does not view the motivations of the stewards with scepticism and thus the duality of role, with one person acting both as the CEO and as chairman of the BoD, is acceptable (Albrecht et al., 2004). In a similar vein, Davis et al. (1997, p. 24) argue that stewardship theory is based on collectivistic behaviours which are pro-organisation and hence have higher utility as compared to self-serving individualistic behaviours. Thus, even when the interests of the principal and the steward are divergent, 'the steward places higher value on cooperation than defection'. Thus, in contrast to the agency theory, the proponents of stewardship theory recommend the BoD comprising majorly of inside directors and CEO duality (same individual acting as the CEO and as the chair of the BoD)

(Kiel & Nicholson, 2003). Sundaramurthy and Lewis (2003, p. 398) contend that stewardship theory 'stresses managers' tendencies to be collectively oriented and intrinsically motivated'. Schillemans and Bjurstrøm (2020, p. 651) are of the view that stewardship theory 'assumes unselfish behaviors from stewards involved in the same supra-individual cause as their principals'. Thus, this theory contrasts with and provides an alternative approach to the agency theory.

Stewardship theory has been applied to various fields. For instance, Snippert, et al. (2015) apply the theory to infrastructure services and advocate stewardship relation between Dutch Highways Agency (client) and the vendor. On the other hand, Mills, et al. (2021) argue that stewardship behaviour is essential for service delivery by organisations in urban water services. Song, et al. (2017) conclude that in conformance with the stewardship theory, inside directors are instrumental in better long-term/market-based performance of restaurants firms in the US. Alternatively, Eddleston and Kellermanns (2007) apply the stewardship theory framework to the effect of family relationships on the performance of family-run firms and conclude that participative strategy processes and altruism have a positive impact on performance. On the other hand, Dicke (2002) contends that stewardship-theory-based methods can help fill some accountability gaps in contracted human services. Similarly, Rouault and Albertini (2022) promote stewardship theory to enhance accountability in the case of non-profit organisations.

This study doesn't concur with the stewardship view of corporate governance and contends that the directors may place their self-interest above the interests of the firm/stakeholders of the firm.

Power perspective theory

This theory is concerned with the conflicts that may exist between three parties, namely the top management, the BoD, and the shareholders. Theoretically, the directors are the most powerful in a corporation, however the CEOs can command more power owing to several factors. For instance, CEOs' greater involvement in the day-to-day affairs of the company can lead them to exercise greater influence over the BoD (Albrecht et al., 2004; Daily et al., 2003).

The relationship between the CEO and the BoD has been viewed from several perspectives. For instance, Shivdasani and Yermack (1999) provide evidence of CEOs involvement in director appointment. According to them, powerful CEOs may use director selection process, by appointing gray outside directors, as a mechanism to reduce aggressive monitoring by the BoD. Daily and Johnson (1997) argue that the CEOs may influence the BoD and use structural power to control the information that the BoD receives. Alternatively, Finkelstein and Daveni (1994) contend that CEO duality and BoD vigilance are positively related. However, when the CEO has high informal power, then the BoD seeks

to avoid CEO duality. Wang, et al. (2019) in a meta-analysis suggest that BoD characteristics (such as BoD independence, stock-ownership) and the country of origin determine the appropriateness of CEO duality. Less independent boards prefer separation of the position of the CEO and chair of the board whereas independent boards are more confident of their monitoring effectiveness and hence may prefer CEO duality. Similarly, countries with low managerial discretion (e.g. Japan) are more likely to implement policies restricting CEO duality. However, in case of countries with high managerial discretion, it is vital to consider how to enhance the benefits of CEO duality and to restrict the costs associated with it as in such countries other checks on the CEOs may be put in place.

This theory has affected the present research in that CEO duality is considered as a control variable as CEO duality may be one of the factors that can affect the likelihood of financial statement fraud.

Resource dependence theory

The resource dependence theory is based on the premise that external resources such as capital investment, labour skills, and raw materials determine the behaviour and performance of a corporation (Marashdeh et al., 2021). Further, according to this theory, the BoD, rather than being a controlling body, is a provider of access to resources for the CEO of a corporation (Albrecht et al., 2004). According to Nicholson and Kiel (2007), and Kiel and Nicholson (2003) the central premise of the resource theory is that the board of directors (BoD) serves as the fundamental link between a firm and the resources required by the firm to maximise its performance. Further, a BoD that is well connected with the external environment is expected to have higher access to the requisite resources.

However, this theory has been criticised due to its focus on only the external environment, as it fails to take a holistic view of the value addition of the BoD, as the value brought in/added by it also includes activities such as monitoring, giving advice, and strategy formulation (Kiel & Nicholson, 2003).

With respect to the present research, resource dependence view of corporate governance is not relevant as the research topic is concerned with the agency issue that might be present between the directors and the shareholders.

Institutional Theory

Meyer and Rowan (1977) presented the first work on institutional theory. According to them, institutional rules affect organisational structures. Further, these rules 'function as myths which organizations incorporate, gaining legitimacy, resources, stability, and enhanced survival prospect' (Meyer & Rowan, 1977, p.340).

According to O'Connell, et al. (2005) institutional theory maintains that the attitude prevailing in the society coupled with the views of its vital constituents influence many aspects of procedures, policies, and organisation structures. On the other hand, DiMaggio and Powell (1983) contend that institutional isomorphism is the reason for organisations becoming exceedingly similar. Thereby, implying that formal organisational structures may be unrelated to operating efficiency (Tolbert, et al. 2011).

On the corporate governance front, Aguilera, et al. (2018) draw upon the institutional theory and conclude that a firm may deviate from the corporate governance logic prevailing in the nation (by under or over conformity with the prevailing governance practices) owing to the entrepreneurial identity of the firm. Entrepreneurial identity generates governance discretion within a firm resulting in deviance. Thus, the research explains why, despite being in the same institutional framework, firms differ in their conformity to the national governance logic.

In another research, Krenn (2016), drawing upon the institutional theory argue that a firm's corporate governance is based on three institution pillars namely coercive, mimetic, and normative. The coercive or regulatory pillar represents the constraining aspect of institutions which results in conformance due to politics, power, or resource dependence. The mimetic pillar is concerned with cultural-cognitive patterns wherein firms imitate peers or rely on routines whereas the normative pillar is concerned with obligatory or prescriptive aspect of institutions wherein conformance is done to fulfil moral obligations as in case of membership of professional or trade networks.

Bueno-Garcia, et al. (2021) apply the institutional theory framework to shareholder ownership (a corporate governance variable) and argue that foreign shareholders are more likely to change existing environmental/green practices as opposed to domestic shareholders who are more likely to accept the prevailing practices. Thus, their results confirm that deinstitutionalization from foreign shareholders is more powerful than defensive institutionalism by domestic shareholders.

From the perspective of the present research, the institutional theory is of relevance as this research seeks to compare the US and China which are embedded in very different institutional settings.

Despite the different frameworks with respect to theories on corporate governance, Kiel and Nicholson (2003) conclude that no single theory can completely explain the effect of corporate governance on company performance. Rather, elements of each theory play an additive role. For instance, agency issues need to be paid attention to and this is likely to happen when outside directors are on board. On the other hand, the market rewards the knowledge that the inside directors bring with them, which is in line with the stewardship theory. Further, an appropriate mix of skills determines the value added by the BoD. Jackling and Johl (2009, p. 492) use the resource dependency theory to examine the linkages between corporations and the

resources which are needed to maximise performance. They find that large boards positively impact firm performance, implying 'that greater exposure to the external environment improves access to various resources and thus positively impacts on performance'. According to Al-Shaer and Zaman (2018, p. 983), resource dependency theory plays an important part in explaining the role of the BoD and its committees in achieving sustainability. They conclude that audit committees 'add credibility to sustainability reporting'.

2.2 Corporate governance systems

2.2.1 Approaches to corporate governance

Based on the foregoing discussion, it is evident that there are two broad approaches to corporate governance. The first one deals with the agency problems between the financiers of firms (i.e. shareholders and banks), called the 'principals', and their agents, called the 'managers'. The prime objective of governance under this system is the maximisation of shareholder wealth/return to investors. Management pursues the short-term objective of returns maximisation along with ensuring liquidity in the capital market. Corporate control (to monitor and discipline managers) is exerted externally in the form of arm's-length control, which is also associated with widespread stock ownership. Further, control is exercised, indirectly, through threat of takeover and the market for corporate control. This is referred to as the '**shareholder approach**' (Lane, 2003; Vilanova, 2007).

The second approach deals with the sharing of risk and return between the various 'stakeholders' in a firm, wherein the prominent stakeholders are shareholders, employees, and managers. Control is exercised internally by shareholders holding a significant portion of the firm's equity. Legal rights of appointment and dismissal along with board membership are used to exercise control directly and actively. Management goals under this approach are related to growth, stability, and long-term returns to key owners. This is referred to as the '**stakeholder approach**' (Lane, 2003; Vilanova, 2007).

2.2.2 Corporate governance systems

The developed Western world has two main corporate governance models. The first is the **Continental system**, which has two sub-systems – the Latin system (followed by Belgium, France, Italy, and Spain) and the Germanic system (followed by Austria, Denmark, Finland, Germany, Norway, Netherlands, Switzerland, and Sweden), and the second is the **Anglo-American system** (followed by Australia, Canada, the UK, and the US). In the eastern part of the world, the Japanese governance model is amongst the most significant. Further, this model is a mix of the Anglo-American and the Continental model.

The Anglo-American system, which is based on the tenets of common law, is characterised by flexibility in legislation, liquid capital markets, and wide ownership. It also combines elements of dispersed ownership and investors' legal protection in the corporate governance regime. The investors can sue the directors in case of breach of fiduciary duties by the latter. Further, management compensation is characterised by bonus plans and stock options aimed at aligning the interests of the owners and the managers (García-Sánchez et al., 2015).

The Germanic system, on the other hand, is derived from code law. In this system, the government plays a dominant role in social and economic decisions. It is also characterised by stronger creditor rights, weaker shareholder rights, and the presence of large shareholders and large banks. However, the participation of smaller investors is low (García-Sánchez et al., 2015).

The Latin model falls between the Anglo-American and German models but is more influenced by the German model. Under this system, greater influence is exercised by the shareholders as compared to the German model. Both German and Latin models have a high level of ownership concentration and have preference for long-term and stable relationships with stakeholders. In addition, performance-based compensation is not widely used under these models (García-Sánchez et al., 2015).

The Japanese model also falls in between the German and the Anglo-American models in terms of creditor and shareholder rights. It is characterised by the presence of powerful shareholders and banks, though both command less power in comparison to their counterparts in Germany. Also, the participation of small investors is high in Japan (Shleifer and Vishny, 1997).

According to Enriques and Volpin (2007), the corporate governance problem in the US is concerned with the conflict of interest between the controlling managers and small shareholders (who are dispersed). However, in case of most of the rest of the world, the conflict is between a dominant shareholder (family or an individual) controlling majority of the votes and minority shareholders. According to La Porta, et al. (1999, p. 473), the controlling shareholder manages to control despite owning a smaller fraction of cash flow rights by employing tools such as 'cross-shareholdings, differential voting rights, and pyramids'.

The Anglo-American model follows the 'shareholder approach' to corporate governance, whereas the German and Japanese models are more bent towards the 'stakeholder approach'.

These models are discussed in greater detail below.

Anglo-American corporate governance system

According to Cernat (2004), the Anglo-American model is based on the corporate concept of a fiduciary relationship between managers and owners/shareholders. Engrained in market capitalism, this system believes that decentralised markets and self-interest can work together in a balanced manner and can self-regulate each other. Thus, the institutions pursue profits and individuals pursue material success. The effectiveness of institutions is sought to be maximised by combining profit-oriented behaviour with individualism.

Ahmad and Omar (2016) provide more understanding of the Anglo-American model and state that in terms of its theoretical underpinnings, it draws from shareholder perspective. The theory postulates that corporate managers are responsible for maximising shareholders' wealth as it is the shareholders who bear the highest level of risk. Further, the BoD under the Anglo-American model tends to be single tiered with the presence of both executive and non-executive directors. Also, the relationship between the BoD and shareholders tends to be on an arms-length basis.

With respect to capital, the Anglo-American model is marked by dispersed equity shareholding along with delegation of corporate responsibilities to the management, which is governed by the BoD (Cernat, 2004). The BoD is in turn monitored, externally, by the shareholders. Thus, the Anglo-American model is called the 'stockholder model', wherein the stockholders exercise external control over the firm. However, the influence of shareholders on the management is weak owing to the dispersed shareholding and this makes it imperative for this corporate governance system to be supported by a well-functioning and deep stock market as the stock market, along with legal infrastructure, offers protection to the shareholders. The objective that the firms pursue, under this model, is the maximisation of shareholder wealth. The barometer to gauge firm performance is 'market value'. However, this focus on shareholder wealth leads to profit-oriented behaviour with a short-term perspective (Cernat, 2004; Chhillar & Lellapalli, 2015).

On the labour front, according to Cernat (2004), the Anglo-American model is marked by a low level of unionisation. Compensation is linked to performance, along with employee stock options (ESOPs) being widely used. Further, labour generally doesn't participate in the strategic decision-making process. Corporate decision-making involves the shareholders acting through the BoD and the management. Also, the agency problem is dealt with through internal governance mechanisms via the BoD, and the BoD is considered to be the most vital governance mechanism (Chhillar & Lellapalli, 2015).

This model is prevalent in the US and UK, and this can be explained by some common features shared by these two countries. Both the US and UK are marked by well-developed stock markets, dispersed equity holdings, English common-law-based legal codes, and arm's length control of corporations (Siepel & Nightingale, 2014; Adegbite, Shrives and Nichol, 2011).

Other noticeably important corporate governance models are that of Germany and Japan. According to Brickley et al. (2021), German and Japanese governance models differ from that of the American model in that the prime focus of German and Japanese firms is not shareholder wealth maximisation rather they pay attention to the larger set of stakeholders such as affiliated companies, banks, community at large, employees, and shareholders. These models are discussed in greater detail below.

German/Continental corporate governance system

The German CG system is embedded in the stakeholder theory of the firm. The model considers the interests and welfare of all key stakeholders in a firm, including the shareholders, employees, suppliers, creditors, and the society at large. Thus, unlike the Anglo-American model, the focus is not singularly on shareholder wealth maximisation but on the benefits and costs that the society accrues due to a corporation's operations, implying a focus on stakeholder value maximisation (Chhillar & Lellapalli, 2015). The genesis of the stakeholder approach can be traced back to the history of the development of company law in Germany. The early stages of this development were marked by an element of distrust in legal persons and in the concept of limited liability. This distrust led to an overarching concern for the protection of the interests of the creditors and shareholders, which is also reflected in the CG system in Germany (Hutter et al., 2002).

According to Goergen et al. (2008), under the German model, to deal with the issues with respect to agency between owners and managers, multiple mechanisms (both internal and external) are available. Internal mechanisms include the BoD, and the control/ownership structure, whereas the external mechanisms include product/market competition, laws and regulations, market for corporate control, and creditor monitoring.

With respect to capital/ownership, corporations under this model are characterised by large block shareholding by institutions (which may include banks, financial institutions) or by the public. Banks and large shareholders tend to play an important role in financing and governance. Banks, offering substantial debt to a corporation, may have their representatives on its supervisory board. Also, banks play a vital role in fundraising and offer a secure environment to corporations, thereby making themselves an attractive avenue for fundraising compared to stock markets. The significance of banks as inside controllers also stems from the fact that banks can cast proxy votes on behalf of small shareholders. This is because most shares are in the form of bearer shares, which are deposited by the shareholders with the banks (Cernat, 2004; Goergen et al., 2008; Lane, 2003).

The largest shareholder may command as high as 50% of the voting rights, implying that control is highly concentrated. Typically, key shareholders include (a) banks and other institutional investors, (b) families and individuals, (c) holding and industrial companies, and (d) public authorities (Goergen et al., 2008). Further, less liquid stock markets make it imperative for the

shareholders to monitor the managers and to voice their opinion with respect to the working of the corporation (Cernat, 2004; Goergen et al., 2008).

With respect to the BoD structure, the German model is characterised by a two-tier board system comprising the supervisory board (**SB**) and the executive/management board (**MB**) of directors (Chhillar & Lellapalli, 2015; Brickley et al., 2021). In layman terms, the SB is the equivalent of the BoD for American companies whereas the MB is the equivalent of the top management for US companies (Tuschke & Sanders, 2003). This system is based on the philosophy of 'co-determination', which entails mandatory participation by employees in the decision-making process (Lane, 2003; Von Rosen, 2007). The SB's chairman is appointed by the shareholders, and it also has representation from employees through the trade unions or work councils (Schilling, 2001). The functions of the SB are to appoint or revoke the appointment of the members of the MB and to supervise and control the management of the corporation via the MB (Hutter et al., 2002; Schilling, 2001). The MB is responsible for managing the business of the corporation and for strategic and operational decision-making (Schilling, 2001; Tuschke & Sanders, 2003). Though the MB is not liable to take any instruction from any other body including the SB or the majority shareholders with respect to its management responsibilities and power (Schilling, 2001), it reports to the SB (Tuschke & Sanders, 2003). Also, there is no overlap between the two boards in terms of their members (Chhillar & Lellapalli, 2015). Further, the MB must always act in the interest of the corporation. This is a departure from the Anglo-American model wherein the interests of the shareholders are of prime importance (Schilling, 2001).

Turnover of the CEO and that of the members of the SB may be used as governance mechanisms for disciplining top management. Another tool for governance is compensation. In terms of compensation structure, basic compensation dominates the total pay. However, there is a move towards adopting higher variable pay. Further, managerial pay tends to be linked to corporate performance. In contrast to the Anglo-American model, under the German model CEOs tend to be marked by lower pay packages, higher basic compensation (i.e. excluding variable components such as benefits, perquisites and variable pay) and less usage of option/equity-based compensation in managerial pay. Cash compensation is generally on the higher side whereas non-cash compensation is on the lower side compared to other countries in Europe (Chhillar & Lellapalli, 2015; Goergen et al., 2008).

According to Goergen et al. (2008), with respect to credit monitoring, large creditors have several control rights which enable them to monitor firms. Large creditors, especially banks that act both as debt providers and as shareholders, play a key role in monitoring and governance of German corporations. Further, being present on the SB of the corporations, banks have access to valuable and privileged information. Access to such information coupled with the long-term lending relationships confer considerable power on the banks.

Market for corporate control or hostile takeovers is limited in Germany. The chief reasons for this are the presence of large controlling shareholders; cross-shareholdings; presence of take-over codes and legislations which act as barriers to take-overs; and a legal and regulatory framework that is still lagging in matters concerning shareholder protection, transparency, and disclosure (Cernat, 2004; Lane, 2003; Goergen et al., 2008).

There is a lack of product market competition, which has a negative effect on productivity growth. However, the control exercised by banks on corporations, under the German governance model, tends to weaken this negative effect (Goergen et al., 2008; Kke & Renneboog, 2005).

On the labour front, this model is characterised by the presence of institutionalised and well-established labour unions. Also, the occupational labour market plays a dominant role. Further, in contrast to the Anglo-American model, trade unions/work councils are consulted before any important strategic decisions are made (Cernat, 2004; Kubo, 2005).

Given the pressure that managers face on account of being accountable to a wide variety of stakeholders (including shareholders, banks, employees, and the local community), decision-making is consensus-oriented, and the top management has less autonomy. Further, since managers are promoted to top-level positions from within the internal labour market, they pursue goals that are oriented towards long-term returns, firm stability, and market growth (Schilling, 2001; Lane, 2003).

Furthermore, the firms aim to seek high long-term profits as opposed to the focus on short-term shareholder wealth maximisation under the Anglo-American model (Cernat, 2004; Goergen et al., 2008).

Japanese governance system

In Japan corporate governance is rooted in Confucianism and hence relies on implicit contracts, relationship orientation, and trust. This system is characterised by close relationships between banks/financial institutions and corporations (as in the case of the German model), cross shareholdings, reciprocity between equity ownership and trading agreements, and managerial incentives aligned to the achievement of sustainable growth. The corporations develop long-standing relationships with all the stakeholders including banks, customers, suppliers, and sub-contractors. These long-standing relationships result in business alliances or '*Keiretsu*', which are clusters/networks of companies connected by informal and formal financial and commercial commitments. These clusters are bound together by product market exchanges, interlocking directorates, cross-share ownership, and other linkages that facilitate information exchange and enhance group identity. Hence, *Keiretsu* essentially represents a group of companies with cross-holding structures wherein each company in the group owns shareholding in every other company in the group. A key advantage of such a structure is that it makes

companies less amenable to hostile take-overs. Further, insurance companies and banks tend to hold significant shareholdings and exercise control over the internal management of corporations because of the provisioning of funds (both debt and equity) and the rendering of monitoring and advisory services to corporations during financial distress (Bostock & Stoney, 1997; Luo et al., 2008).

However, the Japanese CG system underwent a change following the deregulation of its financial systems. The corporate ownership structures changed as crossholdings were sold and foreign ownerships increased around the beginning of the 21st century. This led to the introduction of 'market orientation' into the Japanese model, culminating in the adoption of an additional system called the 'firms with committees', with three committees – one each for compensation, audit, and nomination. This system is based on the idea of legal separation between executive and monitoring functions. Further, the BoD is responsible for the appointment of executive officers who would undertake management decisions (Sakawa et al., 2012).

Japan has adopted a 'comply or explain' approach to CG (OECD, 2019). The prevailing code of CG in Japan emphasises respecting the positions and rights of all stakeholders. Further, it recommends that corporations should disclose and annually review their crossholdings as well as BoD policies with respect to the determination of directors' and senior managers' compensation. The code also recommends the appointment of at least two independent directors on the BoD. Further, the code recommends that 'The board should design management remuneration systems such that they operate as a healthy incentive to generate sustainable growth, and determine actual remuneration amounts appropriately through objective and transparent procedures. The proportion of management remuneration linked to mid- to long-term results and the balance of cash and stock should be set appropriately' (Japan's corporate governance code, 2018, p. 18).

From the above discussion, it is evident that despite the significance of corporate governance as a controlling mechanism, a single set of strictly defined governance mechanisms is not likely to work in all situations. This is because corporate governance has nuances specific to each country. For this reason, China doesn't strictly fit into any of the corporate governance models discussed above. This is further illustrated by the fact that though China has adopted the German dual board structure but it still holds the 'shareholder supremacy' rather than focus on all stakeholders as in the German corporate governance model. Further, the agency issues in China relate to majority and minority shareholders owing to presence of concentrated ownership (Yu, Zhang, & Zheng, 2015) as opposed to agency issues between management and shareholders as are generally observed.

The section below discusses how culture impacts corporate governance.

2.2.3 Corporate governance - cultural nuances

According to Doidge et al. (2007), country characteristics in terms of the level of financial and economic development and its openness have a significant bearing on corporate governance apart from investor protection provided by the state.

Davis and Mizruchi (1999, p. 237) argue that 'A national economy's system of financial intermediation defines the characteristic problems of corporate governance and generates a social structure by which the institutions of governance evolve'. For instance, in credit-based systems, as observed in Germany/Japan, banks occupy the centre stage and form the core of densely connected business groups. In contrast, capital-market-based systems (as in the US) are atomised and lack such central actors. Consequently, the US has developed a decentralised, managerialist model of governance. Similarly, Aguilera and Jackson (2003) attribute the differences in corporate governance across nations to the differences in the development of financial institutions across countries. For instance, the US has widespread dispersion in equity ownership, which is due to the development of a welfare state wherein the pension regime preferred greater market liquidity. Further, inter-firm co-operation in the US was restricted due to anti-trust laws which encouraged large-scale mergers leading to further dilution in equity. In contrast, Germany and Italy continued to have concentrated ownership due to the availability of bank finance, existence of co-operative networks that blocked rapid dilution, and favourable property rights for block holders.

Gilson and Roe (1993) add to the above assertion and state that apart from financial intermediation and separation of ownership and control, the corporate governance of a country is also influenced by product market competition.

Armitage et al. (2017, p. 148) bring to the fore the differences in CG practices among developed and emerging economies. They argue that governance mechanisms are embedded in a nation's business system and are influenced by its legal, political, and social institutions. Further, the governance problems of the developed world emanate from "dispersed ownership, small managerial shareholdings, prevalence of standalone companies, and market-based transactions. However, emerging economies are characterised by concentrated ownership, pyramidal ownership structures, dominance of business groups, and high levels of related-party transactions. As a consequence, principal-principal conflicts are a major concern of corporate governance in developing countries". This further implies that the governance solutions vary across countries and one solution may not work for all.

Dore (2005) supports this view and states that the difference in national value systems determines whether nations adopt the shareholder value prescription or the stakeholder value prescription to corporate governance. Similarly, the solution to the agency problem (a solution essentially is one that ensures that the managers/agents are honest and dynamic), can be achieved by using

different institutions in different societies depending upon the availability of motivational resource. For instance, in a society like the United States, personal material gain, reflected in fat salary packages, is a key motivator and commands immense admiration and prestige, whereas in Japan prestige is attached to the title of the role itself.

In a similar vein, Rubach and Sebor (1998, p. 168) state that 'Each country's model or system has developed based on its particular cultural, historical, and technological influences. The differences in corporate governance systems reflect the paths by which each came to exist. These paths varied because the systems began in different times and places and because each reflects the sum of the particular decisions made in response to particular national, social, and economic conditions. No corporate governance model is ideal, or even best. The fact that each persists suggests that each is efficient in its own way, and the governance structure of one country is not easily transportable to another'. Similar views have been presented by Zalewska (2014), who contends that diversity in CG stems from the differences in culture, moral and religious beliefs, organisational forms, and legal and political systems. For instance, in the case of countries where organisations assume the form of 'control by one and ownership by millions', the focus of corporate governance is on assuring a return on the investments made by the suppliers of finance by managing the relationship between the management and the shareholders. However, in countries where shareholders are regarded as just one of the stakeholders, this approach would not be appropriate. In such countries, good corporate governance would entail value creation for all stakeholders and for the social market economy. Further, country-specific differences are also evident in the manner of adoption of the corporate governance code by firms. For instance, in the UK, the adoption of corporate governance code works on the principle of 'comply and explain' whereas in the US, corporate governance practices are enforced by law and any non-compliance is subject to penalties (Zalewska, 2014).

China and US also present a unique case to study how difference in culture affects corporate governance mechanisms. The differences in the culture of China and the US has also permeated the corporate governance of these two nations. For instance: China has a collectivist culture whereas US is marked by individualism (Hofstede Insights, 2021). The effect of this cultural attribute on the corporate governance philosophy is that China, though follows shareholders' primacy but it also considers interests of other stakeholders whereas the US focuses primarily on the shareholder perspective. In US the objective of governance is maximisation of shareholder wealth/return to investors whereas in China the focus is on returns to key stakeholders. According to Clarke (2003) corporate governance in China seeks to regulate the relationships between all interested parties in a corporation with shareholders being recognised as a particularly important group. This difference in governance philosophy is further reflected in the difference in structure of the boards in the two countries. China has a dual board structure with the supervisory board and the management board wherein the supervisory board

has representatives from both the shareholders and the employees. In contrast, US has only a single board of directors (who represent the shareholders) and there is no representation from employees on the board.

Another cultural difference is with respect to uncertainty avoidance. US has a higher score implying that as compared to China, in the US there is discomfort with ambiguity and uncertainty whereas structure and clarity are preferred (Griffin, et al., 2017). This cultural characteristic is evident in the corporate governance codes of the two countries. According to Jiang and Kim (2015), the Chinese code of corporate governance provides only guiding principles and not explicit regulations. In contrast, in the US, the New York Stock Exchange (NYSE) has stipulated a set of corporate governance rules which are mandatory to comply with (Calder, 2008).

China represents a unique case of culture (collectivist, high power distance, low uncertainty avoidance) and political (communism) mix which is different from the culture and political mix of the US, Germany, and Japan. Thus, the corporate governance of China, doesn't strictly fit into any of the models discussed in section 2.2.2 above. This necessitates a separate discussion on corporate governance in China. The next section examines the Chinese and the US governance models in greater detail.

2.2.4 Chinese corporate governance model

Up to 1978 most of the corporates in China were state owned and governance was collective. The promulgation of company law in 1993 laid down the foundation for establishment of corporate governance in China (Kawamura, 2015).

Chinese corporate governance reforms picked up steam in 2001, when China joined the World Trade Organization (WTO) and committed itself to adopting the OECD principles of CG (Chen, 2015). Securities law and company law were introduced in 2006, which provided further impetus to the development of the country's corporate governance framework (Chen, 2015).

The enforcement agencies in China with respect to corporate governance include 3 bodies namely China Securities Regulatory Committee (CSRC), stock exchanges, and government agencies (such as the Ministry of Commerce, the Ministry of Finance, the General Administration of Industry and Commerce, and the State-owned Assets Supervision and Administration Commission (SASAC)) (Kawamura, 2015).

The Chinese code of corporate governance provides only guiding principles and not explicit regulations (Jiang & Kim, 2015). In its spirit, corporate governance in China seeks to regulate the relationships between all interested parties in a corporation with shareholders being recognised as a particularly important group (Clarke, 2003).

A distinguishing aspect of the Chinese corporate governance system is the existence of a two-tier board structure which includes the board of directors (BoD) and the Supervisory Board (SB). The SB is required to have at least three supervisors and should include representatives of shareholders as well. However, at least one-third of the members of the SB must be employees of the corporation. The supervisors are responsible for evaluating and supervising the directors and senior managers as well as overseeing the financial affairs of the corporation. Further, they are permitted to participate, as non-voting participants, in the meetings of the directors (Jiang & Kim, 2015). Thus, the Chinese corporate governance system has features of both the German-style two-tier board and the US-style single board (Hass et al., 2016). This view is also supported by Chen (2015), according to whom the two-tier board system of China closely resembles the German model. Under the Chinese model, the SB is entrusted with the task of approving key business decisions and of overseeing the BoD, whereas the BoD makes decisions with respect to the day-to-day operations of the corporation. Despite the close resemblance to the German system, the SB of Chinese-listed companies does not function in the same spirit as the SB of German companies, as the Chinese SBs do not have the authority to either dismiss or select the members of the BoD or the management. Further, unlike Germany, in China the supervisory role of the SB is limited on account of the key role played by government appointees on the SB, lack of representation of institutional investors, and the absence of provisions for implementing the duties and powers of the SB. This view is supported by Kawamura (2015), according to whom the function and authority of SB in China continues to be weak.

According to the corporate governance code of China, the China Securities Regulatory Commission (CSRC) is responsible for regulating and supervising the corporate governance of listed companies. Jiang and Kim (2015) describe the CSRC as a government agency, akin to the Securities and Exchange Commission (SEC) of the US, which falls directly under the purview of the State Council of China (country's main administrative authority). One of the key functions of the CSRC is to investigate and penalise cases of violation of laws and regulations related to securities and futures.

Chinese corporate governance code (China, 2019) mandates that independent directors constitute the majority of the compensation and assessment committee, audit committee, and the nomination committee. Further, an accounting professional is required to be the convener of the audit committee. Regarding compensation of the directors and the supervisors, the same is fixed in general shareholders' meetings. Employee stock options and share-based incentives can be designed according to the Articles of Association (AoA) of the corporation, and the relevant rules and regulations. According to Jiang and Kim (2015), in China the independent directors are required to monitor large controlling shareholders on behalf of the minority shareholders and for this reason independent directors are neither permitted to be one of the top 10 shareholders of the corporation nor are they allowed to hold more than 1% of the shares of the listed corporation (directly or indirectly). Further, in China,

often the chairman of the BoD is the key person who actively runs and controls the corporation. This is in contrast with many developed economies where CEO duality is not encouraged/permitted. Chen (2015) provides support to the above view and contends that in China the chairman of the BoD tends to be the most important person with respect to all decisions of the corporation and even surpasses the CEO and other senior managers in the day-to-day management of the corporation. Further, the monitoring role of the BoD is a moot point, as it is generally dominated by representatives of government or party secretaries, or representatives of the parent company.

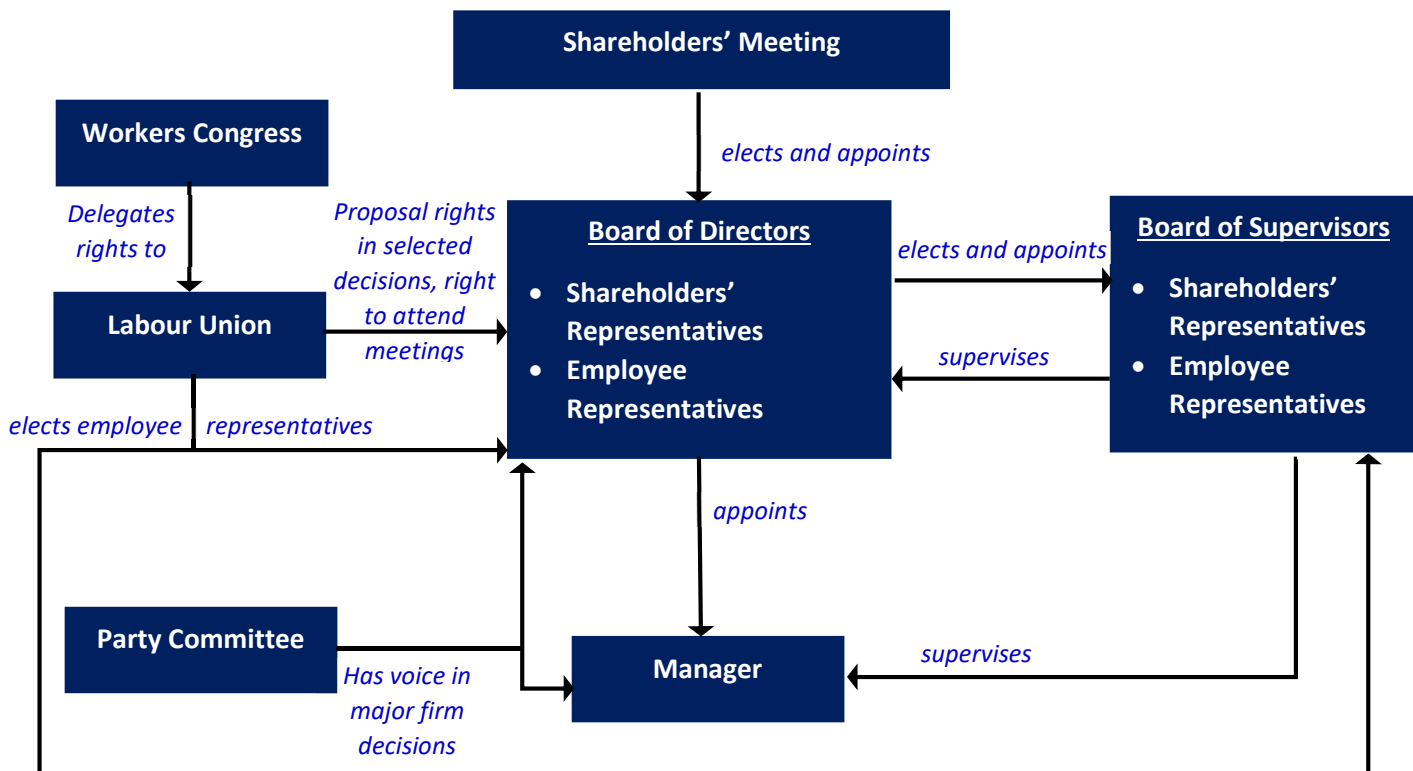
On the share ownership front, Chen (2015) argues that there are two kinds of conflicts of interest related to agency theory, first between the owners and the managers, and second between minority and majority shareholders. When ownership is widely spread the first conflict is prominent, whereas the second conflict is more prominent when ownership is concentrated. China, on account of the narrow spread of ownership of its corporations, suffers from the second agency malady. Haß et al. (2016) lend support to the above argument and contend that listed corporations in China are generally dominated by a single shareholder.

With respect to executive compensation, Yang and Yang (2009) report that executive compensation in China is affected by peer-group effects, which may be associated with factors such as faster growth, better performance, and state ownership. Further, peer effects are not likely to be affected by corporate governance. Chen et al. (2010), on the other hand, find that CEO duality facilitates the pushing up of their compensation levels by insider managers, thus providing evidence of managerial power theory. Further, internal CG mechanisms such as the presence of SB and BoD independence are ineffective in China's case due to factors such as limited market for corporate control, frail shareholder protection, and concentrated ownership by the State. Ye (2014) studied the causality between cash-based compensation for independent directors in China and earnings management. The results of this study found that high cash compensation for independent directors compromises their independence and makes them ineffective in performing the function of overseeing financial reporting whereas Alkebsee, et al. (2021) document a negative association between corporate fraud and independent directors' cash compensation. It may be noted that the use of stocks and options to compensate independent directors is not prevalent in China. This is based on a ruling by the CSRC. In 2005/2006, the CSRC allowed the introduction of equity incentives (stock options and restricted stocks) to the BoD (excluding independent directors), SB and the top management (Conyon & He, 2011).

As regards the State-Owned Enterprises (SOE) in China, a unique feature of the CG model of these enterprises is the presence of party committees (refer to **Figure 1**). Party committees represent political networks within a corporation that the state/government can mobilise to support its policy reforms and to provide timely information about all matters (Nee et al., 2007). Clarke (2003) lends support to this argument and states that the objective of

state/government intervention in corporations is to ensure their efficient running as well as maintaining control over sensitive industries, providing politically motivated job placements, and maintaining urban employment levels. However, Nee et al. (2007) conclude that the state/government intervention, through party committee, results in a negative effect on the overall decision-making within a corporation and on personnel and financial decisions.

Figure 1: Corporate governance mechanism in listed Chinese SOEs⁶, as per company law



Source: Nee et al. (2007, pp. 28)

Chen (2015) concludes his research by identifying key weaknesses with internal and external corporate governance mechanisms in China. As regards internal mechanisms, the key weaknesses are concentrated ownership structure (which gives rise to agency problems between majority and minority shareholders), weak SB (limited supervisory role resulting in little say in major corporate decisions), and lack of independence among the BoD. With respect to the external CG mechanisms, the key weaknesses include inefficient stock markets (resulting in insider trading), and weak law enforcement.

⁶ State-Owned Enterprises.

2.2.5 US corporate governance model

The US CG model is ingrained in the Anglo-American corporate governance system. According to Price et al. (2018) the US has adopted a statutory, rules-based approach to corporate governance. Consequently, the legal CG framework in the US relies upon laws, listing rules, and regulations (OECD, 2019).

Davis and Mizruchi (1999) argue that the American CG system is focused on minimising agency costs. In this capital-market-based model, corporations rely on equity issuance for capital, whereas short-term debt is provided by commercial banks implying that the US has a decentralised system of financial intermediation. This results in the development of a decentralised managerialist system of governance in the US.

In a similar vein, Gilson and Roe (1993) argue that the traditional CG system in the US is marked by separation of ownership and control, that is, “who will monitor management in light of dispersed shareholding” (p. 874). This separation is the result of the growing corporations’ need for specialised management and capital.

The key features of the US’s CG model include shareholder primacy, dispersed stock ownership, a flexible labour market, an active market for corporate control, and the importance of equity financing. In terms of stock ownership, institutional investors play a dominant role with money management firms and mutual funds being the largest institutional investors. Further, the position of the CEO and the chair of the BoD tends to be held by a single individual (Aguilera et al., 2006). This can be explained by the fact that the corporate governance guidelines in the US do not provide any specific recommendations with respect to separating the posts of the chair of the BoD and the CEO. Listed companies generally have single-tier boards comprising both executive and non-executive directors. The establishment of completely independent audit, nomination and remuneration committees is required by law/regulations/listing rules. Further, the governance rules/regulations do not stipulate any specific requirements/recommendations with respect to the remuneration of the directors and the key executives. Although the disclosure of the compensation policy and compensation of all directors, CFO, and CEO are required, the shareholder approval for the same is required, only if the corporation uses incentive pay (OECD, 2019).

According to Rubach and Seborá (1998), the US governance system, being based on the dispersed ownership paradigm of Berle-Means, views shareholders as passive investors with their primary concern being financial returns. Though they are claimants of the residual returns of a corporation, shareholders (being passive) refrain from interfering in the operations of the corporation and are expected to do the ‘Wall Street Walk’ if they do not like the way the corporation is being run.

The NYSE listed Company Manual (2019) lays down the norms with respect to corporate governance for companies listed or to be listed on the NYSE. According to the manual, listed corporations should have fully independent audit, compensation, and nominating/ corporate governance committees. Each listed corporation should have an internal audit function to assess the corporation's system of internal control and its risk management processes. Further, majority directors in listed corporations should be independent.

Also, listed corporations are required to adopt and disclose their corporate governance guidelines. These guidelines should cover guiding principles related to directors' compensation, qualifications, responsibilities, and orientation, etc. Management succession planning and performance evaluation of the BoD should also form part of these guidelines along with a business code of conduct and ethics. With respect to ownership of the corporations' shares by its directors and officers, the manual provides encouragement to such share ownership via ESOPs and stock options albeit with a word of caution and some guidelines with respect to the timing of such purchase/grant or sale of shares. Further, all equity compensation plans (barring a few exceptions) or material revisions thereof, are required to be approved by the shareholders (NYSE Listed Company Manual, 2019).

On similar lines, NASDAQ equity rules (2019) require listed companies to get shareholders' approval on all stock purchase plans, option plans, or other equity compensation (barring a few exceptions) and on any material amendments thereof. The majority of the BoD should comprise independent directors. Further, listed companies should comply with NASDAQ's corporate governance requirements with respect to the 'board of directors (including audit committees and independent director oversight of executive compensation and the director nomination process); code of conduct; shareholder meetings including proxy solicitation and quorum; review of related party transactions; and shareholder approval, including voting rights'.

Table 1 presents a comparison of the corporate governance models of the US and China on key parameters such as the ownership structure, the BoD structure, main regulator, and executive compensation.

Table 1: Corporate governance model comparison

S. No.	Criteria	China	United States
1.	Main CG Regulator(s)	China Securities Regulatory Commission (CSRC); State-owned Assets Supervision and Administration Commission (SASAC); Ministry of Finance of the People`s Republic of China (MOF)	Securities and Exchange Commission (SEC)
2.	Ownership Structure of listed companies	Concentrated ownership prevalent (with State as majority shareholder in SOEs)	Dispersed ownership. Listed companies tend to be under managerial control and not under control of any major shareholder
3.	Related Party Transactions (RPT)	<ul style="list-style-type: none"> • BoD approval required for non-routine RPT • Shareholder approval required for non-equity RPT 	<ul style="list-style-type: none"> • BoD approval required for non-routine RPT • Shareholder approval required for non-routine transactions
4.	Board Structure Type	Two-tier system	One-tier system
5.	Description of Board Structure	<p><u>Supervisory Board:</u></p> <ul style="list-style-type: none"> • Comprises of representatives from shareholders and employees (employee representatives to be at least 1/3rd of the SB) • Supervisory powers over the BoD, management and the company 	BoD comprises of both executive and non-executive directors

S. No.	Criteria	China	United States
		<p><u>Board of Directors</u></p> <ul style="list-style-type: none"> • Comprises directors and independent directors (independent directors to be more than 1/3rd) • Audit committee comprised of directors with majority being independent directors • Management team selected by the BoD responsible for day-to-day operations of the corporation 	
6.	Board and key executive compensation	Disclosure of - total amount of compensation, compensation policy, and the individual – required by law/ regulations	Disclosure of - total amount of compensation, compensation policy, and the individual - required by law/ regulations
7.	Compensation recommendation	Long term incentive mechanism; (employee stock option plans, equity incentive, etc.). Severance payments to be fair and without prejudice to the legitimate rights of listed companies	No specific recommendations. Only disclosure requirements

S. No.	Criteria	China	United States
8	Compensation Practices	Executive compensation influenced by peer effects; No stock-based compensation for independent directors	Restricted stock preferred; options with performance-vesting provisions; performance shares preferred over options
9	Disclosure Requirements	The BoD is required to report to the General Shareholder Meeting (GSM) and disclose the compensation of the directors, the supervisors, and the senior executives	Listed companies must adopt and disclose corporate governance guidelines including guidelines related to directors' compensation
10	Guiding Principles	<ul style="list-style-type: none"> • Compensation of supervisors and directors to be determined by the GSM • Remuneration of senior executives to be approved by BoD; fully disclosed; and be explained in GSM • Incentive mechanisms such as employee stock ownership plans, and share incentives can be established in accordance with laws, regulations and AoA of the corporation 	Barring some exceptions, all equity compensation plans including those to directors must be approved by the shareholders

S. No.	Criteria	China	United States
		<ul style="list-style-type: none"> • Incentive mechanisms to be conducive to innovation, and sustained development. Also, without jeopardising legitimate interests/rights 	
11	Basic philosophy	Socialist approach transitioning to market capitalism	Based on market capitalism
12	Theoretical underpinnings	Shareholder primacy	Shareholder theory (focus on shareholder wealth maximisation)
13	State of capital markets	Inefficient	Deep and liquid
14	Labour market	Low unionisation	Low unionisation
15	Use of ESOPs	Use of restricted stock and stock options allowed since 2005/06.	Wide
16	Market for corporate control	Weak (free-market style mergers & acquisitions not permitted)	Wide

S. No.	Criteria	China	United States
17	Objective of corporations	Improvement in overall value of the corporation	Short-term focus on shareholder wealth maximisation
18	CG Mechanisms	Capital markets; BoD & SB; General shareholders' meetings; audit, nomination, and compensation & appraisal committee	BoD (focus on independence and objectivity); presence of audit and compensation committees; active stock market; extensive market for take-overs

Sources: Chen, 2015; China, 2019; Easterlin, 2014; Conyon and He, 2011; Conyon et. al., 2013; Herd, Koen, and Reutersward, 2010; Jiang and Kim, 2015; Kubo, 2005; Lazar et al., 2014; Mutlu et al., 2018; NYSE Listed Company Manual, 2008; OECD Corporate Governance Factbook, 2017; OECD Corporate Governance Factbook, 2019; Tam, 2002; Yang and Yang, 2009; Ye, 2014

2.2.6 Corporate governance - challenges and the way forward

Common themes that have emerged from accounting scandals in the US are presence of a self-interested and strong management, inadequacy of internal controls, inappropriate management incentives, audit and accounting failures, (Grant & Visconti, 2006; McMillan, 2004; Sorensen & Miller, 2017).

On the other hand, in China political connections, weak legal structures, misplaced managerial compensation, and managerial inefficiency are some of the reasons that have been acknowledged to cause FSF (Conyon & He, 2016; Hass, et al., 2016b; Stuart & Wang, 2016; Wang, et al., 2017).

Chen and Keefe (2018) state that in countries where the ownership of listed corporations is dispersed (like the US), the chief conflict is between the managers and the shareholders. In contrast, in countries where the ownership of listed corporations is highly concentrated (such as China), the chief agency conflict is between minority and large shareholders.

Improving corporate governance is one solution to the FSF debacle. According to Bai et al. (2004) there are two broad categories of mechanism (viz. internal mechanisms and external mechanisms) for resolving the conflicts between owners and managers and those between the controlling and minority shareholders. Internal mechanisms include the BoD, executive compensation, financial disclosure, and ownership structure. External mechanisms on the other hand comprise the external takeover market, product market competition and legal infrastructure.

However, the implementation of corporate governance mechanisms is challenging. Bradley et. al. (1999) regard the rapidly changing structure of corporate activity, organisational forms, regulatory environment, and financial and product markets, as the key challenges for corporate governance. Zalewska (2014) further adds to the challenges faced by CG practice. According to the study, the issue of information asymmetry between principals and agents should be addressed by a focus on ex-ante monitoring rather than ex-post monitoring. Further, cross-country differences make it imperative that the solutions to corporate governance problems in one country be modified before they are implemented in other countries. Thus, there are no one-size-fits-all solutions. Lastly, political intervention, which may be short-sighted to gain political mileage, may result in the passing of draconian laws which may later have to be modified or withdrawn, a case in point being some of the Sarbanes–Oxley Act (2002) requirements that were later reversed by the Dodd–Frank Act (2010).

Despite the challenges faced in CG practice, it remains a critical mechanism for reducing fraud. Studies have identified corporate governance mechanisms such as BoD independence and the separation of the CEO and Board chair role, etc. to deal with corporate fraud - a view is supported by the regulatory actions taken by the US and China to control FSF.

In order to deal with the menace of scandals, the US has passed two acts namely the Sarbanes-Oxley Act (2002) and the Dodd-Frank Act (2010). Carcello, Hermanson, and Raghunandan (2005) contend that the Sarbanes Oxley Act has provided a renewed focus on internal controls and their research argues that 'the board of directors provides incremental oversight on internal controls as part of its fiduciary duties' (Goh, 2009, p-550). Further, the BoD can pressure the management to identify and remedy the deficiencies in the internal control environment. The two acts, mentioned above, are aimed at protecting investors and have further empowered the BoDs (Bainbridge, 2012) clearly supporting the view that the directors can be instrumental in controlling fraud.

To control the incidence of FSF and following the footsteps of the US, China also enacted its version of the Sarbanes Oxley Act ('China SOX') in 2008. This Act is China's first regulation focused on internal controls and it fixes the responsibility of establishing and implementing internal controls on the BoD (Lu & Cao, 2018). Further, Lee, et al. (2018) find that in China the structure of the BoD in terms of the optimal number of directorships held by the directors, BoD diversity in terms of the diverse industry experience of the members of the Board can help reduce corporate misconduct.

Thus, both the countries have acknowledged that directors are crucial to address corporate governance challenges and therefore directors must be well-motivated to perform this monitoring function. Corporate governance literature regards, compensation as a vital motivation tool. The following sections discuss the various models for determining compensation of executives/ directors under the two governance models namely China and the US.

2.3 Models for determining executive/directors' compensation

Several models have been used to determine executive/directors' compensation. For instance, the agency model attempts to design executive compensation in an attempt to converge the divergent objectives of two parties – the shareholders and the managers. The shareholders seek to induce the managers to act in the best interests of the former given the information asymmetry that exists between the two parties. This inducement is achieved by making the rewards of managers dependent on shareholder returns.

Other models to carve executive compensation include variables like company sales, relative performance (using benchmarks in the same/similar industry), and corporate governance tools such as a compensation committee, and the separation of CEO and chairman positions and roles (Conyon, 1997).

2.4 Compensation under different corporate governance models

The structure of compensation packages varies from country to country. According to Brickley, Smith, and Zimmerman (2021), as per 2003-2004 Towers Perrin's worldwide compensation survey, US CEOs receive approximately 63% of their salary in variable form. This percentage is 51% and 19% for Germany and Japan, respectively, whereas for China variable pay was only 18%. Further, 85% of the US companies surveyed used stock-options while that percentage was only 35% in case of China (Shanghai). The sub-sections below discuss in detail compensation practices in China and the US.

2.4.1 Executive/directors' compensation under the Chinese model

The CSRC in 2005 introduced a framework for equity incentives. As per this framework, publicly traded corporations (that had completed structural reforms) in China could offer restricted stocks or stock options to their board members, supervisory board members, and the top management (excluding independent directors) (Conyon & He, 2011). However, according to Huang and Boateng (2017), executive⁷ compensation in China is paid mostly in the form of cash and very few corporations use stock option plans albeit with very limited disclosures. Further, according to this study executive compensation in Chinese corporations fails to align the interests of the shareholders and the firm leadership, primarily due to the short-term nature of the compensation (being predominantly cash-based). We find empirical evidence to support the above assertion in, Ye (2014) which links the cash-based compensation of independent directors in China to the propensity of earnings management and concludes that higher levels of cash-based compensation for independent directors compromises their objectivity and independence, thereby reducing their effectiveness in their oversight of financial reporting quality.

Adithipyangkul and Leung (2015) undertook research to study the determinants of the compensation for independent directors in China and found that, in line with other market economies, independent directors in China are also compensated both for the human⁸ and social⁹ capital. Further, the legal institutional environment and the ownership structure also have an influence on the level of independent directors' pay. For instance, human capital is rewarded more in privately owned Chinese firms, whereas among local government units, social capital is considered more valuable. Also, independent directors' pay is less in corporations owned by local government units and their pay in such units is lower still if the unit is in a region with well-developed legal institutions. In a similar study, Chen and Keefe (2018) argue that in China, given the concentrated share ownership of listed corporations, the chief governance conflict is between the large and minority shareholders. Thus, directors' compensation in China should be structured to mitigate this conflict. Given the high degree of ownership concentration in China, large

⁷ Executives include top management, BoD and supervisory board members.

⁸ Education, effort, and professional expertise.

⁹ Connections.

shareholders have significant influence over directors' pay, which may render directors' compensation ineffective in meeting the above stated objective. However, according to the results of their research, directors' compensation increases with an increase in the shareholding of the ultimate controlling shareholder, implying that ultimate controlling shareholders can attract more experts and high-rank bureaucrats to the board by offering higher compensation. Further, directors' compensation in China increases with tenure and directors' busyness¹⁰, while directors' compensation is lower in state-owned companies.

2.4.2 Executive/ directors' compensation in the US

In the US between 1993 and 2001 there was extensive use of stock options. In fact, by 1999 stock and option-based compensation accounted for more than 50% of the outside directors' compensation in the 200 largest US corporations (Cordeiro et al., 2000). However, that trend changed from 2002 onwards, and from 2002 to 2009, there was widespread use of restricted stock, a shift away from the erstwhile use of stock options. The financial crisis of 2009 brought about more stringent reporting requirements with respect to executive compensation. The Dodd–Frank Act (2010) further reformed executive compensation in the US with provisions such as giving shareholders the right to approve executive compensation via a non-binding vote; clawback of payments made to executives in case of restatement of financial statements; and additional disclosures with respect to executive compensation. These changes can be traced back into the accounting rules, corporate governance practices, disclosure requirements, economic conditions, legislation, political climate, and tax policies prevalent in the US during those times. Thus, the US has, in some sense, witnessed a transition wherein restricted stock is preferred and options tend to have performance-vesting provisions. Further, performance shares are preferred over options (Canyon et. al, 2013).

Similarly, Canyon (2014) finds that in the US, restricted stock has gained more significance. Also, executive pay in the US continues to have equity incentives in significant portions and stock options continue to be an essential element of pay packages. Ryan and Wiggins (2004), in a study of board compensation for directors in the US, find that corporations that have BoDs with more independent directors, compensate directors with more equity-based pay. Conversely, corporations with more insiders on the BoD use equity-based compensation less. Farrell et al. (2008) document a trend towards the use of fixed value equity¹¹ compensation in the compensation plan of directors in the US, whereas Hambrick and Jackson (2000) report that top performing companies in the US tend to have directors with substantial equity holdings in

¹⁰ Measured by the number of directorships held at the same time.

¹¹ 'Fixed-value equity is the value of stock and options that were awarded in explicit dollar amounts' (Farrell, Friesen & Hersch, 2008, p. 156).

those companies, and the companies that lag have insignificant equity stakes held by the directors.

Thus, from the discussions in the foregoing sections, it can be concluded that the governance mechanisms across the various corporate governance models are different, and these differences also have a bearing on the structuring of compensation packages of executives and directors. For instance, Mallin et al. (2015) researched the difference in corporate governance practices with respect to directors' pay and found that the use of performance-based pay for independent non-executive directors was limited in the UK and Italy (in line with their corporate governance codes), whilst the use of such compensation was more common in the US. The British and Italian codes of CG consider performance-linked compensation as detrimental to the independence of the directors, whereas the US considers such pay as a measure to reduce the agency conflict between the independent directors and the shareholders. The study also found differences in the quantum of independent directors' pay in the UK and Italy with the compensation paid in the UK being higher than that paid in Italy. This difference in pay was attributed to the difference in the risks assumed by the independent directors in the two countries, the US influence on the UK corporations, and higher personal liabilities of the directors in the UK.

2.5 Compensation and its role as a corporate governance mechanism

Compensation is regarded as one of the tools for aligning the interests of the agents and the principals. According to Zalewska (2014), a possible solution to the principal-agent conflict is to design the monetary incentives of the agents in such a manner that the agents'/managers' and principals' interests are aligned, and the agents voluntarily act as though they were the principals.

Collins et al. (2015) find strong linkages between equity-based compensation and firm performance. With respect to governance variables, they find that larger boards are associated with higher executive pay, suggesting that large boards signify governance weakness as manifested in poor decision making, managerial monitoring, and communication. Also, high leverage and institutional ownership are linked to lower compensation, alluding to the role played by creditors and institutional owners in reducing the agency problems through enhanced monitoring of the management. Contrarily, McConvill (2006) argues against compensation, specifically pay for performance, as a remedy for agency problems. The study claims that the reliance on compensation is misguided because it lacks understanding of human behaviour and motivation. Monetary reward is not the only tool to converge the diverse interests of the principals and the agents, as psychological and social factors such as authority, cognitive dissonance, friendship, and team spirit also have roles to play.

Further, at the senior level, executives regard their work as a calling¹² wherein work becomes a passionate commitment and thereby the primary source of motivation. Another angle to this debate is the stewardship theory, which contends that an individual's motivation is driven by self-actualisation rather than by economic considerations.

Balsam et al. (2017) find that related party transactions (RPTs) signify weak governance, as the RPTs of outside directors are significantly and positively related to CEO compensation. Further, RPTs are more likely in bigger corporations or in corporations with larger boards or in corporations with a low proportion of busy directors, and a high proportion of inside directors. According to He (2008), use of incentives for aligning the divergent interests may not always be effective, as managers possess different intrinsic characteristics and attributes. For instance, in the case of founder managers, delegation works better than control. Also, founder CEOs yield better in terms of firm performance and are cheaper in terms of compensation compared with professional CEOs. Work by Core et al. (1999) also relates governance with determination of compensation. They find that weaker governance results in greater agency problems, which translates into higher executive compensation. As per the above, of key significance are corporate governance measures related to BoD, and ownership structures. If the chairman of the BoD and the CEO is the same individual, and the outside/independent directors, who make up a large percentage of the BoD, are appointed by the CEO, then CEO compensation tends to be high. On the ownership front, CEO compensation declines with the increase in the CEO's ownership stake and with the presence of an external investor who holds at least 5% of the equity.

2.5.1 Compensation and agency theory

The agency model has been widely acclaimed to be a solution to the agency conflict and proposes to design compensation packages in such a way that they incentivise the managers to choose and implement those actions that will enhance shareholders' wealth. This is achieved by aligning the goals of the shareholders and the managers. The managers thereby evaluate every action from the point of view of aligning social and private costs with benefits of the action, rather than from a point of view based on the private benefits and costs, to the managers, of pursuing an activity (Jensen & Murphy, 1990). Murphy (1985) finds evidence in support of the agency theory and claims that managerial compensation is strongly positively linked to shareholder wealth creation. Benito and Conyon (1999) also establish a positive relationship between shareholders' return and directors' pay. However, they use only cash compensation in their research, thereby ignoring other pay sources like share options and warrants, which could affect the results of their study.

¹² calling' (or vocation) is a passionate commitment to work for its own sake (McConvill, 2006, p. 422)

However, there is no conclusive stand on the positive linkage between compensation and shareholder wealth, as there is research also to counter the above assertion. Gregg et al. (1993) reported a weak relationship between directors' compensation and company performance in terms of dividend and share price return. However, they find high correlation between directors' compensation and company growth in terms of increase in sales. Rosen (1990) also found evidence of top executive salaries being an increasing function of sales rather than profits. He attributes this phenomenon to the concept of 'scarcity rents', which the top executives earn due to their talent and abilities even in absence of agency conflicts.

Despite the inconclusive evidence with regard to the linkage between compensation and value creation, stock options have been increasingly used as a tool to incentivise executives/directors and to align their interests with that of the corporation.

2.5.2 Directors' compensation and corporate governance

Directors are a vital corporate governance mechanism as they play the critical role of appointing and monitoring a firm's management, and of offering it strategic advice. However, the directors have been delegated these duties by the shareholders and hence they are delegated monitors. This gives rise to issues with respect to agency, and shareholders have to trade-off between control and incentives for directors. Given the limited scope for monitoring the directors, incentives play a significant role in aligning the interests of the directors and the shareholders, thereby making directors' compensation an important corporate governance tool (Andreas et al., 2012).

As per Talha et al. (2009), the CG process should embrace directors' compensation, as mishandling of this could have a damaging effect on the morale of employees and on the reputation of a corporation. At the same time, the make-up and the level of compensation should be such that a corporation is able to attract and retain the directors needed to run the company.

As per Jensen et al. (2004, p. 22) '[..] corporate governance and remuneration policies are highly inter-related: bad governance can easily lead to value-destroying pay practices, and many notorious excesses in pay can be traced to poor governance'. This implies that the agency conflict arising out of the separation between the management and ownership can be mitigated by designing incentive structures for directors in such a manner that they align the interests of the directors and the shareholders. However, directors' compensation can solve as well as aggravate the agency conflict. Therefore, other corporate governance mechanisms such as compensation committees, shareholders' approval of directors' compensation including stock-based incentive plans, disclosure of directors' compensation, and well-defined maximum lengths of service for directors, etc. may be required.

Several studies have been undertaken to study the packaging of directors' compensation as a governance mechanism. Jensen (1993) advocates the use of equity stakes in corporations as a tool for providing better incentives to outside directors. However, Nahar Abdullah (2006) found that directors' compensation is negatively related to independence of the BoD and to non-executive directors' ownership.

With respect to determination of directors' compensation, Van Der Zahn et al. (2005) studied the presence of the remuneration committee and its impact on executive directors' cash-based bonus pay and found that the remuneration committee, whose members' interests are more closely aligned to those of the shareholders, are more amenable to linking intellectual capital performance and executive directors' compensation. Conyon (1997) also found some evidence of influence of corporate governance policies like remuneration committees on directors' remuneration. However, as per the study, the separation of the roles of the CEO and chairman of the Board had little impact on compensation determination.

In contrast to the above, Benito and Conyon (1999) did not find any significant influence of corporate governance policies on the determination of directors' pay. Further, as per their study there is a positive relationship between directors' pay and shareholders' returns, and between directors' pay and company size. However, a key limitation of the study is that it used just the cash pay. The results may differ if total compensation is considered.

With respect to directors' stock ownership, Bhagat and Bolton (2008) regarded it as an important governance mechanism. They found that directors' median stock ownership, measured in dollars, and operating performance are positively related. However, it is to be noted that they do not include stock options in their assessment of stock ownership by directors. On the other hand, Hambrick and Jackson (2000) in their research on directors' shareholding and company performance reported that top performing companies tend to have directors with substantial equity holdings in those companies, whereas the companies which lagged had insignificant equity stakes held by the directors. These small holdings resulted in passive governance by the directors, which further led to dismal company performance resulting in a further unwillingness among directors to buy more stakes in the company, thereby creating a vicious cycle. However, Bhagat and Tookes (2012) reported that the nature of director ownership plays a role in determining firm performance, and found that mandatory stock holding by directors is unrelated to operating performance, whereas voluntary holdings are significantly and positively related to future company performance.

Contrary to the expectation, in a study Kosnik (1987) found that outside directors' equity interests in the corporation are not a motivating factor in influencing directors' resistance of greenmail¹³ payments. Kosnik used

¹³ Private repurchase of shares by a company from a minority shareholder at a premium over and above the prevailing market price.

greenmail payments as a proxy for signifying ineffectiveness of the BoD. Greenmail payments are at odds with the interest of the shareholders as these payments are discriminatory and have an adverse impact on the wealth of shareholders who are not part of the greenmail. Hence, BoDs that prevent the management from making greenmail payments are considered to be more effective. The results of the study indicate that BoDs comprising more directors who are outsiders, or who are professionally qualified or with executive experience, are found to be more effective in resisting greenmail payments. Further, as per the study, outside directors' equity interests do not motivate directors to resist greenmail payments. The plausible explanation for this could be the small size of equity ownership of outside directors in the sample under study.

However, in a further study, Kosnik (1990) found that the resistance to greenmail payments by the BoD is more likely when the outside directors' stock ownership is greater in proportion to their cash compensation and the top management has low stock ownership compared to its cash compensation. This implies that, in line with the agency theory, the outside directors pursue shareholders' interests when they are aligned with their own interests. Further, companies with outside dominated directors on the BoD or with remuneration committees with a larger proportion of outside directors tend to have greater alignment between firm performance and top management pay (Conyon & Peck, 1998).

Nguyen (2014) found that firms with more active boards and committees tend to pay their directors for attending board and committee meetings. Also, more active committees/boards are paid more. Linn and Park (2005) found evidence of higher total compensation being paid to outside directors by corporations with more investment opportunities as opposed to corporations with fewer such opportunities. Further, corporations (with more investment opportunities) rely more heavily on stock than cash to compensate their directors. Also, outside directors' compensation increases with firm size. Deutsch et al. (2007, p. 49) suggest that 'outside directors should also themselves be regarded as agents rather than mere stewards, monitors, or information channels for shareholders'. Thus, they suggest a dual agency model for corporate governance as per which incentives of outside directors should also be aligned to shareholder value creation. In fact, Yermack (2004), in a study of Fortune 500 firms from 1994 to 1996 (with more than 700 directors), found evidence of personal financial gain for outside directors with the increase in the market capitalisation of a corporation.

2.5.3 Types of compensation packages

Directors' compensation generally comprises basic salary and other non-monetary or monetary benefits paid to the directors during their tenure. Common constituents of directors' compensation are cash, stocks, stock

options, pension, non-equity incentives, retainer fees, and meeting fees (Nguyen, 2014; Cordeiro et al., 2000).

Incentives generally include shares, bonuses, and options (Zalewska, 2014). Further, though bonuses can be linked to accounting performance, the value of option grants and shares is dependent on the strike price of the option and the share price, respectively. Lazar et al. (2014) state that for non-executive directors, the compensation package should include a function-oriented component, a fixed component, and a performance-linked component.

The use of stock options in compensation packages has gained a lot of attention from the academic world. Hence, it warrants greater attention, and hence the efficacy of use of stock options is discussed in greater detail below.

2.5.4 The efficacy of stock-based compensation including stock options

Academic parlance regards corporate governance to be concerned with the alignment of divergent interests and bringing about desirable actions on the part of the key actors of a corporation. To achieve this objective, chief elements of any corporate governance system are identified to include the BoD, shareholding voting rights, shareholder meetings, and executive compensation. Outside directors who are independent, block shareholding, and the use of stock options to compensate executives are regarded as the key tenets of good corporate governance. However, given the historical cases of corporate scandals such as Enron, WorldCom, etc., the erstwhile CG mechanisms including stock-option-based compensation have come under considerable scrutiny (Bhagal et al., 2008).

There are two key theories with respect to the use of stock options for remunerating directors/executives. According to the optimal contracting theory, linking directors' compensation to corporate performance incentivises directors to work hard to maximise the firm's value. On the other hand, the managerial power theory postulates that issuing options to directors aggravates the agency problem and encourages them to manage earnings (Seamer & Melia, 2015).

Empirical research is divided on its view with respect to the use of stock options in compensation plans. Some researchers find evidence of a positive relationship between the grant of options and the maximisation of value of the firm, whilst others argue otherwise.

Brickley et al. (1985) find that on average, long-range compensation plans for management, which may include phantom stock, stock options, performance plans, stock appreciation rights, and restricted stock, result in an increase in shareholders' wealth. They argue further that there is no difference in the market reaction to different types of long-range compensation plans, implying that no single compensation package dominates, and firms design these packages depending upon the tax situation and incentive effects (alignment of

shareholder and managerial interests) they face. In similar research, Lewellen et al. (1989) take up the issue of mergers that are ostensibly aimed at reducing the risk faced by the firm but are instrumental in reducing the risk to the personal wealth of the management, especially when the managers own large stakes in the corporation. Contrary to the general belief, their research finds no such evidence. Further, managers may in fact be deterred, by the possibility of loss to their personal wealth, from taking poor decisions with respect to mergers. Hanlon et al. (2003) also support the grant of stock options based on the results of their research. According to them, stock options result in reducing the problem of moral hazards that stems from the top management having a very low stake/ownership in the corporation. In fact, stock options generate positive payoffs in future operating income, and the relation between future operating income and value of options is concave (i.e. increasing at a decreasing rate). Further, they find no evidence of rent extraction, i.e. compensation in excess of the level considered optimal from the perspective of shareholders' interest, being pursued by the top management. Similarly, Oswald and Jahera (1991) report a positive relationship between firm performance (measured by return on stocks) and the level of inside stock ownership (i.e. stock ownership by officers and directors). They thus conclude that giving equity stake is instrumental in fostering long-term growth of corporations. Lin et al. (2011) also find evidence to support the above assertion and claim that pay-for-performance models are effective in Taiwanese high-tech businesses. Similarly, Bolton (2014) studies the impact of stock ownership by audit committee members on firm performance, and concludes that firms in which stock ownership by audit committees is increased have a significant increase in their operating performance, and this result sustains irrespective of the level of independence of the audit committee. Ryan and Wiggins (2004) find evidence that corporations with more outside directors give more equity-based compensation to their directors.

On the contrary, Aboody and Kasznik (2000) disagree with the grant of stock options and argue that CEOs make opportunistic decisions by timing the voluntary disclosures in a manner which maximises the value of their stock options. They argue that since the exercise price of the stock options is fixed and equal to the stock price on the date of award of the option, CEOs delay good news and rush in bad news around the date of the stock option award. Likewise, Yermack (1997) argue that managers use stock options to serve their self-interest by using them as a means to capitalise on the expected positive movements in share price in response to operating improvements. This is achieved by having more performance-related pay being awarded to themselves in the wake of the imminent betterment in company performance. Adding to the above viewpoint, Bebchuk et al. (2002) argue that managers wield significant influence over the design process of their compensation packages and can thus extract rents (by receiving pay in excess of the level which is optimal for shareholders) by using stock options along with the freedom to unwind incentives and the freedom to choose the timing of unwinding. However, their need to camouflage the rents may result in inefficient compensation packages, which have an adverse impact on

shareholder value. Goldman and Slezak (2006), on the other hand, define stock-based compensation as a double-edged sword that, while inducing productive effort on part of the managers, thereby increasing shareholder value, may also result in the divergence of resources to manipulate firm performance, which reduces shareholder value. Firms with stock-option based compensation to audit committee members have been found to have weak internal control systems (Cullina et al., 2010). In view of Greenspan (2002), "Too many corporate executives sought ways to 'harvest' some of those stock market gains. As a result, the highly desirable spread of shareholding and options among business managers perversely created incentives to artificially inflate reported earnings in order to keep stock prices high and rising. This outcome suggests that the options were poorly structured, and, consequently, they failed to properly align the long-term interests of shareholders and managers, the paradigm so essential for effective corporate governance. The incentives they created overcame the good judgment of too many corporate managers. It is not that humans have become any more greedy than in generations past. It is that the avenues to express greed had grown so enormously".

Rose et al. (2013) also find evidence in support of management of earnings and state that stock ownership can affect the objectivity and independence of the directors. However, such myopic behaviour focussed on boosting share prices can be put into check by increasing the transparency of boardroom discussions. Similar results were reported by Boumosleh (2009) who found that giving stock option grants to directors incentivise them to make compromises on their task with respect to the monitoring of financial information, which may translate into favourable financial reporting.

Use of stock-based compensation has also been related to higher risk-taking by managers. Rajgopal and Shevlin (2002) find empirical evidence that stock options incentivise managers to invest in risky projects. However, a key limitation of this study is that it uses data from a single industry – oil and gas exploration. Smith and Stulz (1985) provide further evidence to support the assertion with respect to risk behaviour by looking at the hedging behaviour of corporations. As per their study, option-like features in the compensation packages make a manager's income a convex function of the firm value and thus make the manager a risk seeker. Hence, the manager would be better off by hedging less. Similar results are reported by Deutsch et al. (2011) and as per their findings stock-option based compensation schemes for directors increase firm-level risk taking. Ryan and Wiggins (2001) argue that the investment opportunities and monitoring mechanisms influence the use of stock-based compensation. According to their study, options are used more in case of monitoring difficulties, whereas block holder and CEO ownership lead to less use of options. Similarly, risky investments result in more use of options and a decline in the use of restricted stock and cash bonuses, implying that corporations use options to encourage risk-taking by managers.

A contrasting view is that linking compensation to performance may make an executive risk-averse by nature, thus making the executives short-term-

performance oriented and leading them to overlook long-term strategic objectives.

Bruce and Buck (2005) argue that innovative/complex executive compensation instruments, including long-term incentive plans (LTIPs) and executive stock options (ESOP), may be used by executives for extending their self-serving behaviour, as disclosure requirements have failed to keep up with the increasingly complex and innovative nature of executive pay packages. This view is also supported by Harris and Bromiley (2007), who argue that stock options provide a strong incentive to take actions that result in an increase in the value of the options granted and such actions may also encompass impropriety such as financial misrepresentation. The non-linear effect of options (which results in massive gains if the stock price is above the strike price, and no gain if the stock price is below the strike price) is one of the factors that influences financial representation. Further, this effect is more accentuated for corporations that offer very high percentages of the compensation in the form of options.

With respect to stock-based compensation for directors, Dalton and Daily (2001) argue against the grant of stock-based and option-based compensation for directors. They contend that such compensation creates an inherent conflict of interest and may compromise the independence of the directors, as BoDs may set their own compensation packages. Further, there could be conflicts of interests on account of 'setting option performance targets, stock buybacks, stock option resets and reloads, consolidations (mergers and acquisitions), and service on multiple boards', which may not be in the interest of the shareholders (Dalton & Daily, 2001, p. 89). They take the case of auditors and attorneys and argue that these two parties are prohibited from owning shares in clients that they serve, as such stock ownership may compromise their independence. Further, even if one is to argue that stock-based/option-based compensation to directors is given post shareholder approval, they contend that ways and means could be devised to circumvent this approval. Thus, on fiduciary and ethical grounds, stock-based/option-based compensation to directors should be used with caution. Additionally, equity-based compensation for directors may cause them to lose their objectivity and may motivate them to adopt a short-term perspective, as they would focus on the present worth of their equity holdings rather than on its worth in the long run (Daily & Dalton, 2002). In a similar vein, Crutchley and Minnick (2012) argue that high incentive pay (stocks and options), which is actually designed to align the interests of directors and shareholders, leads to greater incidence of shareholder lawsuits against directors, alleging poor director oversight. This implies that excessive use of incentive pay in directors' compensation packages may distort the shareholder–director agency relationship. On the other hand, Deutsch et al. (2011) find that stock-option-based compensation schemes for directors increases firm-level risk taking.

Gerety et al. (2001) also conclude that incentive pay plans for directors are ineffective and hence less likely to be beneficial to shareholders, especially if

such incentive pay to directors is given by corporations where the CEO is involved in director selection and the corporation has no nomination committee. In the absence of a nomination committee, the incentive pay plans are issued at terms more favourable to the directors and the stock market reacts negatively to such incentive plan announcements. Option-based compensation to outside directors has also been found to impede their independence. Byard and Li (2004) find evidence of timing opportunism¹⁴ by CEOs, implying a failure of directors in their monitoring function. As per the findings, directors who receive lower option-based pay are better enabled to control CEOs' timing opportunism.

Cullinan et al. (2008) argue that when granted to directors, stock options (which are generally used to compensate the management) result in a mutuality of interest between directors and the management as against an alignment of interests between the directors and the shareholders. They find evidence of impairment in the objectivity and independence of outside directors when they are compensated with option-based pay. Further, outside directors who meet the definition of independence as per the Sarbanes–Oxley Act (2002) and have no option-based compensation are more effective in overseeing the management and thereby preventing revenue misstatements. Another critical view on stock-option-based compensation for directors is presented by Minnick and Zhao (2009). According to them, corporations that grant more options to their directors are more likely to backdate them. They further argue that it is likely that the directors derive personal benefit from such option-backdating exercises.

Despite the overwhelming amount of research opposing option-based pay to directors, there is some research that supports the grant of options to directors. For instance, Perry (2000) supports the contention that stock-based incentive plans for directors align their interests with those of the shareholders. According to his research, incentive pay for directors has a positive impact on their monitoring of the management. This is evident in the higher incidence of CEO turnover following poor performance in corporations that grant option-based pay to their directors. Fich and Shivdasani (2005) argue that option-based compensation to outside directors is value accretive to corporations and this is evident in the positive association between stock-option plans for directors and the market-to-book ratio, the upward revision in annual EPS forecasts by analysts in the year of adoption of incentive pay for outside directors, and the positive investor reaction on first announcement of such pay by corporations.

¹⁴ Timing opportunism means co-ordination of two decisions – CEOs' decision on the timing of release of corporate news and compensation committees' decision on the dates of option grants to the CEOs.

2.6 Financial statement fraud

2.6.1 Introduction

Financial statement fraud (FSF) distorts the financial worth and the monetary position of a corporation and its repercussions are harmful both economically and socially. As per Hogan et al. (2008), FSF is a cause of concern for shareholders and investors due to its adverse consequences on the market value and the existence of a corporation. As per estimates, 30 high-profile financial scandals in the US from 1997 to 2004 resulted in market capitalisation loss of ~USD 900.0 billion, representing a 77% decline in the market capitalisation of these firms. In some cases, FSF results in a drop in the market capitalisation of the fraudulent firm by as much as 500 times the amount of the fraud (Albrecht et al., 2008). These statistics make it imperative to understand what FSF entails before delving further into the domain of FSF.

Margret and Peck (2015, p. 1) define FSF as 'An act of deliberate deceit that results in a misleading representation, material misstatement or intended exclusion in a business entity's financial accounts. The deception is committed with the intent to mislead shareholders and other stakeholders about the financial state of the business entity. The fraud may misleadingly relate financial circumstances, or an otherwise non-financial material fact'.

On the other hand, the National Commission on Fraudulent Financial Reporting defines FSF as: 'intentional or reckless conduct, whether act or omission, that results in materially misleading financial statements... It may entail gross and deliberate distortion of corporate records... It may entail the misapplication of accounting principles. Company employees at any level may be involved, from top to middle management to lower-level personnel' (National Commission on Fraudulent Financial Reporting, 1987, p.2).

Having defined FSF, one needs to understand why FSF is committed. In this regard, several attempts have been made to understand the occurrence of FSF by using theoretical frameworks. An important theory in this regard is the theory of the fraud triangle. Other theoretical frameworks have also attempted to explain the incidence of fraud. Some of these theories are discussed in the following section.

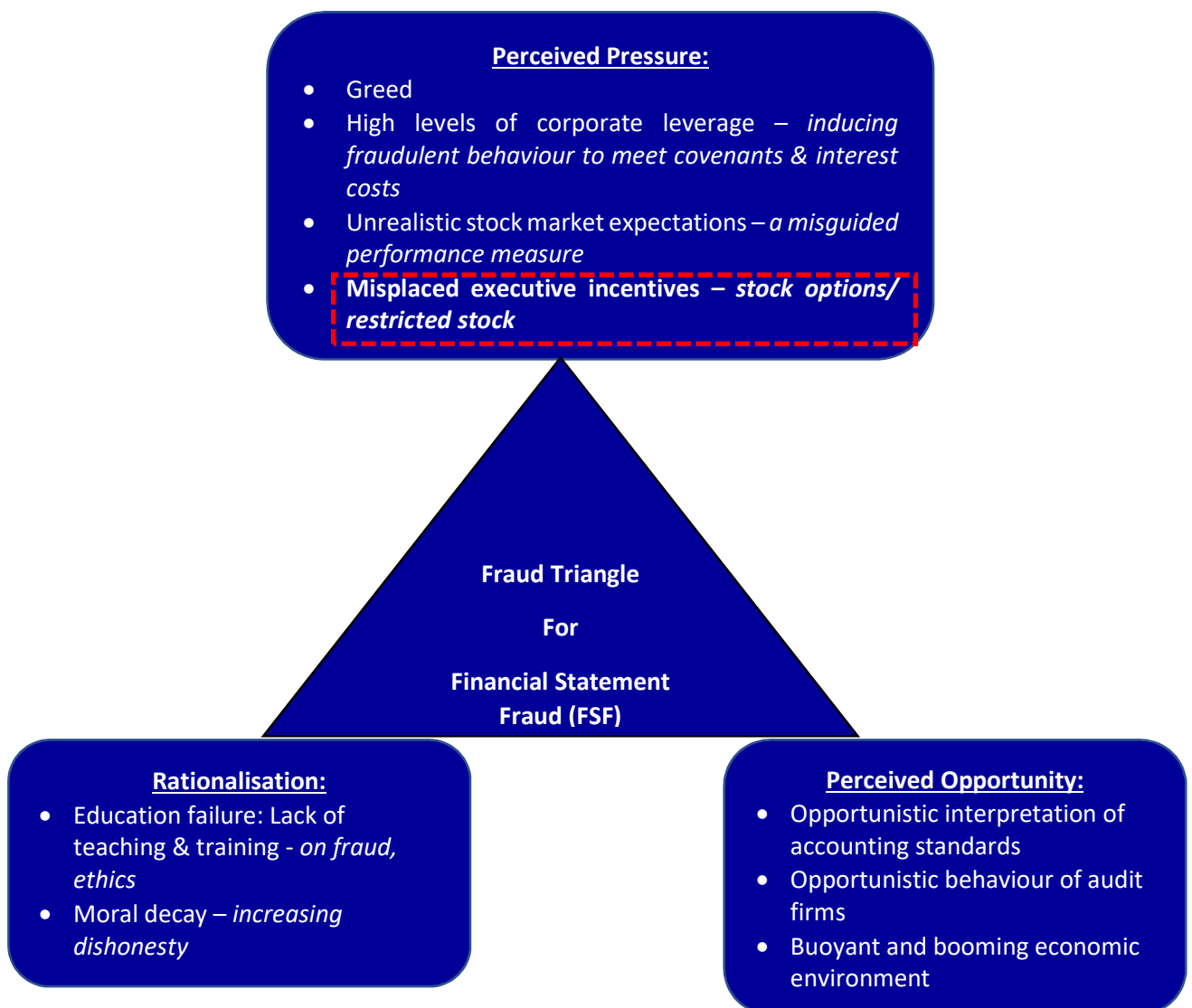
2.6.2 Financial statement fraud and theories of crime

The theory of fraud triangle

The theory of fraud triangle has been widely used to explain the incidence of financial statement fraud. Margret and Peck (2014) state that FSF can occur when the perpetrators of fraud are under perceived pressure, when the perpetrators can rationalise the fraud, and when there is an opportunity to commit the fraud. In a similar vein, Albrecht et al. (2004) identify nine elements to define the fraud triangle with respect to FSF. They argue that when agency-

based rewards (aligning the interests of agents and principals by using instruments like restricted stock, stock options, etc.) are combined with a stewardship-based corporate structure (marked with high levels of trust and empowerment) along with behavioural attitudes of the management which are ingrained in agency theory (i.e. behaviour driven by short-term focus and personal interest irrespective of long-term impact on the corporation), then the likelihood of occurrence of FSF is high. **Figure 2** provides the theoretical framework devised by Albrecht et al. (2004) to explain FSF.

Figure 2: Fraud triangle with respect to FSF as proposed by Albrecht et al. (2004)



As is evident from **Figure 2**, misplaced incentives can motivate or pressurise executives into committing fraud. Directors' are regarded as the 'top-level court of appeals' (Fama & Jensen, 1983, p. 314), hence the compensation of the directors assumes a high level of significance. Thus, it is vital to understand if

the compensation structure of directors' pay packages (including stock options or performance-linked compensation) encourages directors to connive to commit FSF.

Analysis of each of the three prongs of the fraud triangle has been a focus of academic research aimed at explaining FSF. With regard to the incentives and pressures for FSF, Dechow et al. (1996) identify low-cost external funding as the chief reason/pressure which may induce one to undertake FSF. Efendi et al. (2007) look at the stock options granted to CEOs and report that money stock options, held by CEOs, could be another incentive for FSF. Similarly, Burns and Kedia (2006, p. 40) find that stock options provide a strong incentive for FSF, as these make CEOs' 'wealth a convex function of the stock price', which limits the downside risk (for the CEOs) of the detection of FSF. Rosner (2003) finds that failing firms are motivated to manipulate their earnings to conceal their distress. Trompeter et al. (2014) further add to the list of incentives and pressures based on extant research and identify additional factors such as the timing of management stock sale; stress; social status; and personality traits such as conceit, excessive risk-seeking, and extroversion.

With respect to opportunities for FSF, weakness in corporate governance has often been regarded as one of the catalysts for the occurrence of fraud. For instance, Dechow et al. (1996) link weak governance with the manipulation of earnings. In their study on US corporations, they identify weakness in governance structures to include absence of an audit committee, the CEO acting as the chairman of the BoD, insiders dominating the BoD, and absence of monitoring of the management by an external block holder. Likewise, Farber (2005) finds that firms that have committed fraud have poor governance structures/mechanisms compared to firms which have not committed any fraud. The study identifies weak governance factors such as less representation of outside directors on the BoD, fewer audit committee meetings, less representation of financial experts in audit committees, less use of Big-4 consulting firms as auditors, and CEO duality. Similarly, McMullen and Raghunandan (1996) compare fraud and no-fraud firms to check the effectiveness of audit committees. They find that a greater percentage of non-fraud corporations have audit committees made solely from outside directors. Further, a large proportion of no-fraud corporations have at least one CPA on the audit committee as compared to fraud firms. Lastly, a greater percentage of no-fraud firms have audit committee meetings at least three times per year, as compared to corporations afflicted by fraud. Abbott et al. (2004) contrast the characteristics of audit committees across fraud and no-fraud firms. They find that the independence and activity level of audit committees, and the financial expertise of the members of the audit committee are both negatively related to the incidence of fraud, i.e. the more independent and more active an audit committee is, the less likely it is for fraud to occur. On the other hand, Loebbecke et al. (1989), using the survey approach, collected evidence from audit partners of an accounting firm. Their results reveal that weak internal controls and management-dominated decisions are the two main factors prevalent in cases of firms that commit fraud.

Research has also been conducted from the perspective of characteristics of the BoD and its impact on the occurrence of fraud. Beasley (1996) studies the composition of the BoD and its impact on FSF. Their results suggest that no-fraud firms have a higher proportion of outside directors on their BoD as compared to fraud firms. Further, the composition of the BoD is significant in reducing the occurrence of fraud as compared to the existence of and/or the composition of audit committees. Additionally, the probability of occurrence of FSF decreases with an increase in stock ownership by outside directors, an increase in directors' tenure on the BoD, a decrease in the number of directorships held by outside directors, and an decrease in size of the BoD.

Similar evidence is reported by Efendi et al. (2007), who find that misstatements in financial statements are more probable for corporations where the CEO is the chairman of the BoD, new equity or debt funding is raised, or there are constraints with respect to debt covenants. Johnson et al. (2009) also find evidence of insiders dominating the BoD of fraud firms.

Albrecht et al. (2008) state that the perpetrator of FSF may face perceived pressures on account of a personal financial need or due to executive compensation plan structures. There could be non-financial pressures in terms of meeting analyst expectations, or meeting expectations of the competition, or the need to beat the system, or even frustration from work or fear of losing a corporate position. Perceived opportunity may arise due to the perpetrator's belief that he/she will not be caught, or even if they are caught, that there will be no serious repercussions. Other avenues giving rise to opportunities for committing FSF include lack of external monitoring and oversight by auditors (due to conflicts of interest on account of auditors' ulterior motive of providing other services to the same client); lax internal monitoring and control; complex companies/divisions/corporate structures; rule-based accounting structures; and related party transactions. Finally, common rationalisations of the fraudulent behaviour could include that the fraud is temporary, or it is good for the corporation; there is no other option; no one is being hurt; or it is for a good purpose. Alternatively, a sheer lack of ethics, tone at the top/organisational culture or environment, or a personal need to succeed may motivate FSF.

Some of the other reasons for perpetrating FSF may include the desire/need to raise low-cost external financing (Dechow et al., 1996); high leverage (Ghafoor et al., 2019); and poor performance on account of losses/decrease in earnings (Burgstahler & Dichev, 1997; Degeorge et al., 1999).

The triangle of fraud action

The triangle of fraud action provides a description of the actions that an individual has to perform in order to perpetrate the fraud. The theory identifies three elements – act, concealment, and conversion (refer to **Figure 3**). The **Act** is concerned with the methodology and the execution of the fraud. For instance, the Act could take the form of FSF, embezzlement, or cheque kiting,

etc. **Concealment** deals with how the fraudulent act has been hidden. It could take the form of fake journal entries, destruction of files, or falsification of bank reconciliations, etc. Lastly, **Conversion** deals with the process of converting the ill-gotten gains into legitimate gains and it could include money laundering, buying cars, homes, etc. (Dorminey et al., 2012).

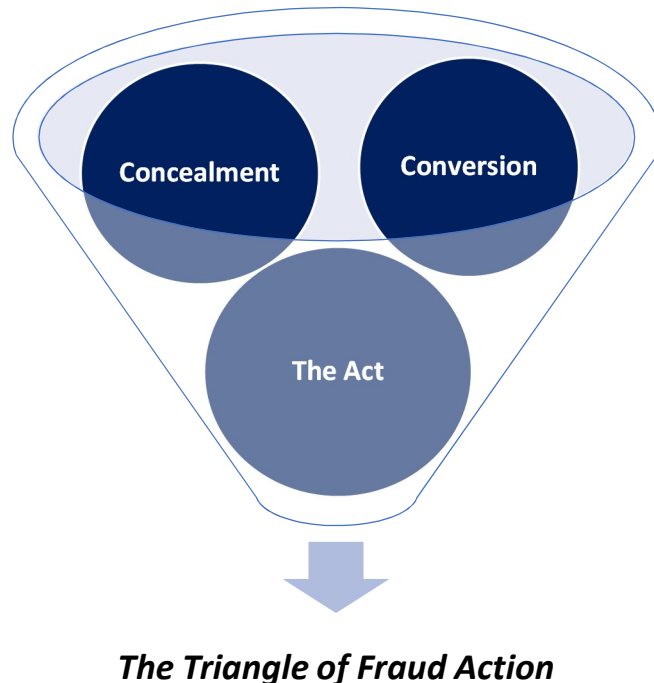


Figure 3: The triangle of fraud action

The acronym M.I.C.E.

This framework further delves into the pressure side of the fraud triangle theory by throwing some more light on motivations for committing fraud which may not necessarily be monetary. The Acronym MICE has been defined as **M = Money; I = Ideology; C = Coercion; E = Ego**. **Ideological** frauds may be related to tax evasion schemes, money laundering, or terrorism financing. **Coercion** happens in a situation wherein the perpetrator is not willing but is forced to commit the fraud. Most other frauds are related to **Money** and **Ego** such as Enron, WorldCom, and Bernie Madoff's ponzi scheme (Dorminey et al., 2012).

Economic framework for combating illegal activities – The rational choice theory

Becker (1968) proposes an economic framework for combating illegal behaviour and argues that the optimality condition for crime not to occur is when 'crime does not pay' i.e., when the probability of being caught and convicted increases, crime should decrease. This is because crime is committed

because the payoff from committing the crime exceeds the loss on account of being convicted and punished.

According to Cox et al. (2018), under the rational crime theory, criminals make a rational economic choice by weighing the perceived benefits against the perceived costs of committing a crime.

Johnson et al. (2009) find that Becker's framework holds true in the case of FSF and that 'unrestricted linear incentives' (comprising restricted and unrestricted stock) increase the likelihood of FSF.

2.6.3 The FSF challenge

FSF as a malady has continued to affect countries the world over, despite the heightened vigilance and improved corporate governance mechanisms. China and the US have also been chequered by several accounting scandals, some which have been discussed in this section.

Apart from the challenge with respect to the quantum of loss suffered by the stakeholders on account of FSF, other challenges with respect to FSF may include the non-detection of the fraud for a considerable period of time; unreliable financial statements; and undermining of the confidence in financial markets, which could translate into inefficient capital markets and higher risk premiums (Perols & Lougee, 2011). A major concern remains that the total loss on account of the FSF far exceeds the amount involved in the FSF, which calls into question the whole logic behind committing an accounting scandal.

The US has had its own share of FSFs, key among them being the FSF committed by American International Group, Inc. (AIG). Between December 2000 and March 2001, AIG entered into fraudulent reinsurance transactions with General Re Corporation with the intent of boosting its loss reserves by USD 500.0 million. The motivation behind the fraud was the eagerness to avoid criticism from analysts over AIG's declining reserves. Apart from this, AIG also entered into a number of other sham transactions, which resulted in material misstatement of its financial results. AIG paid close to USD 1.6 billion in fines and settlement (SEC, 2006).

China has also been chequered by FSF. TAL Education Group, an after-school tutoring company, had been alleged to have to been overstating its profits, fraudulently, since 2016 (Yu, 2018). Similarly, Sino-Forest Corp, a timber company, had been accused of inflating its revenue and assets by making fraudulent sales transactions to related parties (Hasselback, 2017).

2.7 Compensation and FSF – The link

Linkages between compensation and corporate fraud (including earnings management, financial restatements, and financial statement fraud) have been

explored in academic research for some time now, however the empirical results with respect to this association are mixed. For instance, Armstrong et al. (2010a) and Erickson et al. (2006) do not find any positive association between executives' equity incentives and fraud. On the other hand, Crutchley and Minnick (2012), Gerety et al. (2001), Dalton and Daily (2001), Harris and Bromiley (2007), Jiang et al. (2010), Ndofor et al. (2015), and Denis et al. (2006) all find a positive association between equity compensation and fraud.

Directors act as delegated monitors on behalf of the shareholders (Andreas et al., 2012). Establishment of appropriate incentives to align their interests with those of the principals' is vital (Jensen & Meckling, 1976). Though there is ample research on earnings management/restatements/FSF and executive compensation, research specifically linking directors' compensation to FSF is rather sparse. In experimental research, Magilke et al. (2009) find that biased financial reporting is preferred if audit committee members (generally comprising directors/members of the BoD) are compensated with stock-based compensation. Further, aggressive reporting is preferred by audit committee members when they have current stock-based compensation as part of their compensation package.

Furthermore, though compensation packages have several elements, the use of stock options has gained a lot of attention. Hence, directors' compensation and the use of stock-based compensation for directors needs to be delved into in greater detail.

2.8 Research gap, questions and framework

It is evident from the above literature that academic research is divided upon the impact of executive compensation on governance and vice-versa. Further, though there have been several studies linking executive compensation to earnings management (O'Connor et al., 2006; Cheng & Warfield, 2005; Bergstresser & Philippon, 2006) and those linking corporate governance to prevention of earnings management (Romano & Guerrini, 2012; Beasley, 1996; Abbott et al., 2004; Cornett et al., 2008), however empirical evidence which studies the linkage between directors' compensation (especially stock options) and FSF is sparse and such evidence in a comparative study of the world's two largest economies (the US and China) following two different governance models namely the US and Chinese (2CGM) is not available. The present research proposal seeks to bridge this gap and thereby enhance the understanding of the causal relationship between directors' compensation and FSF. It is important to address this gap and to enhance the understanding of this issue due to the adverse implications of FSF. Coenen and ProQuest (2008) argue that FSF is the costliest kind of corporate fraud. Though FSF may be present in just 10% of the corporate fraud cases, its median cost can be as much as USD 2.0 million. The high cost and magnitude of FSF emanates from the fact that those who commit FSF tend to be in positions of power, generally senior level managers/executives, who have access to assets, information, and

systems. Further, this access can be easily used by them to carry out the fraud. Furthermore, FSF, which is a deliberate crime, can cause excessive harm to the other stakeholders of a business such as auditors, bankers, creditors, investors, and pensioners. It erodes the confidence of the market participants in audited accounting statements. It also has an adverse impact on security prices and the cost of capital, as the market participants associate low quality of financial statements with high information risk. As per some estimates, FSF has caused losses of approximately USD 500.0 billion over the last few years (Rezaee, 2005). The actual loss may be even higher on two accounts – firstly, the figure of USD 500.0 billion is only for the US market and secondly, the estimate dates back to 2002 (Rezaee, 2005).

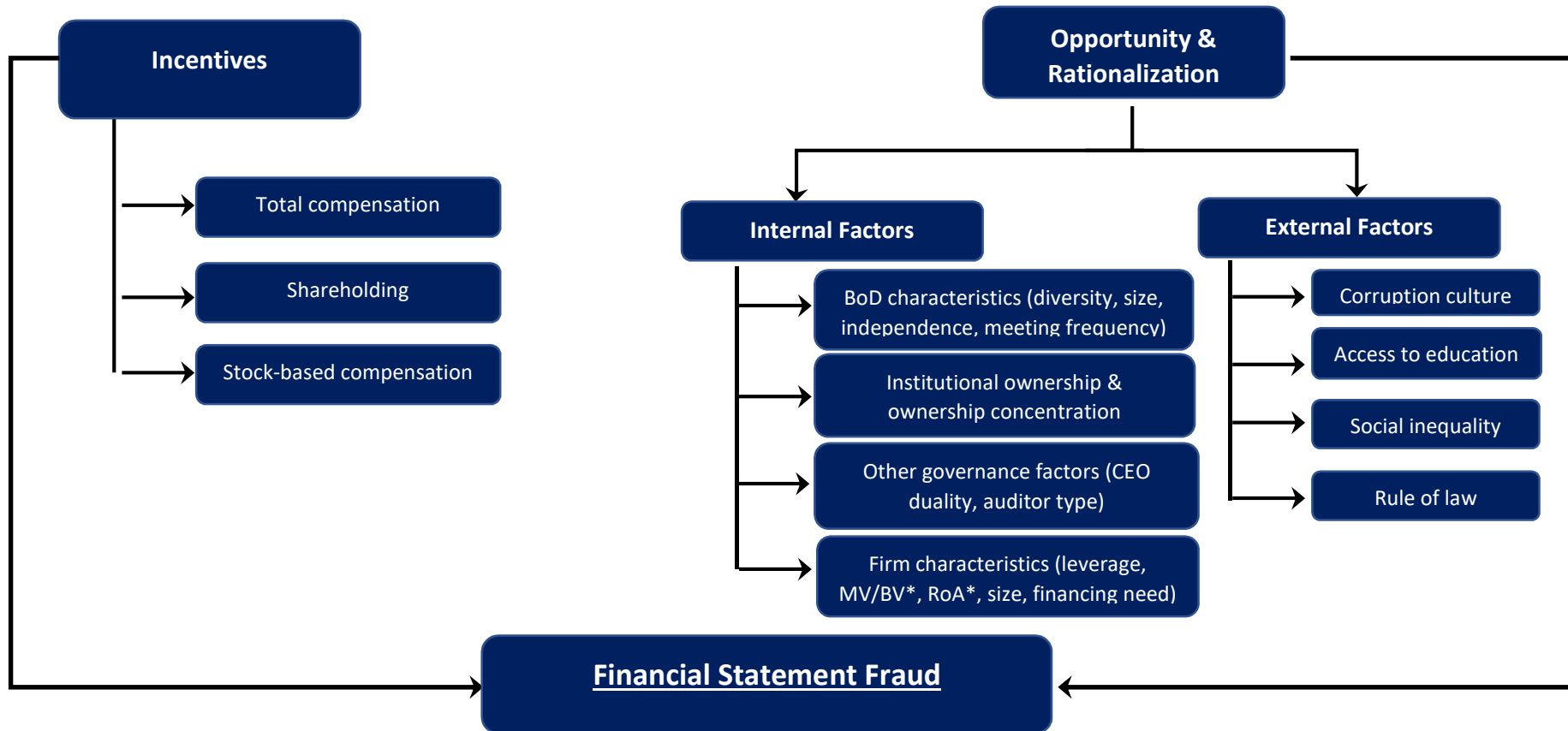
Thus, the main research question of this study is whether the quantum and structure of directors' compensation, under the 2CGM can induce the directors participate in FSF. Sub-research questions are:

- a. Does the level of directors' stock ownership in the corporation influence FSF?
- b. Does the design of directors' compensation package such as the proportion of stock-based compensation affect FSF?
- c. Do BoD characteristics such as independence and diversity influence the incidence of FSF?
- d. What role do corporate governance and firm-specific factors play in influencing the incidence of FSF?
- e. Despite the overarching influence of culture & legal/institutional structures on the different corporate governance systems, are there any best practices with respect to directors' compensation which can be adopted under the 2CGM to combat FSF? Also, is there an optimal structure of directors' compensation, or if not, what type of compensation is good enough?

The larger implication of this research on academic literature could be an outcome in the form of identification of best practices with respect to directors' compensation, which are relevant and adaptable in each of the 2CGM.

The present research combines the agency theory of corporate governance and the institutional theory and the theory of fraud to explain the occurrence of FSF in presence of directors' compensation including stock-based compensation. The research hypothesises that compensation, including stock- and option-based compensation, along with weak governance mechanisms, increases the propensity for FSF (refer to **Figure 4**).

Figure 4: Proposed model for interaction between FSF, Directors' compensation and CG



* Market value/book value (MV/BV), return on assets (RoA)

3. Research philosophy and methodology

3.1 Epistemology and ontology

This study is based on the ontological assumption that there is one true reality which is external, granular, and independent. The epistemological assumption is that knowledge is quantifiable and is based on facts which can be derived from good quality data based on numbers (Saunders et al., 2019).

3.2 Research philosophy

As regards the assumptions and beliefs regarding knowledge development, this thesis adopts a 'positivist' philosophy as it focuses on the discovery of measurable and observable facts and makes an attempt to identify a causal relationship between directors' compensation/remuneration and FSF. The hypotheses are developed using existing theoretical frameworks relating to agency and fraud. Further, the data collected is measurable and quantifiable. Finally, the methodology used is highly structured, which facilitates replication (Saunders et al., 2015).

3.3 Research approach

The research approach of this study is 'inductive' as the research project starts with collection of the relevant data to explore the phenomena of financial statement fraud and its relation to directors' compensation. The objective is to construct a conceptual framework by identifying patterns and themes (Saunders et al., 2015).

3.4 Research method

In line with the 'positivist' philosophy of this thesis, quantitative research methods have been adopted. Thus, it follows that the research findings from this thesis are likely to be generalizable and objective (Saunders, Lewis & Thornhill, 2019).

3.5 Research design

The present research project entails detailed analysis of two corporate governance systems (2CGM), with specific focus on directors' compensation and its implications on FSF. Since it is a comparative analysis, the research lends itself to comparative case-study design. This view is bolstered by Goodrick (2014), according to whom the comparative case-study method involves

extensive analysis of the differences and similarities across cases which have a common focus and the method's distinctive feature is its emphasis on examination of causality.

Further, this research uses the matched pairs design to compare fraud and no-fraud companies. An advantage of this method is that it reduces the variation between the fraud and no-fraud firms and thus the actual differences owing to the independent variables can be easily detected. Also, this design finds wide application in research related to clinical trials (Tang, et al., 2003) apart from research in accounting and finance.

Ndofor et al. (2015, p. 1781) argue that "the matching process itself controls for a number of possible differences in each pair of firms, in a manner similar to a repeated-measures regression". Johnson et al. (2009) and O'Connor et al. (2006) contend that matching by industry and firm size controls for firm and industry characteristics.

The methodology of comparison of matched pairs finds wide application in literature related to fraud and restatements. Ndofor et al. (2015) use the matched pairs design to determine the effectiveness of ratio analysis in detecting FSF whereas Kaminski (2004) use matched pairs design to find if the fraud firms differ from non-fraud firms in terms of their financial ratios. On the other hand, Abbott, et al. (2004), use the matched pairs design to determine the impact of audit committee on the incidence of financial restatements. Agrawal and Chadha (2005) use the matched pairs methodology to compare 159 firms that restated their financials with 159 firms that did not, on corporate governance characteristics.

Carcello and Nagy (2004b) use the matched pairs design to determine the association between financial statement fraud and auditor tenure and conclude that short auditor tenure can lead to FSF. Archambeault et al. (2008) employ this design to find association between audit committee compensation and restatements. On the other hand, Armstrong et al. (2010a) use the matched pair design to examine the linkages between CEO equity-based incentives and restatements. In an Italy based research, Romano and Guerrini (2012) compare fraud (i.e. firms subject to enforcement action related to accounting) and control firms on a set of corporate governance parameters. Feng et al. (2011), in a US based study, examine whether chief financial officers get involved in accounting manipulation using a sample of matched pairs of manipulating and non-manipulating firms.

O'Connor et al. (2006) also use the matched pairs design. In their study, as a first step, corporations/firms that had fraudulently inflated their financial results were identified. Then, as a second step, for each fraud firm, a matching no-fraud firm was identified. The fraud firms were those that had restated their financial statements during the period from 2000 to 2004. Only those firms which met the following three criteria were included in the study: that the restatement of financial statements was downwards; that the restatement was unrelated to non-financial matters or to changes in accounting principles; and

that the restatement was pursuant to pressure from regulatory agencies. For identification of matched firms, they employed eight matching variables, which were average net income, average annual net sales, average annual vesting period, firm independence, industry, public ownership, time period, and US citizenship.

Other studies that have used the matched pairs design include Beasley, 1996; Bell and Carcello, 2000; Carcello and Nagy, 2004a; Dechow et al., 1996; Erickson et al., 2006; Farber, 2005; and McMullen and Raghunandan, 1996.

3.6 Research method

As a first step in the research process, an in-depth study of the 2CGM has been undertaken with special focus on the aspects related to directors' compensation/compensation.

The study uses the matched pairs design. Hence, the second step entails identification of listed companies that have been found culpable of FSF under each of the two CG models. Subsequently, two groups are created under each of the CG models, with **Group A** comprising public/listed corporations which have suffered FSF, and **Group B (Control Group)** comprising listed corporations where no fraud has occurred or has been reported or found culpable, and which are closest to Group A companies in terms of size (market capitalisation/revenue/total assets), reporting period, and industry. The match year is the last year of non-fraudulent financial reporting by Group A companies. Thus, all variables shall be measured in the year before the fraud was committed (Hass et al., 2016).

A comparison has then been made of Group A companies with those in the Control Group on director's compensation and shareholding and other variables, to identify factors that may have induced FSF.

The results for each of the 2CGM are then be compared to better understand the effect of directors' compensation on FSF and its linkage to the CG models.

3.7 Sample selection

This study analyses and compares two of the most important economic powers of the world, the US and China. The table below gives a snapshot of the two countries to highlight their economic significance at the world level:

Table 2: Economic Significance of China and the United States (US)

Country Profile	China	United States	China as % of World	US as % of World
Population, total (millions)	1,392.73	327.17	18.3%	4.3%
GDP (current US\$) (billions)	13,608.15	20,544.34	15.8%	23.9%
Foreign direct investment, net inflows (current US\$) (millions)	2,03,492	2,58,390	17.0%	21.6%
Total reserves (current US\$) (millions)	31,68,216.33	4,49,907.09	-	-

*: Not Available; -: Not Applicable; Source: World Bank (2020)

Sample selection is done in two phases. In the **first phase**, listed companies which have been found guilty of FSF are identified in each of the two jurisdictions, namely China and the US.

For China, fraudulent companies are identified using data from China Stock Market and Accounting Research database (CSMAR) database. Prior studies such as Conyon and He, 2016; Hass et al., 2016; Lisic et al., 2015; Firth et al., 2005; and Sun et al., 2017 have all used this data source. Control firms were identified using data from DataStream.

For the US, the initial sample of fraud firms was obtained from the Securities Class Action Clearinghouse (SCAC). This study limits the examination to firms that are listed on the NYSE and NASDAQ, that also have class action lawsuits against them. NYSE and NASDAQ are chosen because they are the top two stock exchanges in the US. Control firms were identified using data from Capital IQ.

In the **second phase**, listed one company is short-listed (control firms), for each of the fraud firm identified in the first phase, to form matched pairs. In this phase, databases such as DataStream and Capital IQ have been used.

Three matching criteria were used. Firstly, industry-level matching was done by identifying control firms in the same industry (SIC Code, Level 1) as the fraud firm. Secondly, the control firm had to be the nearest match of the fraud firm in terms of the market capitalisation/ net sales/ total assets in the match year.

Lastly, the control firm had to have a clean slate i.e. not implicated for FSF during the sample period.

The year preceding the first year of fraud/FSF was designated as the 'match year'.

The sample selection is subject to some limitations, Firstly, only discovered cases of fraud have been included. However, there may be firms where fraud may have occurred but not yet discovered or revealed. Such undiscovered cases of fraud are not part of this study. Secondly, in case of US, we use data from SCAC. A limitation of this data is that US is a very litigious society (Levene, 2003; Trowbridge, 1989). Though class-actions were coined so that people with similar grievance could file a common suit but it has become a breeding ground of greed for lawyers translating into a lot of unnecessary litigation (Greenberg, 2003). To mitigate this risk, the present research has excluded cases which were 'voluntarily dismissed' or 'dismissed with prejudice' or 'dismissed' or 'voluntarily dismissed as moot', thus limiting the extent of unwarranted cases to a large extent. However, cases which were voluntarily dismissed but a related case continued in another court are included in the sample. Thirdly, the definition of FSF may differ between the 2CGMs. Fourthly, matching results in reducing the sample size as for some fraud firms a suitable no-fraud firm cannot be identified. Lastly, firms in the Control Group may be subject to fraud that has not been made public yet.

3.8 Data analysis

3.8.1 Probit regression

Matched pairs sample t-tests were conducted on the matching variables (i.e. market capitalisation, sales, and total asset) to confirm that the matching was robust and that the fraud firms and non-fraud firms were not significantly different (Kaminski, et al., 2004) on the three matching variables.

This study uses matched pairs design with a single probit model. Such model captures the joint probability of fraud being detected and committed (Wang, et al., 2019; Belhadji, et al., 2000). Further, according to Gujarati and Porter (2009) the probit regression model assumes normal distribution in error terms. As the dependent variable in this research is 'occurrence of FSF' which is a dummy binary variable, use of probit regression is recommended (Ullah, et al., 2019; Bertelli & Sinclair, 2015).

3.8.2 VIF analysis

Variance inflation factor (VIF) analysis is conducted to test for issues with respect to multi-collinearity. A VIF of less than 10 for all variables implies that the probit models have been well specified (Lin, et al., 2008).

3.8.3 Propensity score matching (PSM)

According to Guo, et al. (2020), a key assumption of regression analysis is that the independent variable is not correlated with the error/residual term. However, the categorisation of participants into control and treatment groups can result in selection bias which may translate in to the independent term being correlated with the error term. Thus, it is important to control for such selection biases to avoid wrong estimates of treatment effects, which is the core of the endogeneity problem. According to Roberts and Whited (2013, p.494) endogeneity in the context of regression implies 'correlation between the explanatory variables and the error term'. Endogeneity can arise on account of omitted variables (i.e. variables which should have been included, as explanatory variables, but have could not be included in the regression because they are unobservable or difficult to quantify), simultaneity (i.e. the independent variable causes changes in dependent variable and vice versa), reverse causality (i.e. dependent variable causes changes in independent variable), measurement error (i.e. difference in the value of the proxy and that of the true variable) (Reeb, et al., 2012; Roberts & Whited, 2013; Certo, et al., 2016; Bascle, 2008).

To deal with endogeneity, this study employs the propensity score matching (PSM). PSM is adopted to ascribe the observed effects to any change in independent variable, to the independent variable itself instead of attributing it to the endogenous characteristics of the firm (Luo & Wang, 2022; Conyon, et al., 2019). Similarly, according to Yuan and Wen (2018), key benefit of using propensity score matched control sample is that it permits the observed effects to be attributed to the independent variable. Rosenbaum and Rubin (1983, p. 41) argue that 'propensity score is sufficient to remove bias due to all observed covariates'. According to Reeb et al. (2012) propensity score matching rectifies non-random treatment effects including reverse causality. Further, this method is argued to reduce the number of extrapolations by removing firms that do not have comparable firms (either in control group or in the treatment group). Shipman, et al. (2017) support propensity score matching on the ground that concerns with respect to model specification are reduced when PSM is used. PSM is argued to reduce structural issues in the data such as non-linear relationship among variables.

In a study on CEO incentives and restatements, Armstrong et al. (2010a) employ propensity score matching and argue that as an econometric approach 'propensity score' is superior to other methods of controlling for confounders. Further, propensity score helps determine how sensitive the observed effects for the independent variable are to correlated omitted/unobserved variables.

However, this method suffers from a limitation that at a particular propensity score there might be several treated firms and few untreated firms, which might make matching tough (Reeb et al., 2012). Also, it is argued that propensity score matching may not address endogeneity issues with respect to

unobservable factors, however this method can alleviate endogeneity concerns on account of the relation between the dependent and the independent variable being misspecified (functional form misspecification) (Shipman et al., 2017).

3.8.4 Winsorization

A common methodological challenge with respect to research data is existence of 'outliers'. According to Aguinis (2014) data points that are markedly different from other data points are classified as outliers. According to Aguinis, et al. (2013), outliers can exert significant influence on the conclusions drawn regarding the relationship between variables.

Following Aguinis, et al. (2013), the outliers in the data in the present study are 'single construct outliers'. These outliers signify values that are either very large or too small in comparison to other values of a construct. Such values are, generally, found in the tale of the data distribution.

Some of the methods of dealing with outliers as outlined in Aguinis, et al. (2013) include removal of outliers, keeping the outlier and acknowledging its presence, report results with and without the outliers, winsorization, truncation, transformation, etc. Each of these techniques has its advantages and disadvantages. For instance: deleting the outlying values can result in deletion of interesting values which warrant further investigation and are not problematic observations (Aguinis, 2014).

In the present study we use winsorization. Winsorization involves 'transforming extreme values to a specified percentile of the data. For example, a 90th percentile winsorization would transform all the data below the 5th percentile to the 5th percentile, and all the data above the 95th percentile would be set at the 95th percentile' (Aguinis, et al., 2013, p.279). According to Brownen-Trinh (2019) winsorization alters the data in the tails and thus provides a better dataset. More specifically, winsorization 'replaces sample values above or below a given percentile of the sample distribution with the values at the respective percentiles' (Brownen-Trinh, 2019, p.105).

Winsorization is a commonly used method, by finance and accounting practitioners, to deal with outliers (Nayar et al., 2017; Brownen-Trinh, 2019). For instance: research by Ferreira, et al. (2012) and Clifford, et al. (2014) use winsorization to deal with outliers.

According to Keyton and Reifman (2010) an advantage of winsorization is that it protects from the adverse effects of outliers while preserving the highest and lowest values in the distribution. However, Leone et al. (2019) criticise winsorization stating that winsorization does little to mitigate the impact of outliers.

3.8.5 ANOVA

Analysis of variance (ANOVA) compares group means to determine, if the groups are statistically different from each other. ANOVA is a very popular statistical analysis tool especially among education research journals (Warne, et al., 2012; Shieh & Jan, 2014). In this thesis, ANOVA is used to compare the fraud firms in the US and China on the various variables representing the three legs of the fraud triangle framework.

3.8.6 Heteroscedasticity

An assumption of probit regression is homoscedasticity, i.e. the variance of the error term is constant. If the assumption of homoscedasticity is relaxed or doesn't hold true, then we have the problem of heteroscedasticity. Heteroscedasticity results in inconsistent and biased parameters.

In this thesis, heteroscedasticity is tested using the Breusch–Pagan/Cook–Weisberg test and the White test (Sing, et al., 2016; Bae & Kim, 2020; Berenguer-Rico & Wilms, 2021). Further, the issue of heteroscedasticity is addressed by calculating robust standard errors (Mansournia, et al., 2021).

3.9 Exploratory research

The spate of occurrences of FSF, which have afflicted corporations the world over, has made it imperative that one understands the reason for such frauds in order to devise means of avoiding it in future. Academic research can and has played an instrumental role in increasing the understanding of such crimes and in devising ways to combat them. Compensation has always been regarded as a potent tool for corporate governance. Directors' compensation is furthermore significant, as directors are a key mechanism in the CG structure. Thus, this research, which relates directors' compensation to FSF under the two CG models (2CGM) assumes considerable importance. However, this research is exploratory in nature, as it could emerge that factors other than directors' compensation such as cultural ethos, information asymmetry between directors and management, CEO duality, and limited independence of the BoD, etc. have greater impact on the incidence of fraud rather than compensation. For instance, Buck and Shahrin (2005) argue that cultural nuances have an impact on the governance environment. They contend that Germany, which works on welfare capitalism, has governance systems marked by a high level of uncertainty avoidance and promotion of collectivism, whereas the US, which relies on stock market capitalism, has governance policies tilted towards a low level of uncertainty avoidance and a focus on individualism.

3.10 Ethical considerations

The study proposes to use secondary sources of information. As there are no surveys or interviews envisaged in the research methodology, ethical concerns with respect to the anonymity of the participants or requirement of informed consent or invasion of privacy are not expected to be of relevance.

Any harm to the researcher is also not foreseen, as no personal or sensitive information with respect to the researcher is made public.

However, the research entails study of incriminating documents related to fraud and fraudsters. Hence, adequate caution has been exercised in abstaining from revealing personal details of the fraudsters.

4. Paper 1 – ‘Directors and financial statement fraud in China’

Abstract

Through an eclectic theoretical approach, this chapter examines whether directors’ compensation has an impact on financial statement fraud (FSF) perpetrated by listed companies. This study uses a sample of 903 ‘fraudulent’ firms and 903 control firms in China during the period from 2005 to 2018. The study finds that directors’ shareholding is positively associated with FSF. The results also suggest that firm performance (i.e. return on assets (ROA)), board attributes (such as CEO duality and frequency of board meetings), leverage, and ownership structure (i.e. the shareholding of the top 10 shareholders) have a significant influence on FSF. Among the two broad subcategories of directors, the study finds that the shareholding of non-independent directors has a positive association with FSF. These findings raise an important question in relation to directors’ shareholding because of the positive association between director shareholding and FSF. In addition, the design of pay-for-performance should be implemented in consideration of FSF incidences. Overall, this paper provides the evidence regarding the impact of directors’ compensation and shareholding on FSF in the Chinese context. The research also documents a significant impact of CEO duality, leverage, shareholding concentration, and frequency of board meetings on the incidence of FSF.

Keywords: China, Corporate Governance, Directors’ Compensation, Directors’ shareholding, Financial Statement Fraud.

4.1 Introduction

Financial statements fraud (FSF) can inflate earnings and consequently the decisions and expectations of shareholders (Petrou & Procopiou, 2016). It also has adverse consequences for creditors, employees, investors, pensioners, and other market participants (Rezaee, 2005). In the US, from 1997 to 2004, 30 high-profile financial scandals led to a market capitalisation loss of USD 900 billion, representing a 77% decline (Hogan et al., 2008). Further, the cost of funds for fraud firms experienced a considerable increase (Graham et al., 2008) which has adverse consequences for the financial markets and the institutional framework (Ball, 2009). Thus, a high quality of financial statements is vital, which in turn depends on the quality of corporate governance (Bonetti et al., 2016).

According to Fama and Jensen (1983) directors, by virtue of being delegated monitors and custodians of internal control, assume the responsibility of corporate governance, including financial reporting oversight via audit committees (Beasley, 1998). Directors play a vital role in setting the right 'tone at the top', which in turn affects internal controls, management oversight, truthfulness of financial statements, and the level of vigilance within the control environment (Brandes et al., 2016; Brennan & McGrath, 2007). The quality of internal controls determines the quality of financial statements as Altamuro and Beatty (2010) assert that improvements in internal control translate into a better quality of financial reporting and firms with weak internal controls have a lower quality of accruals (Doyle et al., 2007). Thus, directors play a critical role in detection and prevention of accounting fraud via their monitoring function, and to encourage them to carry out this function effectively it is vital that their interests are well aligned with those of the shareholders (Dalton et al., 2007). Therefore, it is imperative to look at the relationship between governance mechanisms, fraud, and the motivation of directors to set the right tone at the top. The motivation of directors, in turn, is a function of the alignment of their interests with those of the shareholders, and to achieve this alignment the compensation of directors needs to be well structured and well specified (Jensen & Meckling, 1976). Therefore, this paper examines the association between directors' compensation and FSF within the corporate governance and internal control framework. The study takes recourse to the agency and institutional theories to examine this relationship.

In doing this, this study focuses on assessing the relationship between FSF and directors' total compensation and shareholding. A large body of research has been undertaken on executive compensation and its impact on fraudulent behaviour, including earnings management, restatement of financial statements, and corporate fraud (Jiang et al., 2010; Harris & Bromiley, 2007; Laux & Laux, 2009; Conyon & He, 2016). However, there is a dearth of research on the relationship between directors' compensation and FSF. The present research addresses this gap, which helps us to examine if there are any elements in directors' compensation packages which can adversely affect the motivation for directors to set the right tone within the organisation, or which

can even act as an inducement to FSF. In addition, the study also examines the impact of directors' shareholding on FSF. Making executive compensation sensitive to firm performance by using bonuses, stock options, or share ownership is one way of mitigating the conflict of interest between shareholders and managers (Bushman & Smith, 2001; Jensen & Meckling, 1976). However, the literature provides an inconclusive view on the efficacy of stock-based compensation as a means to align interests. Prior research argues both in favour of (Bhagat & Bolton, 2008; Hambrick & Jackson, 2000; Kosnik, 1987; Kosnik, 1990) and against (Martin et al., 2019; Aboody, & Kasznik, 2000) stock-based compensation and shareholding. As personal gain is a key motivation for FSF (Brennan & McGrath, 2007), this research examines whether directors' shareholding acts as an inducement to commit FSF.

The sample consists of 903 'fraudulent' firms in China. The present research focuses on China as apart from being one of the largest and the fastest-growing economies in the world, it is "a political economy where government intervention and political considerations constantly interfere with corporate operation" (Jiang & Zhang, 2018, p. 134). Further, though the quality of financial statements is an issue of great concern for regulators, investors, and other stakeholders of all corporations, it assumes greater significance in high-growth markets with substantial domestic demand, such as China's, as low-quality financial statements may hinder the growth of such economies. According to Mo (2001), a percentage-point increase in corruption level reduces economic growth by 0.72%. Cieslik and Goczek (2018) in their study of 142 countries, from 1994 to 2014, also confirm that corruption hampers investment and thereby adversely affects economic growth. Gründler and Potrafke (2019) also report similar results in their study of 175 countries and conclude that one standard deviation increase in corruption index reduces real per capita gross domestic product (GDP) by 17%.

This study uses matched pairs design (by matching control firms by industry and size) and probit regression (as the outcome variable is binary). The results show a significant positive relationship between directors' shareholding and FSF, implying that stock-based compensation for directors should be used with caution. The results also indicate that CEO duality, leverage, shareholding concentration (the shareholding of the top 10 shareholders), return on assets (ROA), and frequency of board meetings have a significant influence on the incidence of FSF. These results are robust to a series of tests.

This study makes several contributions to the literature. Firstly, it contributes to the literature on corporate governance and on agency theory by focusing on directors, who are agents appointed by the shareholders. Understanding the motivations and behaviour of directors is imperative to understanding and regulating corporate behaviour. The present study furthers this understanding by investigating the association between fraudulent corporate behaviour, as evidenced in FSF, and motivation as evidenced in directors' compensation. Further it contributes to agency theory perspective by examining the impact of board diversity on FSF, as diversified boards enhance monitoring (Carter et al.,

2010). This research uses age and gender as two observable characteristics of diversity and finds that, contrary to the expectation, both have no significant influence on FSF. Secondly, it pays attention to the under researched institutional context of China and its interactions with FSF, especially because the Chinese government and the Chinese Security Regulatory Committee (CSRC) are motivated to improve the quality of financial statements to attract international investment (Lisic et al., 2015). The rest of the paper is structured as follows. Section 2 reviews prior research and presents the research hypotheses. In sections 3 and 4, methodology and results are presented. The findings are summarised and the conclusion is presented in section 5.

4.2 Literature review and hypothesis development

4.2.1 Compensation and governance

Corporate governance and compensation are intertwined, with good governance translating into better compensation systems and excessive compensation being an indicator of poor governance (Li et al., 2007). According to Firth et al. (2007a), corporations with larger board size pay less CEO compensation, while a higher proportion of non-executive directors increases the likelihood of performance-based compensation. The authors also argue that CEO duality results in a reduced use of performance-linked pay. Also, the presence of foreign investors tends to increase CEO pay, unlike substantial government holding. Conyon and He (2011) find that a high proportion of independent directors results in a tighter relationship between pay and performance. According to Liu et al. (2017), cash bonuses are influenced by the quality of governance. Armstrong et al. (2012) find evidence of high CEO compensation in corporations with weak governance, a view supported by Core et al. (1999). However, Li et al. (2007) find that board size and CEO duality have no impact on CEO compensation, but that CEO stock ownership and foreign investors are positively linked to CEO compensation. Similarly, Conyon and He (2012) do not find any association between CEO compensation and internal governance factors such as CEO duality, board size, and proportion of outside directors.

4.2.2 Fraud and governance

Weak corporate governance is often considered a precursor to fraud and vice versa (Beasley, 1996; Agrawal & Chadha, 2005; Chen et al., 2006; Farber, 2005). Yu et al. (2015) argue that in a weak institutional environment coupled with persistent information asymmetry, scandals are a reflection of governance issues faced by all firms with a similar corporate governance structure (Adegbite, 2010, 2012). Zhizhong et al. (2011) argue that financial restatements can be avoided by employing strong internal governance mechanisms. Li et al. (2021a) contend that good governance can help prevent fraudulent firms from using CSR activities as a facade to cover up fraudulent financial reporting. Chen

et al. (2006) find that increasing the proportion of outside directors on the board of directors (BoD) reduces the likelihood of FSF. On the contrary, Shi et al. (2017) argue that pressure exerted by external governance agents/mechanisms such as security analysts, activist owners, and market for corporate control, can induce managers into committing financial fraud.

4.2.3 Fraud and compensation

Research on the association between fraud and compensation remains inconclusive. Efendi et al. (2007) find empirical evidence of a positive association between accounting irregularities and in the money stock options of CEOs. Hogan and Jonas (2016) contend that the likelihood of high-quality transparency disclosures reduces with an increase in the equity portion of executive pay. In a similar vein, Harris and Bromiley (2007) and Harris, Karl, and Lawrence (2019) argue that financial misrepresentation is more likely when CEOs have a high percentage of their compensation in stock options. On the other hand, Conyon and He (2016) document a statistically significant and negative association between corporate fraud and CEO compensation. Similarly, Zhou et al. (2018) document a negative relationship between executive compensation and corporate fraud. However, when the value of shareholding is introduced in the analysis, then delisting pressure may induce fraud.

4.2.4 Hypothesis development

This study uses agency and institutional theories (Scott, 1987; Meyer & Rowan, 1977; Doherty et al., 2014) to support the examination into the effect of directors' compensation, directors' shareholding, as well as BoD independence and diversity on FSF. From an agency perspective, directors are agents of the shareholders (Reeb & Zhao, 2013), and in order to keep their interests aligned with those of their principals, prior studies have suggested the design of appropriate incentives/compensation (Jensen & Meckling, 1976). However, compensation can itself aggravate the agency problem. According to Arye Bebachuk and Fried (2003, p. 72) "executive compensation is viewed not only as a potential instrument for addressing the agency problem but also as part of the agency problem itself". Barton (2001) finds that managers engage in earnings management to increase their cash compensation. Similarly, Healy (1985) shows that managers select those accounting procedures that maximise the value of their bonuses (O'Connor et al., 2006; Cheng & Warfield, 2005; Bergstresser & Philippon, 2006).

In China, firms prefer to use cash-based compensation (Huang & Boateng, 2017), while stock-based options are seldom offered (Adithiyankul et al., 2011; Bai et al., 2004). This preference for cash is rooted in cultural factors such as the expectation of financial independence from adults and in economic factors such as inflation (Chiu et al., 2002). The limited research on executive

compensation and fraud in China provides mixed evidence. For example, Zhou et al. (2018) find a negative relationship between executive compensation and corporate fraud, however this association is not significant under certain circumstances. Contrarily, Ye (2014) reports a positive association, which implies that compensation could induce self-serving or even fraudulent behaviour. From an agency theory perspective, the foregoing studies suggest that compensation may play a role in inducing fraudulent behaviour among directors (as agents of shareholders). Thus, the study hypothesises that:

H1: Directors' compensation is positively associated with FSF.

Jensen and Meckling (1976) propound the use of stock ownership as a mechanism to align the divergent interests of agents and principals. However, with stock ownership, a change in share prices would result in a change in the wealth of agents, hence the agents may be induced to undertake earnings manipulation (Petrou & Procopiou, 2016; Hass et al., 2016b). Therefore, it is vital to understand the impact of directors' shareholding on FSF. Empirical evidence on the efficacy of stock-based compensation is inconclusive. Bhagat and Bolton (2008), Kosnik (1987), Kosnik (1990), and Hambrick and Jackson (2000) argue in favour of stock ownership by directors/executives. However, Rose et al. (2013) state that stock ownership can affect the objectivity and independence of the directors. Martin et al. (2019) also question the ethics of equity incentives and conclude that CEOs can resort to pension underfunding in order to obviate any risk to stock price and thereby to their option wealth.

With respect to the association between fraud and share-based compensation, Huang and Boateng (2017) find that higher shareholding by executives gives them stronger structural power, which in turn may result in larger forecast errors. However, Lai and Tam (2017) do not find any association between management equity shareholding and earnings management. Thus, the evidence of association between shareholding and fraud is also inconclusive and such evidence between directors' shareholding and FSF is miniscule. Hence, this warrants further investigation especially in the Chinese context, as stock ownership is traditionally a measure of internal governance adopted by developed nations and its efficacy in an emerging market like China's (with a different ownership structure and institutional setting) needs to be established (Hass et al., 2016b; Chen et al., 2016). Additionally, a crime is committed when its benefits exceed the punishment associated with it (Becker, 1968; Ehrlich, 1973). Employing the institutional theory, it can be argued that in China, given its weak legal environment (Jiang & Kim, 2015) and weak formal governance structures (Estrin & Prevezer, 2011), the probability of being caught is low and hence directors may have an incentive to participate in FSF to maximise their wealth. Therefore, it is hypothesised that:

H2: Directors' stockholding is positively associated with FSF.

In the corporate governance context, independent directors play a significant role in monitoring and challenging executive directors, thereby mitigating agency issues (Jiang et al., 2016), deterring fraud, exposing corporate

wrongdoing, and implementing corporate fiduciary duty (Beasley et al., 2000; Kuang & Lee, 2017). Jiang et al. (2016) argue that BoD independence augurs well for corporations, as independent directors' interests are aligned more to that of shareholders than to that of management. Similarly, Hu et al. (2017) find that independent directors, through their monitoring power, improve the quality of internal control. This is a view supported by Zhizhong et al. (2011), who contend that the presence of independent directors is vital in ensuring a high quality of accounting information. Firth et al. (2007b) find that a high proportion of independent directors improves the quality of earnings informativeness. Tang et al. (2013) contend that in wake of the mandatory disclosure (MD) rule in China, independent directors can protect the interests of outside investors, as the stock markets react negatively to independent directors' modified opinions.

Detection and deterrence of fraud is another forte of independent directors. Chen et al. (2006) report a statistically significant and negative relationship between fraud and the proportion of outside directors. Lai and Tam (2017) also support the benign effect of independent directors on avoidance of earnings management. Therefore, from an agency theory perspective, the hypothesis is that:

H3: The presence of independent directors is negatively associated with FSF.

The association between board diversity and effectiveness has long aroused the interest of academic researchers. Bernile et al. (2018) argue that board diversity is vital as it reduces stock volatility, results in the adoption of stable corporate policies and increases investment in R&D. BoD diversity has also been found to promote transparency in the corporate information environment (Upadhyay & Zeng, 2014), which indirectly increases firm value (Carter et al., 2003) via enhanced social and ethical compliance (Isidro & Sobral, 2015), and increases stock-price informativeness (Gul et al., 2011). Anderson et al. (2011) find evidence of improvement in firm performance with BoD diversity. Other studies arguing in favour of diversified boards include Wahid, 2019; García et al., 2017; Post and Byron, 2015; Adegbite, 2015; and Chijoke-Mgbame et al., 2020. However, the evidence is inconclusive, as Harjoto et al. (2018) do not find any association between board performance and board diversity. Similarly, Adams and Ferreira (2009) argue that gender diversity on the BoD may lead to a decrease in shareholder value when gender-based quotas are enforced by well-governed BoDs, which may result in over-monitoring.

In China too, the empirical evidence on the efficacy of board diversity is mixed. Cheng et al. (2010) find that older chairpersons enable better firm performance. Xu et al. (2018) find that board members' average age is negatively related to the probability of corporate fraud. Daboub et al. (1995) argue that traits such as hesitation over challenging rules and preference for a routine in the elderly reduce the probability of their engaging in illegal corporate activity. Thus, with increase in age, the incidence of fraud can be expected to decrease. Ho et al. (2015) find female CEOs are more conservative in terms of their reporting of earnings. Liu et al. (2016) and Liao et al. (2019)

also find female CFOs less amenable to earnings management/accounting fraud. Reason for this conservativeness on the part of female CFOs is that “women in Chinese firms have to meet a higher standard of effectiveness than men to attain executive positions and to retain them over time”; also, “according to Chinese culture, females are expected to be particularly introverted in their conduct” (Liao et al., 2019, p. 460). However, McGuinness et al. (2015) find that greater representation of female directors on the BoD does not result in lower cash distribution among Chinese corporations.

This study uses age and gender, both relation-oriented dimensions, as measures of BoD diversity (Harjoto et al., 2018), as these two dimensions have a bearing on risk-taking and ethical behaviour. Older directors can be expected to bring a diverse range of ideas owing to their experience and they also provide greater stability to the BoD (Anderson et al., 2011) whereas female directors enable better monitoring. From an institutional theory perspective, BoD diversity has been argued to be a function of institutional systems, especially cultural and legal institutions (Grosvold & Brammer, 2011; Saeed et al., 2016; Mensi-Klarbach et al., 2021; Carrasco et al., 2015) whereas from the agency theory perspective, BoD diversity is argued to result in enhanced monitoring (Mateos de Cabo et al., 2012; Terjesen et al., 2009; Carter et al., 2010). Thus, the next hypothesis is that:

H4: More diversified BoDs are negatively associated with FSF.

4.3 Research method

4.3.1 Data and sample

The initial sample of 2,344 fraud firms was obtained from CSMAR. Duplicate cases and corporations for which the violation year was not available were excluded. Corporations which appeared in two continuous time periods were included only once. After these adjustments, the final list consisted of 1,312 fraud firms. After excluding firms for which required data were not available or for which a suitable control firm could not be found, the final sample comprised 903 fraud firms. The sample period is from 2005 to 2018 (year of start of violations). The year immediately preceding the first alleged fraud year is used as the match year/reference year for variable measurement (Erickson et al., 2006; Hass et al., 2016b). Directors’ data, BoD details and other data for the match year for the fraud firms and the control firms were obtained from CSMAR, whereas financial data was collected from DataStream.

4.3.2 Research design

This study uses matched pairs design (Abbott et al., 2004; Archambeault et al., 2008; Armstrong et al., 2010; Feng et al., 2011). Control firms are identified using three shortlisting criteria. Firstly, the control firm had to have the same

SIC Code (Level 1) as that of the fraud firm (industry-level matching). Secondly, the control firms are firms not implicated for FSF during the sample period. Thirdly, among the potential control firms for a fraud firm (within the same SIC Code in the match year), the closest match in terms of the market capitalisation or net sales or total assets in the match year is chosen.

O'Connor et al. (2006) regard the matched pairs design to be very powerful. They argue that industry characteristics (such as environmental uncertainty, market structure, regulatory environment, and resource scarcity) and firm characteristics (such as size) also affect the likelihood of fraudulent financials and these variations can be controlled by matching by industry and firm size. Johnson et al. (2009, p. 135) also argue that “using matched pairs implicitly controls for industry, firm size, and industry growth opportunities”.

Dependent variable

The main dependent variable is occurrence of FSF (Fraud), which is equal to 1 if the firm is a fraud firm and 0 if the firm is a control firm (Crutchley & Minnick, 2012; Hass et al., 2016b; Zhang et al., 2008).

Independent variables

In order to test **H1**, the study uses log value of the total compensation (salary and allowance) of all directors as the independent variable (Canyon & He, 2016; Canyon & He, 2012).

In relation to **H2**, the study measures directors' shareholding as a proportion of the number of shares held by all directors over the total number of outstanding shares (Hass et al., 2016b; Bai et al., 2004).

H3 and **H4** are tested by including variables – the percentage of independent directors on the boards (IDPRCT), average age of all directors (AvgAge), and percentage of female directors on the boards (FDPRCT) across all regression models. AvgAge and FDPRCT are measures of BoD diversity.

This study divides directors into two broad categories: independent directors (ID) and non-independent directors (NID). Directors who have been explicitly identified as independent directors by CSMAR's corporate governance database have been classified as IDs and all other directors are considered to be NIDs (Chen et al., 2020).

Control Variables

The study controls for variables related to the firm, corporate governance, and ownership. Frequency of board meetings, size of the board, auditor type, and CEO duality are governance-related control variables. Chen et al. (2006) argue that there is a positive association between frequency of BoD meetings and the incidence of fraud, whereas Liang et al. (2013) document a positive impact of the frequency of BoD meetings on the performance and assets quality of banks. With respect to CEO duality, Chen et al. (2010) find that CEO duality results in

higher compensation for CEOs. Bai et al. (2004) find that CEO duality has a significant negative impact on the market valuation of corporations. Similarly, Hass et al. (2016a) argue that CEO duality can reduce performance persistence (measured by ROA) in the short term. However, Mutlu et al. (2018), Chen et al. (2006), and Lai and Tam (2017) do not find any impact of CEO duality on firm performance or on earnings management.

Liang et al. (2013) document a negative impact of BoD size on the performance of banks. With respect to auditors, Chen et al. (2011) report reduction in earnings management when better-quality auditors are used by non-state-owned enterprises. DeFond et al. (1999) report a decline in market share of large auditors who are independent and are more likely to issue modified audit opinions. This implies that auditors of the right type and size could deter FSF.

On the ownership front, institutional investors can be key to good governance. Hou et al. (2016) link corporate governance to institutional ownership and argue that, in China, since the split-share reform, executive compensation has become more sensitive to firm performance, implying that institutional ownership reduces agency conflicts and thereby agency costs.

Firm-level variables such as return on assets (ROA), industry, modified leverage, and market-to-book ratio (MV/BV) are also included. Leverage is included to control for the possibility of FSF being committed due to financial distress. Leverage is controlled for by computing modified leverage (MLEV) as leverage divided by total assets. ROA and MV/BV are measures to control for poor financial performance. Further, ROA is also used to control for the possibility of rent extraction. The study controls for 'industry' (by selecting control firms with the same SIC code as that of the fraud firm), because certain industries are associated with earnings management (Agrawal & Chadha, 2005; Erickson et al., 2006; Hass et al., 2016b; Conyon & He, 2016; Zhang et al., 2008). Finally, shareholding concentration represented by T10SPRCT and measured by the ownership percentage of the top 10 shareholders has also been included (Ying et al., 2017).

Additional governance variables

As a robustness check, additional governance variables have been introduced in the regression analysis, which include percentage ownership of controlling shareholder (CSPRCT); auditors' opinion (AudOP); and percentage ownership of foreign promoters (FSPRCT). CSPRCT is a control measure for influence of the controlling shareholder whereas FSPRCT controls for the influence of foreign promoters. The definitions of the various variables are set out in **Appendix 1**.

4.3.3 Regression models

The regression models used for examining the various hypotheses are detailed below.

To examine the impact of directors' compensation on FSF (**H1**), the impact of independent directors, and diversity of the board on FSF (**H3** and **H4**), **Model 1** is used as below:

$$\text{Fraud}_{i,t} = \alpha_{i,t} + \theta_1 \text{I_TCD}_{i,t-1} + \text{IDPRCT} + \text{FDPRCT} + \text{AvgAge} + \beta_1 \text{Controls (governance, performance and others)}_{i,t-1} + \varepsilon_{i,t}.$$

(Model 1)

To test the impact of directors' shareholding on FSF (**H2**), **Model 2** is used as below:

$$\text{Fraud}_{i,t} = \alpha_{i,t} + \theta_2 \text{DSRPT}_{i,t-1} + \text{IDPRCT} + \text{FDPRCT} + \text{AvgAge} + \beta_1 \text{Controls (governance, performance and others)}_{i,t-1} + \varepsilon_{i,t}.$$

(Model 2)

In the above models, Fraud is a dummy variable. Controls represents control variables, which include variables related to firm-level characteristics and corporate governance measures (Harris & Bromiley, 2007; Johnson et al., 2009; O'Connor et al., 2006).

4.4 Descriptive results

4.4.1 Descriptive statistics

Table 1 provides descriptive statistics for all firms combined, while Table 2 offers a comparative view of the fraud and no-fraud/control firms.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
I_TCD	1,800	14.01	0.96	10.13	17.07
DSRPT	1,806	10.58%	0.19	0.00%	88.83%
I_TCNID	1,725	13.92	0.97	8.70	17.07

Variable	Obs	Mean	Std. Dev.	Min	Max
NIDSPRCT	1,806	10.57%	0.19	0.00%	88.83%
I_TCID	1,764	12.05	0.55	8.70	15.00
IDSPRCT	1,806	0.00%	0.00	0.00%	0.05%
IDPRCT	1,806	37.31%	0.07	18.18%	70.00%
FDPRCT	1,806	12.81%	0.11	0.00%	66.67%
AvgAge	1,806	50.03	3.83	37.83	63.71
ROA	1,801	4.49%	0.08	-77.54%	165.21%
MVBV	1,792	5.06	24.51	-121.13	816.06
ABig4	1,806	0.03	0.18	0.00	1.00
BoardSize	1,806	10.02	2.47	5.00	23.00
CDual	1,806	0.01	0.08	0.00	1.00
InOPRCT	1,736	6.25%	0.08	0.00%	75.10%
MLEV	1,806	0.24	0.22	0.00	3.97
NoBM	1,805	9.26	3.63	2.00	32.00
T10SPRCT	1,806	57.12%	0.16	4.45%	93.41%
I_FS	1806	14.78	1.16	8.82	22.56

Variables are defined as follows: I_TCD (log of Directors' total compensation), DSPRCT (Shareholding of all directors (%)), I_TCNID (log of non-Independent directors' total compensation), NIDSPRCT (shareholding of non-executive non-independent directors (%)), I_TCID (log of independent directors' total compensation), IDSPRCT (shareholding of independent directors (%)), IDPRCT (% of independent directors on BoD), FDPRCT (% of female directors), AvgAge

(average age of all directors), MLEV (match year modified total debt), ROA (match year return on assets (%)), MVBV (match year market value/ book value), CDual (CEO and chair of bod same person), BoardSize (total number of directors), NoBM (frequency of board meetings), ABig4 (auditors from “Big 4” accounting firms or not), InOPRCT (institutional ownership), T10SPRCT (shareholding of top 10 shareholders), I_FS (firm size), CSPRCT (percentage ownership of controlling shareholder), SOE (state-owned enterprise), AudOP (financial auditor opinion), FSPRCT (percentage ownership of foreign promoter), PPCD (proportion of politically connected directors). Appendix 1 defines all the variables used.

Table 2: Statistical Description of Fraud vs. Control Firms, 2005–2018

Variable	Fraud		Control		p-value	Fraud	Control	p-value
	Obs	Mean	Obs	Mean		Median	Median	
I_TCD	899	13.97	901	14.04	0.16	14.10	14.10	0.25
DSPRCT	903	10.53%	903	10.62%	0.93	0.01%	0.01%	0.37
I_TCNID	859	13.90	866	13.94	0.32	13.98	13.98	0.41
NIDSPRCT	903	10.53%	903	10.62%	0.93	0.01%	0.01%	0.35
I_TCID	877	12.03	887	12.07	0.12	12.10	12.10	0.15
IDSPRCT	903	0.00%	903	0.00%	0.31	0.00%	0.00%	0.89
IDPRCT	903	37.06%	903	37.57%	0.10	33.33%	36.36%	0.04
FDPRCT	903	12.82%	903	12.80%	0.96	11.11%	11.11%	0.76
AvgAge	903	49.95	903	50.12	0.37	49.89	50.09	0.21
ROA	900	3.50%	901	5.48%	0.00*	3.67%	4.55%	0.00*
MVBV	897	6.08	895	4.05	0.08	3.24	3.04	0.28

Variable	Fraud		Control		p-value	Fraud		p-value
	Obs	Mean	Obs	Mean		Median	Median	
ABig4	903	0.03	903	0.04	0.03*	0.00	0.00	0.03*
BoardSize	903	10.04	903	9.99	0.70	9.00	9.00	0.76
CDual	903	0.01	903	0.00	0.08	0.00	0.00	0.08
InOPRCT	864	5.93%	872	6.57%	0.09	2.83%	3.72%	0.08
MLEV	903	0.27	903	0.22	0.00*	0.26	0.18	0.00*
NoBM	902	9.56	903	8.96	0.00*	9.00	8.00	0.00*
T10SPRCT	903	55.34%	903	58.89%	0.00*	56.19%	60.85%	0.00*
I_FS	903	14.78	903	14.78	0.99	14.69	14.65	0.90

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; To check the robustness of the “matching” we conducted *t*-tests. *p* values of the *t*-tests are not significant, which implies that the fraud firms and control firms are similar in size and that the matching is robust (Table 12).

As is evident from Table 2, average directors’ compensation is higher for control firms as is also the shareholding of directors. With respect to diversity of the BoD, fraud firms tend to have younger boards and higher female representation. On the governance front, CEO duality is higher for fraud firms vis-à-vis control firms. This is intuitive, as when the CEO also acts as the chair of the BoD, he/she can exercise greater control over the BoD, which can open gateways for the manipulation of financial statements. The control firms also have a greater percentage of independent directors on the board, fewer board meetings, and are more likely to have an auditor from the one of the Big 4 audit firms. On the other hand, fraud firms have higher leverage (high MLEV) and were valued more in the equities market (higher MVBV). With respect to ROA, control firms fare better. Most of these results are in line with prior research, which has provided empirical evidence of weakness in governance mechanisms among fraud firms in comparison to control firms. These flaws in governance include a lower proportion of independent directors, CEO duality, and an

auditor not from one of the Big 4/5 audit firms (Beasley, 1996; Farber, 2005; Davidson III et al., 2004; Chen et al., 2011; Lennox & Pittman, 2010).

4.4.2 Correlation matrix

The correlation of I_TCD and DSPRCT, representing compensation and shareholding of all directors, with compensation and shareholding of NID is high (**Table 3**). That is understandable as non-independent directors' compensation and shareholding is the major sub-set of all directors' compensation and shareholding, respectively. To deal with this issue of high multi-collinearity, separate models are run for all directors, NIDs, and IDs. The study also conducts VIF analysis of all models, and the results suggest that multi-collinearity is not an issue (**Table 13**).

Table 3: Correlation Matrix

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
I_TCD (1)	1.000									
DSPRCT (2)	0.209**	1.000								
I_TCNID (3)	0.986**	0.195**	1.000							
NIDSPRCT (4)	0.209**	1.000**	0.195**	1.000						
I_TCID (5)	0.568**	0.045****	0.497**	0.045****	1.000					
IDSPRCT (6)	-0.035	-0.038	-0.044****	-0.038****	-0.046****	1.000				
IDPRCT (7)	0.079**	0.125**	0.030	0.125**	0.155**	0.009	1.000			
FDPRCT (8)	0.095**	0.166**	0.085**	0.166**	-0.009	-0.017	0.049*	1.000		
AvgAge (9)	0.201**	-0.080**	0.178**	-0.080**	0.237**	-0.053*	0.132**	-0.085**	1.000	
ROA (10)	0.089**	0.139**	0.119**	0.139**	0.053*	-0.011	0.028	0.018	0.035	1.000
MVBV (11)	-0.049*	-0.020	-0.071**	-0.020	-	-0.005	-0.001	0.034	-0.034	0.021

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		
ABig4 (12)	0.111**	-0.086**	0.120**	-0.086**	0.192**	-0.005	0.027	-0.024	0.110**	-0.006		
BoardSize (13)	0.223**	-0.128**	0.198**	-0.128**	0.299**	-	0.038****	-0.083**	-0.021	0.102**	0.024	
CDual (14)	0.030	-0.006	0.023	-0.006	0.035	-0.007	0.023	0.028	0.036	0.009		
InOPRCT (15)	0.125**	-0.049*	0.100**	-0.049*	0.094**	-0.025	-0.017	-	0.042****	0.035	0.132**	
MLEV (16)	-	0.082**	-0.243**	-0.058*	-0.243**	-0.004	0.035	-0.060*	-0.062**	-0.021	-	0.152**
NoBM (17)	0.191**	0.039****	0.171**	0.039*	0.145**	0.018	0.083**	0.083**	-	0.045****	-0.009	
T10SPRCT (18)	0.048*	0.285**	0.059*	0.285**	0.074**	0.004	0.062**	-	0.002	0.142**		
I_FS (19)	0.395**	-0.157**	0.393**	-0.157**	0.441**	-0.015	0.039****	-0.065**	0.336**	-0.058*		

* $p < 0.05$, ** $p < 0.01$, **** $p < 0.1$

Table 3: Correlation Matrix (Contd.)

Variable	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
MVBV (11)	1.000								
ABig4 (12)	-0.017	1.000							
BoardSize (13)	-0.009	0.098**	1.000						
CDual (14)	-0.007	0.133**	0.052*	1.000					
InOPRCT (15)	0.005	0.003	0.083**	0.015	1.000				
MLEV (16)	-0.021	0.028	0.081**	0.006	-0.002	1.000			
NoBM (17)	0.012	-0.009	0.064**	0.009	0.113**	0.109**	1.000		
T10SPRCT (18)	-0.067**	0.080**	-0.004	-0.045****	0.042****	-0.151**	-0.017	1.000	
I_FS (19)	-0.107**	0.253**	0.279**	0.058*	0.162**	0.251**	0.221**	0.083**	1.000

* $p < 0.05$, ** $p < 0.01$, **** $p < 0.1$

4.4.3 Empirical results

To test the hypotheses, probit regression analysis is undertaken as probit is a suitable regression method when the outcome variable is binary (Ullah et al, 2019; Chen et al., 2018; Chen et al., 2006). The large sample size in this study further stands in favour of using probit regression as probit models, which are based on the maximum likelihood technique, require a large number of observations (UCLA¹⁵).

Table 4 sets out the result of probit regression for all the hypotheses. The results indicate an insignificant association between directors' compensation and FSF. Therefore, **H1** cannot be accepted. **H2**, concerning the association between directors' shareholding and FSF, is accepted, with DSPRCT having a significant positive coefficient, which implies that the incidence of FSF increases as directors' shareholding increases. This result finds support in research that argues against the use of stock-based compensation (Aboody & Kasznik, 2000; Martin et al., 2019; Rose et al., 2013; Boumosleh, 2009). No significant association is found between the presence of independent directors on the BoD and FSF. This outcome is supported by Firth et al. (2011) and Hass et al. (2016a). Thus, **H3** is rejected. With respect to BoD diversity (**H4**), no significant causal relationship between percentage of female directors or directors' age and FSF is found. Hence, **H4** finds no support in the empirical results and is rejected. An insignificant impact of female directors on the board finds support in research by McGuinness et al. (2015), Carter et al. (2010), and Harris et al. (2019).

Table 4: Probit Regression Results

	Model 1	Model 2
I_TCD	0.00 (0.90)	
DSPRCT		0.45* (0.01)
IDPRCT	-0.79	-0.90

¹⁵ University of California, Los Angeles (UCLA), Probit Regression, Stata Data analysis examples. Available from: <https://stats.idre.ucla.edu/stata/dae/probit-regression/>. Accessed on 18 August 2021.

	Model 1	Model 2
	(0.10)	(0.06)
FDPRCT	-0.08 (0.77)	-0.17 (0.54)
AvgAge	0.00 (0.91)	0.00 (0.83)
ROA	-2.35*** (0.00)	-2.49*** (0.00)
MVBV	0.01 (0.13)	0.01 (0.11)
ABig4	-0.36* (0.05)	-0.34 (0.06)
BoardSize	0.00 (0.90)	0.00 (0.76)
CDual	0.83* (0.04)	0.82* (0.04)
InOPRCT	-0.54 (0.18)	-0.48 (0.23)
MLEV	0.65** (0.00)	0.73*** (0.00)
NoBM	0.03** (0.00)	0.03** (0.00)

	Model 1	Model 2
T10SPRCT	-0.44* (0.04)	-0.57** (0.01)
I_FS	-0.03 (0.49)	-0.02 (0.66)
_cons	0.51 (0.43)	0.43 (0.46)
N	1,713	1,718

*p-values in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; N- No. of observations*

Among the other control variables, CDual(+), MLEV(+), NoBM(+), ROA(-), and T10SPRCT(-) continue to be significant across Models 1 and 2, implying that these variables have an influence on the incidence of fraud. The positive association between NoBM and FSF, though counter-intuitive, is not unprecedented. Chen et al. (2006) also report a positive association between frequency of BoD meetings and the incidence of fraud. That high leverage increases the incidence of fraud is the conclusion that can be drawn from the significant positive association between FSF and MLEV. Firth et al. (2011) and Zhou et al. (2018) also support this conclusion. The negative association between ownership concentration (T10SPRCT) and FSF is contrary to the expectation.

MVBV and board size are insignificant across all the models. Lai and Tam (2017) support the absence of any association between earnings management and BoD size. Chen et al. (2006) also do not find any association between fraud and board size.

4.4.4 Additional analysis

For additional analysis, we use **Models 3(a)** and **4(a)** to test the impact of non-independent directors' and independent directors' compensation, respectively, on the incidence of FSF. **Models 3(b)** and **4(b)** are used to test the impact of non-independent directors' and independent directors' shareholding, respectively, on the incidence of FSF.

$$\text{Fraud}_{i,t} = \alpha_{i,t} + \theta_1 I_TCNID_{i,t-1} + IDPRCT + FDPRCT + \text{AvgAge} + \beta_1 \text{Controls (governance, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

Model 3(a)

$$\text{Fraud}_{i,t} = \alpha_{i,t} + \theta_2 NIDSPRCT_{i,t-1} + IDPRCT + FDPRCT + \text{AvgAge} + \beta_1 \text{Controls (governance, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

Model 3(b)

$$\text{Fraud}_{i,t} = \alpha_{i,t} + \theta_1 I_TCID_{i,t-1} + IDPRCT + FDPRCT + \text{AvgAge} + \beta_1 \text{Controls (governance, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

Model 4(a)

$$\text{Fraud}_{i,t} = \alpha_{i,t} + \theta_2 IDSPRCT_{i,t-1} + IDPRCT + FDPRCT + \text{AvgAge} + \beta_1 \text{Controls (governance, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

Model 4(b)

The results are presented in **Table 5**. In the additional analysis above, NIDSPRCT has a significantly positive association with FSF whereas IDPRCT, FDPRCT, and AvgAge are insignificant, which is in line with the results for Models 1 and 2.

Table 5: Additional Analysis (Probit Regression)

	Model 3a	Model 3b	Model 4a	Model 4b
I_TCNID	0.01 (0.75)			
NIDSPRCT		0.45* (0.01)		
I_TCID			-0.04 (0.53)	
IDSPRCT				-1,894.50

	Model 3a	Model 3b	Model 4a	Model 4b
				(0.12)
IDPRCT	-0.85 (0.08)	-0.90 (0.06)	-0.69 (0.15)	-0.80 (0.09)
FDPRCT	-0.04 (0.88)	-0.17 (0.54)	-0.04 (0.88)	-0.09 (0.76)
AvgAge	-0.00 (0.95)	0.00 (0.83)	0.00 (0.88)	0.00 (0.92)
ROA	-2.99*** (0.00)	-2.49*** (0.00)	-2.28*** (0.00)	-2.33*** (0.00)
MVBV	0.01 (0.08)	0.01 (0.11)	0.01 (0.13)	0.01 (0.13)
ABig4	-0.38* (0.05)	-0.34 (0.06)	-0.34 (0.06)	-0.37* (0.04)
BoardSize	0.00 (0.74)	0.00 (0.76)	0.00 (0.84)	0.00 (0.91)
CDual	0.84* (0.03)	0.82* (0.04)	0.82* (0.04)	0.83* (0.04)
InOPRCT	-0.57 (0.16)	-0.48 (0.23)	-0.45 (0.26)	-0.55 (0.17)
MLEV	0.62** (0.01)	0.73*** (0.00)	0.63** (0.00)	0.67** (0.00)

	Model 3a	Model 3b	Model 4a	Model 4b
NoBM	0.03** (0.00)	0.03** (0.00)	0.03*** (0.00)	0.03** (0.00)
T10SPRCT	-0.31 (0.15)	-0.57** (0.01)	-0.48* (0.03)	-0.43* (0.04)
I_FS	-0.01 (0.79)	-0.02 (0.66)	-0.02 (0.66)	-0.03 (0.50)
_cons	0.19 (0.77)	0.43 (0.46)	0.86 (0.27)	0.57 (0.33)
N	1,642	1,718	1,680	1,718

*p-values in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

4.4.5 Robustness tests

To establish the robustness of the results, a series of tests, including the use of different regression models (logistic regression and conditional logistic regression) to test for multi-collinearity, heteroscedasticity, and endogeneity are undertaken.

To deal with endogeneity, propensity score matching (PSM) is employed in line with McDonnell and Doyle (2019), Averett et al. (2017), and Li (2013). The instrumental variables approach is not used due to limitations in finding a suitable instrumental variable for the endogenous variables 'directors' compensation' and 'directors' shareholding'. Probit regression is run on the propensity score matched sample. The % bias is mostly <5%, and p-values of the t-tests are insignificant (>0.05), implying that the matching is acceptable. Further, the results of the PSM tally with those of the probit regression across all models, which implies that these results are robust.

Table 6a: Propensity Score Matching (PSM)

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
I_TCD	0.00 (0.90)					
DSPRCT		0.45* (0.01)				
I_TCNID			0.01 (0.75)			
NIDSPRCT				0.45* (0.01)		
I_TCID					-0.04 (0.54)	
IDSPRCT						- 1,894.50 (0.24)
IDPRCT	-0.79 (0.09)	-0.90 (0.06)	-0.85 (0.08)	-0.90 (0.06)	-0.69 (0.15)	-0.80 (0.09)
FDPRCT	-0.08 (0.77)	-0.17 (0.54)	-0.04 (0.88)	-0.17 (0.54)	-0.04 (0.88)	-0.09 (0.76)
AvgAge	0.00 (0.91)	0.00 (0.83)	-0.00 (0.95)	0.00 (0.83)	0.00 (0.88)	0.00 (0.92)
ROA	- 2.35***	-2.49*** (0.00)	- 2.99** *	- 2.49** *	-2.28*** (0.00)	-2.33*** (0.00)

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
	(0.00)		(0.00)	(0.00)		
MVBV	0.01 (0.13)	0.01 (0.11)	0.01 (0.08)	0.01 (0.11)	0.01 (0.12)	0.01 (0.13)
ABig4	-0.36* (0.04)	-0.34 (0.06)	-0.38* (0.05)	-0.34 (0.06)	-0.34 (0.06)	-0.37* (0.04)
BoardSize	0.00 (0.90)	0.00 (0.76)	0.00 (0.74)	0.00 (0.76)	0.00 (0.84)	0.00 (0.91)
CDual	0.83* (0.04)	0.82* (0.05)	0.84* (0.03)	0.82* (0.05)	0.82* (0.04)	0.83* (0.04)
InOPRCT	-0.54 (0.19)	-0.48 (0.24)	-0.57 (0.16)	-0.48 (0.24)	-0.45 (0.28)	-0.55 (0.18)
MLEV	0.65*** (0.00)	0.737** * (0.00)	0.62** (0.01)	0.73** * (0.00)	0.63*** (0.00)	0.67*** (0.00)
NoBM	0.03** (0.00)	0.039** (0.00)	0.03** (0.00)	0.039* * (0.00)	0.03*** (0.00)	0.03** (0.00)
T10SPRCT	-0.44* (0.04)	-0.57** (0.01)	-0.31 (0.15)	-0.57** (0.01)	-0.48* (0.02)	-0.43* (0.04)
I_FS	-0.03 (0.46)	-0.02 (0.64)	-0.01 (0.79)	-0.02 (0.64)	-0.02 (0.64)	-0.03 (0.47)

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
_cons	0.51 (0.42)	0.43 (0.44)	0.19 (0.77)	0.43 (0.44)	0.86 (0.27)	0.57 (0.31)
N	1,713	171	1,642	1,718	1,680	1,718

*p-values in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

Table 6b: PSM (% bias & p-values)

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
I_TCD	-0.10 (0.99)					
DSPRCT		2.20 (0.65)				
I_TCNID			-1.80 (0.72)			
NIDSPRCT				2.20 (0.65)		
I_TCID					0.30 (0.96)	
IDSPRCT						-0.40 (0.90)
IDPRCT	-2.70 (0.58)	-2.10 (0.66)	-2.60 (0.59)	-2.10 (0.66)	-2.70 (0.58)	-2.50 (0.60)

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
FDPRCT	0.00 (0.99)	0.50 (0.92)	-0.50 (0.92)	0.50 (0.92)	-0.10 (0.98)	0.00 (1.00)
AvgAge	0.70 (0.88)	0.90 (0.85)	-0.40 (0.94)	0.90 (0.85)	1.10 (0.83)	0.70 (0.89)
ROA	-5.80 (0.20)	-5.80 (0.21)	-3.30 (0.38)	-5.80 (0.21)	-5.40 (0.24)	-5.80 (0.21)
MVBV	1.10 (0.56)	0.90 (0.63)	0.90 (0.44)	0.90 (0.63)	1.30 (0.52)	1.10 (0.56)
ABig4	0.00 (1.00)	-0.50 (0.90)	-0.30 (0.94)	-0.50 (0.90)	0.40 (0.92)	0.20 (0.96)
BoardSize	0.40 (0.94)	0.10 (0.98)	-0.10 (0.99)	0.10 (0.98)	1.00 (0.84)	0.30 (0.95)
CDual	4.40 (0.42)	4.00 (0.46)	2.30 (0.70)	4.00 (0.46)	4.70 (0.40)	4.30 (0.43)
InOPRCT	2.10 (0.65)	1.90 (0.69)	1.90 (0.69)	1.90 (0.69)	1.90 (0.69)	2.10 (0.64)
MLEV	-2.00 (0.69)	-2.40 (0.64)	-0.60 (0.91)	-2.40 (0.64)	-2.10 (0.69)	-1.70 (0.73)
NoBM	-0.80 (0.87)	-0.90 (0.87)	-2.00 (0.71)	-0.90 (0.87)	-0.30 (0.95)	-0.90 (0.86)
T10SPRCT	3.20	3.20	3.40	3.20	2.70	3.00

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
	(0.52)	(0.51)	(0.50)	(0.51)	(0.58)	(0.53)
I_FS	-1.30 (0.78)	-1.80 (0.70)	-1.80 (0.71)	-1.80 (0.70)	-0.50 (0.91)	-1.50 (0.76)

*p-values in parentheses; * p<0.05, ** p<0.01, *** p<0.001*

The results of logistic regression and conditional logistic regression reconfirm the results of the probit regression with respect to the statistical significance and positive coefficient of DSPRCT, and the insignificance of I_TCD, IDRCT, FDRCT, and AvgAge. Detailed results of these tests are provided in **Tables 7a** and **7b**.

Table 7a: Model 1 (Probit, Clogit, and Logit)

	Probit	Clogit	Logit
I_TCD	0.00 (0.90)	-0.04 (0.60)	0.02 (0.80)
IDPRCT	-0.79 (0.10)	-1.39 (0.08)	-1.28 (0.10)
FDRCT	-0.08 (0.77)	-0.25 (0.62)	-0.11 (0.81)
AvgAge	0.00 (0.91)	0.00 (0.87)	0.00 (0.91)
ROA	-2.35*** (0.00)	-4.77** (0.00)	-4.05*** (0.00)

	Probit	Clogit	Logit
MVBV	0.01 (0.13)	0.01 (0.15)	0.01 (0.14)
ABig4	-0.36* (0.05)	-0.54 (0.12)	-0.60* (0.05)
BoardSize	0.00 (0.90)	0.01 (0.83)	0.00 (0.92)
CDual	0.83* (0.04)	1.37* (0.02)	1.35* (0.04)
InOPRCT	-0.54 (0.18)	-1.44* (0.05)	-0.85 (0.18)
MLEV	0.65** (0.00)	1.56** (0.00)	1.11** (0.00)
NoBM	0.03** (0.00)	0.04** (0.01)	0.05** (0.00)
T10SPRCT	-0.44* (0.04)	-0.65 (0.10)	-0.68* (0.05)
I_FS	-0.03 (0.49)	-0.04 (0.76)	-0.05 (0.45)
_cons	0.51 (0.43)	0.78 (0.47)	
N	1,713	1,644	1,713

*p-values in parentheses, * p<0.05, ** p<0.01, *** p<0.001*

Table 7b: Model 2 (Probit, Clogit, and Logit)

	Probit	Clogit	Logit
DSPRCT	0.45* (0.01)	0.78* (0.02)	0.75* (0.01)
IDPRCT	-0.90 (0.06)	-1.48 (0.06)	-1.46 (0.06)
FDPRCT	-0.17 (0.54)	-0.39 (0.44)	-0.25 (0.57)
AvgAge	0.00 (0.83)	0.01 (0.65)	0.00 (0.82)
ROA	-2.49*** (0.00)	-5.15*** (0.00)	-4.28*** (0.00)
MVBV	0.01 (0.11)	0.01 (0.14)	0.01 (0.12)
ABig4	-0.34 (0.06)	-0.52 (0.14)	-0.57 (0.06)
BoardSize	0.00 (0.76)	0.00 (0.86)	0.01 (0.76)
CDual	0.82* (0.04)	1.35* (0.02)	1.33* (0.04)
InOPRCT	-0.48	-1.24	-0.75

	Probit	Clogit	Logit
	(0.23)	(0.09)	(0.24)
MLEV	0.73*** (0.00)	1.70** (0.00)	1.24*** (0.00)
NoBM	0.03** (0.00)	0.04** (0.01)	0.04** (0.00)
T10SPRCT	-0.57** (0.01)	-0.84* (0.04)	-0.89* (0.01)
I_FS	-0.02 (0.66)	-0.07 (0.64)	-0.03 (0.63)
_cons	0.43 (0.46)	0.71 (0.45)	
N	1,718	1,652	1,718

*p-values in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

To deal with heteroscedasticity, we calculate robust standard errors. We also include additional variables in the regression to check the robustness of the results. Empirical evidence shows that controlling shareholders can engage in tunnelling and rent-sharing behaviour (Zhang et al., 2014). Further, foreign ownership has an influence on the governance of the corporation (Lel, 2018; Gul et al. 2010). Therefore, we add percentage ownership of controlling shareholder (CSPRCT), percentage ownership of foreign promoters (FSPRCT), and auditors' opinion (AudOP) into the analysis. With additional variables too, DSPRCT and NIDSPRCT have a significant positive association with FSF (**Table 8**).

Table 8: Additional Variables

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
I_TCD	0.01 (0.82)					
DSRPT		0.47** (0.01)				
I_TCNID			0.02 (0.66)			
NIDSPRPT				0.47** (0.01)		
I_TCID					-0.05 (0.45)	
IDSPRPT						- 1,936.50 (0.12)
IDPRPT	-0.77 (0.11)	-0.88 (0.07)	-0.82 (0.10)	-0.88 (0.07)	-0.66 (0.18)	-0.77 (0.11)
FDPRPT	-0.08 (0.78)	-0.17 (0.55)	-0.04 (0.88)	-0.17 (0.55)	-0.04 (0.89)	-0.08 (0.78)
AvgAge	0.00 (0.84)	0.00 (0.78)	-0.00 (0.97)	0.00 (0.78)	0.00 (0.79)	0.00 (0.85)
ROA	-2.28** (0.00)	-2.41*** (0.00)	-2.95*** (0.00)	-2.41*** (0.00)	-2.19** (0.00)	-2.25** (0.00)

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
MVBV	0.01 (0.14)	0.01 (0.12)	0.01 (0.08)	0.01 (0.12)	0.01 (0.14)	0.01 (0.14)
ABig4	-0.41* (0.03)	-0.38* (0.04)	-0.42* (0.03)	-0.38* (0.04)	-0.39* (0.04)	-0.41* (0.03)
BoardSize	-0.00 (0.92)	0.00 (0.90)	0.00 (0.92)	0.00 (0.90)	0.00 (0.99)	-0.00 (0.92)
CDual	0.860* (0.03)	0.849* (0.03)	0.875* (0.03)	0.849* (0.03)	0.853* (0.03)	0.857* (0.03)
InOPRCT	-0.59 (0.15)	-0.50 (0.22)	-0.61 (0.15)	-0.50 (0.22)	-0.51 (0.22)	-0.59 (0.15)
MLEV	0.830*** (0.00)	0.907*** (0.00)	0.803*** (0.00)	0.907*** (0.00)	0.802*** (0.00)	0.842*** (0.00)
NoBM	0.0278** (0.00)	0.0261** (0.00)	0.0261** (0.01)	0.0261** (0.00)	0.0297** (0.00)	0.0281** (0.00)
T10SPRCT	-0.24 (0.38)	-0.44 (0.12)	-0.14 (0.62)	-0.44 (0.12)	-0.26 (0.34)	-0.25 (0.36)
I_FS	-0.04 (0.33)	-0.03 (0.48)	-0.02 (0.59)	-0.03 (0.48)	-0.03 (0.50)	-0.04 (0.34)
CShrOPRCT	-0.28 (0.30)	-0.20 (0.47)	-0.24 (0.39)	-0.20 (0.47)	-0.29 (0.29)	-0.25 (0.35)
AudOP	0.43	0.45	0.48	0.45	0.42	0.42

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
	(0.17)	(0.16)	(0.17)	(0.16)	(0.20)	(0.18)
FShPRCT	0.33 (0.51)	0.46 (0.35)	0.39 (0.44)	0.46 (0.35)	0.19 (0.71)	0.32 (0.52)
_cons	0.55 (0.40)	0.52 (0.37)	0.25 (0.71)	0.52 (0.37)	1.02 (0.20)	0.65 (0.26)
N	1,695	1,700	1,624	1,700	1,662	1,700

To deal with outliers in the data, we winsorize all variables at 1% and 99%. In the re-estimated models, DSPRCT and NIDSPRCT continue to have a significant positive impact on the incidence of FSF (Table 9).

Table 9: Winsorized variables

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
I_TCD_win	0.02 (0.61)					
DSPRCT_win		0.51** (0.01)				
I_TCNID_win			0.03 (0.51)			
NIDSPRCT_win				0.51** (0.01)		

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
I_TCID_win					-0.05 (0.50)	
IDSPRCT_win						- 4,897.20 (0.47)
IDPRCT_win	-0.88 (0.07)	-1.00* (0.04)	-0.91 (0.07)	-1.00* (0.04)	-0.77 (0.12)	-0.88 (0.07)
FDPRCT_win	-0.11 (0.70)	-0.20 (0.48)	-0.10 (0.73)	-0.20 (0.48)	-0.06 (0.82)	-0.10 (0.71)
AvgAge_win	-0.00 (1.00)	0.00 (0.90)	-0.00 (0.90)	0.00 (0.90)	0.00 (0.95)	0.00 (0.96)
ROA_win	- 3.30*** (0.00)	- 3.47*** (0.00)	-3.54*** (0.00)	- 3.47*** (0.00)	-3.15*** (0.00)	-3.25*** (0.00)
MVBV_win	0.03** (0.00)	0.03** (0.00)	0.03*** (0.00)	0.03** (0.00)	0.030** (0.00)	0.03** (0.00)
ABig4_win	-0.32 (0.08)	-0.29 (0.11)	-0.31 (0.09)	-0.29 (0.11)	-0.29 (0.11)	-0.32 (0.08)
BoardSize_win	-0.00 (0.72)	-0.00 (0.93)	-0.00 (0.86)	-0.00 (0.93)	-0.00 (0.86)	-0.00 (0.80)
CDual_win	- (.)	- (.)	- (.)	- (.)	- (.)	- (.)

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
InOPRCT_win	-0.55 (0.22)	-0.47 (0.29)	-0.62 (0.17)	-0.47 (0.29)	-0.45 (0.32)	-0.55 (0.22)
MLEV_win	0.75*** (0.00)	0.82*** (0.00)	0.74*** (0.00)	0.82*** (0.00)	0.71*** (0.00)	0.75*** (0.00)
NoBM_win	0.03** (0.00)	0.03** (0.01)	0.03** (0.01)	0.03** (0.01)	0.03** (0.00)	0.03** (0.00)
T10SPRCT_win	-0.36 (0.09)	-0.51* (0.02)	-0.27 (0.22)	-0.51* (0.02)	-0.40 (0.06)	-0.37 (0.08)
I_FS_win	-0.02 (0.66)	-0.00 (0.98)	-0.01 (0.90)	-0.00 (0.98)	-0.00 (0.95)	-0.01 (0.76)
_cons	0.22 (0.75)	0.24 (0.69)	-0.04 (0.95)	0.24 (0.69)	0.73 (0.37)	0.38 (0.53)
N	1,713	1,718	1,642	1,718	1,680	1,718

Shi et al. (2020) find that a high level of state ownership has a negative influence on securities fraud. Therefore, we undertake a sub-sample analysis. The first sub-sample comprises SOE fraud firms and the second comprises non-SOE fraud firms. In both sub-samples, directors' compensation continues to be insignificant, whereas DSPRCT and NIDSPRCT are significant. However, in the case of SOE fraud firms, the association is negative while it is positive in case of non-SOEs, implying that directors' shareholding reduces the incidence of FSF in the case of SOEs (detailed results can be provided on request) (**Tables 10a and 10b**).

Table 10a: SOE fraud firms

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
I_TCD	-0.02 (0.86)					
DSPRCT		-2.18* (0.03)				
I_TCNID			-0.08 (0.36)			
NIDSPRCT				-2.18* (0.03)		
I_TCID					-0.06 (0.70)	
IDSPRCT						- 1,010.80 (0.57)
IDPRCT	-1.99 (0.11)	-1.88 (0.13)	-2.24 (0.09)	-1.88 (0.13)	-1.85 (0.15)	-2.07 (0.09)
FDPRCT	-0.08 (0.92)	-0.07 (0.93)	-0.05 (0.95)	-0.07 (0.93)	-0.05 (0.95)	-0.08 (0.91)
AvgAge	0.02 (0.29)	0.02 (0.28)	0.02 (0.33)	0.02 (0.28)	0.02 (0.36)	0.02 (0.30)
ROA	-5.77** (0.00)	-5.30** (0.01)	-4.65* (0.02)	-5.30** (0.01)	-5.33** (0.01)	-5.62** (0.00)

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
MVBV	-0.00 (0.88)	-0.00 (0.93)	-0.01 (0.74)	-0.00 (0.93)	-0.00 (0.95)	-0.00 (0.87)
ABig4	-1.06* (0.01)	-1.09** (0.01)	-0.96* (0.03)	-1.09** (0.01)	-1.05* (0.01)	-1.08* (0.01)
BoardSize	-0.00 (0.89)	-0.00 (0.90)	0.01 (0.83)	-0.00 (0.90)	0.00 (0.90)	-0.00 (0.90)
CDual	0.48 (0.48)	0.47 (0.49)	0.49 (0.47)	0.47 (0.49)	0.43 (0.53)	0.46 (0.50)
InOPRCT	-0.75 (0.40)	-0.84 (0.34)	-1.19 (0.19)	-0.84 (0.34)	-0.67 (0.45)	-0.79 (0.37)
MLEV	0.59 (0.25)	0.61 (0.21)	0.54 (0.29)	0.61 (0.21)	0.47 (0.35)	0.65 (0.18)
NoBM	0.00 (0.90)	0.00 (0.93)	0.00 (0.89)	0.00 (0.93)	0.00 (0.94)	0.00 (0.94)
T10SPRCT	0.08 (0.88)	0.13 (0.81)	0.13 (0.81)	0.13 (0.81)	0.01 (0.98)	0.11 (0.83)
I_FS	0.09 (0.31)	0.07 (0.43)	0.08 (0.37)	0.07 (0.43)	0.11 (0.24)	0.08 (0.35)
_cons	-1.51 (0.29)	-1.44 (0.27)	-0.52 (0.73)	-1.44 (0.27)	-1.23 (0.46)	-1.51 (0.24)
N	306	309	277	309	297	309

Table 10b: Non-SOE fraud firms

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
I_TCD	0.02 (0.71)					
DSPRCT		0.54** (0.00)				
I_TCNIID			0.04 (0.39)			
NIDSPRCT				0.54** (0.00)		
I_TCID					-0.04 (0.56)	
IDSPRCT						-2,080.90 (0.22)
IDPRCT	-0.61 (0.24)	-0.70 (0.18)	-0.65 (0.21)	-0.70 (0.18)	-0.53 (0.31)	-0.61 (0.24)
FDPRCT	-0.12 (0.69)	-0.20 (0.50)	-0.06 (0.83)	-0.20 (0.50)	-0.08 (0.78)	-0.11 (0.71)
AvgAge	-0.00 (0.77)	-0.00 (0.91)	-0.00 (0.67)	-0.00 (0.91)	-0.00 (0.83)	-0.00 (0.77)
ROA	-1.82** (0.01)	-1.96** (0.01)	-2.68*** (0.00)	-1.96** (0.01)	-1.83** (0.01)	-1.81** (0.01)

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
MVBV	0.01 (0.13)	0.01 (0.10)	0.01 (0.08)	0.01 (0.10)	0.01 (0.13)	0.01 (0.13)
ABig4	-0.19 (0.38)	-0.15 (0.49)	-0.22 (0.33)	-0.15 (0.49)	-0.16 (0.45)	-0.19 (0.38)
BoardSize	-0.00 (0.97)	0.00 (0.84)	0.00 (0.96)	0.00 (0.84)	-0.00 (0.98)	-0.00 (0.98)
CDual	0.85 (0.07)	0.83 (0.08)	0.89 (0.06)	0.83 (0.08)	0.85 (0.07)	0.85 (0.08)
InOPRCT	-0.45 (0.32)	-0.38 (0.40)	-0.36 (0.43)	-0.38 (0.40)	-0.37 (0.42)	-0.46 (0.31)
MLEV	0.69** (0.01)	0.77** (0.00)	0.67** (0.01)	0.77** (0.00)	0.68** (0.01)	0.69** (0.01)
NoBM	0.03*** (0.00)	0.03** (0.00)	0.03** (0.00)	0.03** (0.00)	0.04*** (0.00)	0.03*** (0.00)
T10SPRCT	-0.57* (0.01)	-0.76** (0.00)	-0.42 (0.08)	-0.76** (0.00)	-0.59* (0.01)	-0.57* (0.01)
I_FS	-0.05 (0.28)	-0.03 (0.45)	-0.03 (0.50)	-0.03 (0.45)	-0.04 (0.39)	-0.04 (0.32)
_cons	0.80 (0.29)	0.75 (0.26)	0.24 (0.76)	0.75 (0.26)	1.34 (0.15)	0.94 (0.15)
N	1,407	1,409	1,365	1,409	1,383	1,409

Politically connected directors have been found to have an impact on executive pay in China (Chizema et al., 2015). We find directors' political connection by tracing whether they formerly held or currently hold any government posts (Fan et al., 2007; Chen et al., 2011). The variable is set at '1' if the director had or held a government post, and at '0' otherwise (Li et al., 2021b; Wu et al., 2012). DSPRCT is positive and significant whereas PPCD, I_TCD, IDRCT, FDRCT, and AvgAge are insignificant. This implies that the political connectedness of directors has no bearing on the positive association between directors' shareholding and FSF (**Table 11**).

Table 11: Politically connected directors

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
I_TCD	0.01 (0.87)					
DSPRCT		0.45* (0.01)				
I_TCNID			0.01 (0.72)			
NIDSPRCT				0.45* (0.01)		
I_TCID					-0.04 (0.55)	
IDSPRCT						-1,902.00 (0.12)
IDPRCT	-0.78 (0.10)	-0.89 (0.06)	-0.83 (0.09)	-0.89 (0.06)	-0.69 (0.15)	-0.78 (0.10)
FDRCT	-0.08	-0.17	-0.04	-0.17	-0.04	-0.08

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
	(0.77)	(0.54)	(0.88)	(0.54)	(0.88)	(0.76)
AvgAge	0.00 (0.87)	0.00 (0.79)	0.00 (1.00)	0.00 (0.79)	0.00 (0.88)	0.00 (0.88)
ROA	-2.34*** (0.00)	-2.48*** (0.00)	-2.98*** (0.00)	-2.48*** (0.00)	-2.28*** (0.00)	-2.32*** (0.00)
MVBV	0.01 (0.13)	0.01 (0.11)	0.01 (0.08)	0.01 (0.11)	0.01 (0.13)	0.01 (0.13)
ABig4	-0.36* (0.05)	-0.34 (0.07)	-0.37 (0.05)	-0.34 (0.07)	-0.34 (0.06)	-0.36* (0.05)
BoardSize	0.00 (0.91)	0.00 (0.77)	0.00 (0.75)	0.00 (0.77)	0.00 (0.84)	0.00 (0.92)
CDual	0.83* (0.04)	0.82* (0.04)	0.84* (0.04)	0.82* (0.04)	0.82* (0.04)	0.82* (0.04)
InOPRCT	-0.54 (0.18)	-0.47 (0.23)	-0.57 (0.16)	-0.47 (0.23)	-0.45 (0.26)	-0.54 (0.17)
MLEV	0.65** (0.00)	0.73*** (0.00)	0.62** (0.01)	0.73*** (0.00)	0.63** (0.00)	0.66** (0.00)
NoBM	0.03** (0.00)	0.03** (0.00)	0.03** (0.00)	0.03** (0.00)	0.03*** (0.00)	0.03** (0.00)
T10SPRCT	-0.44* (0.04)	-0.57** (0.01)	-0.31 (0.15)	-0.57** (0.01)	-0.48* (0.03)	-0.43* (0.04)

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
I_FS	-0.03 (0.51)	-0.02 (0.69)	-0.01 (0.81)	-0.02 (0.69)	-0.02 (0.67)	-0.02 (0.52)
PPCD	-0.04 (0.79)	-0.04 (0.78)	-0.06 (0.67)	-0.04 (0.78)	-0.01 (0.94)	-0.04 (0.77)
_cons	0.47 (0.49)	0.40 (0.51)	0.13 (0.85)	0.40 (0.51)	0.85 (0.30)	0.53 (0.37)
N	1,713	1,718	1,642	1,718	1,680	171

4.5 Discussion and conclusions

FSF has implications for the entire spectrum of stakeholders associated with a corporation. Hence, avoidance of FSF is of critical significance. The central research question is whether directors' compensation induces FSF. The results show an insignificant and negative association between directors' compensation and FSF in China. These results are based on a comprehensive dataset of over 900 matched pairs over the period of 2005 to 2018. This finding confutes the first hypothesis, that directors' compensation can be instrumental in prompting FSF. The study does, though, document a significant positive association between FSF and directors' shareholding. The results are robust to alternative statistical analyses and other tests.

The lack of prior research examining the relationship between directors' compensation and shareholding with FSF in general and in China in particular makes this paper unique. This research contributes to the literature on agency theory and corporate governance by providing empirical evidence on how the compensation and shareholding of directors, who are agents of the shareholders, affect the incidence of FSF. Also, this study supplements the literature by providing evidence on how various measures of good corporate governance influence the incidence of FSF. Lastly, this research contributes to studies focussing on the under researched institutional context of China.

The results show that, in the case of China, directors' shareholding provides an incentive for fraudulent behaviour. These results have implications for the literature on agency theory. The analysis reinforces the view that directors' shareholding should be viewed with caution, and it supports Dalton and Daily (2001, p. 89), who suggest that "potential conflicts of interest and related outcomes may ultimately serve to erode any anticipated benefits of director

stock compensation". Also, the results indicate that corporate governance measures such as CEO duality and frequent board meetings should be avoided to cement good governance behaviour among Chinese firms.

Apart from informing theory, this paper also informs future research. The insignificant association of FSF with cash-based compensation is contrary to expectation, although not unprecedented. The significant positive association with shareholding is in line with expectation. However, this insignificant association with cash-based compensation and positive significant association with shareholding needs to be delved into more closely. A possible explanation could relate to the value of shareholding vis-à-vis the value of cash-based compensation. A limitation of this paper is that only publicly listed companies were analysed (because of the non-availability of relevant data for private companies). Additionally, the focus of this paper is on corporations implicated in fraud. However, many cases of fraud may not have been either reported or detected. Further, reliance on data presented in regulatory filings and databases assumes that the data disclosed by corporations is true, fair, does not omit any vital information and is not misleading. Another limitation of this study is the sparsity of disclosed data. This study uses cash compensation, as provided by CSMAR; however, Chinese corporations pay substantial amounts in perks and in-kind benefits, and these have not been included in this study (Chen et al., 2010; Kato & Long, 2006). Despite these limitations, this paper provides the additional evidence of the impact of directors' compensation and shareholding on FSF in the Chinese context.

Appendix 1: Variable definition and measurement*

Variable Name	Label	Details	Hypothesis/ predicted association	Reference
<u>Dependent Variable</u>				
Fraud	Fraud Firm (FF)/ Control Firm (CF)	Value of "1" for fraud firm and "0" for control firm		Hass et al., 2016b; Chen et al., 2006; Zhang et al., 2008
<u>Independent Variables</u>				
Log of Directors' total compensation	I_TCD	Log of compensation of all directors; Source: CSMAR	H1 (+)	Canyon & He, 2012; Canyon & He, 2016
Shareholding of all directors (%)	DSPRCT	Percentage Shareholding held by all directors; Source: CSMAR	H2(+)	Lai & Tam, 2017; Bai et al. (2004)
Log of Non-Independent Directors' total compensation	I_TCNID	Log of the non-independent directors' total compensation; Source: CSMAR	(+)	

Variable Name	Label	Details	Hypothesis/ predicted association	Reference
Shareholding of Non-Executive Non-Independent Directors (%)	NIDSPRCT	Shareholding of non-independent directors; Source: CSMAR	(+)	
Log of Independent Directors' total compensation	I_TCID	Log of the independent directors' total compensation; Source: CSMAR	(+)	
Shareholding of Independent Directors (%)	IDSPRCT	Shareholding of independent directors; Source: CSMAR	(+)	
% of Independent Directors on BoD	IDPRCT	Percentage of independent directors; Source: CSMAR	H3(-)	Jiang et al., 2016; Firth et al., 2007b
%Female Directors	FDPRCT	Percentage of female directors; Source: CSMAR	H4(-)	Liu et al., 2016; Liao et al., 2019

Variable Name	Label	Details	Hypothesis/ predicted association	Reference
Average age of all directors	AvgAge	Average age of all directors; Source: CSMAR	H4(-)	Xu et al., 2018; Daboub et al., 1995
<u>Control Variables</u>				
Match Year Modified Total Debt	MLEV	Total Debt / Total Assets; Source: DataStream	(+)	Canyon & He, 2016; Zhang et al., 2008; Hass et al., 2016b
Match Year ROA (%)	ROA	Return on Assets (ROA); Source: DataStream		Canyon & He, 2011
Match Year MV/BV	MVBV	Market value/book value; Source: DataStream		Canyon & He, 2011
CEO and Chair of BoD same person	CDual	"1" if there is CEO duality, "0" otherwise; Source: CSMAR	(+)	Mutlu et al., 2018; Lai, & Tam, 2017; Canyon & He, 2011

Variable Name	Label	Details	Hypothesis/ predicted association	Reference
Total Number of Directors	BoardSize	Total number of directors; Source: CSMAR	(-)	Conyon & He, 2011
Frequency of Board Meetings	NoBM	Frequency/number of board meetings; Source: CSMAR	(-)	Chen et al., 2006; Liang et al., 2013
Auditors from “Big 4” Accounting Firms or Not	ABig4	Value of "1" if the auditor is among the Big 4 firms, and "0" otherwise; Source: CSMAR	(-)	Chen et al., 2011a; Firth et al., 2005
Institutional Ownership	InOPRCT	Percentage of shareholding with institutional owners; Source: CSMAR	(-)	Hou et al., 2016; Wu et al., 2016
Shareholding of top 10 shareholders	T10SPRCT	Percentage of shares held by the top 10 shareholders. Measure of shareholding concentration.; Source: CSMAR	(+)	Ying et al., 2017

Variable Name	Label	Details	Hypothesis/ predicted association	Reference
Firm Size	I_FS	Log of Total Assets; Source: DataStream		
Percentage ownership of Controlling Shareholder	CSPRCT	Percentage of shares held by the controlling shareholders; Source: CSMAR	(+)	Zhang et al., 2014; Shyu & Lee, 2009; Lin et al., 2013
State-Owned Enterprise (SOE)	SOE	Value of "1" if SOE and a value of "0" if not. SOE if State is the largest shareholder; Source: CSMAR	(+)	Jiang & Kim, 2015; Conyon & He, 2016; Hou & Moore, 2010
Financial Auditor Opinion	AudOP	"1" in case of: qualified opinion; adverse opinion; qualified opinion with emphasis of matter paragraph. "0" in all other cases; Source: CSMAR	(+)	Bartov et al., 2000; Hirst, 1994

Variable Name	Label	Details	Hypothesis/ predicted association	Reference
Percentage ownership of Foreign Promoter	FSPRCT	(Number of shares held by foreign promoters' legal person)/ (Total Number of Shares); Source: CSMAR	(-)	Lel, 2018; Gul et al., 2010
Proportion of Politically connected Directors	PPCD	Politically connected directors defined to be directors who formerly held or currently hold government official positions or positions in government body; Number of politically connected directors on the BoD/ Total number of directors; Source: CSMAR	(+)	Wang (2015)

** All variables measured as of the match year*

Tables

Table 12: T-test for matching

	t	p-value
M Cap	0.28	0.78
Net Sales	0.32	0.75
Total Assets	0.27	0.79

Table 13: VIF Analysis

	Model 1 & 2	Model 3a & 3b	Model 4a & 4b
I_TCD	1.40		
DSPRCT	1.33		
I_TCNID		1.35	
NIDSPRCT		1.33	
I_TCID			1.37
IDSPRCT			1.01
IDPRCT	1.06	1.05	1.07
FDPRCT	1.06	1.05	1.03
AvgAge	1.20	1.18	1.20
ROA	1.12	1.13	1.11
MVBV	1.02	1.02	1.03

	Model 1 & 2	Model 3a & 3b	Model 4a & 4b
ABig4	1.11	1.11	1.11
BoardSize	1.13	1.12	1.15
CDual	1.03	1.03	1.03
InOPRCT	1.07	1.07	1.06
MLEV	1.35	1.34	1.29
NoBM	1.13	1.13	1.12
T10SPRCT	1.17	1.18	1.09
I_FS	1.79	1.77	1.75
Mean VIF	1.20	1.19	1.16

5. Paper 2 – ‘Does directors’ compensation induce financial statement fraud?’

Abstract

Although executive compensation and fraud have been extensively researched, such evidence in the case of directors is very limited. To fill this gap, the present study takes a comprehensive look at directors’ compensation, including the compensation of all sub-categories of directors. This study investigates if directors’ compensation can induce financial statement fraud (FSF) and if so, which components of the compensation package are more amenable to this association. In doing so, this study provides insights into the structuring and design of directors’ compensation packages such that the incidence of FSF can be contained. Using a sample of 387 fraud firms in the USA (listed on NASDAQ and the NYSE) along with matched pairs design during a 15 year-period (2005–2019), this study finds a positive association between the incidence of FSF and directors’ stock-based compensation, and a negative association between FSF and the average age of directors. Additionally, size of board of directors, size/type of auditor, frequency of board meetings, and firm size also have a significant influence on the incidence of FSF. Findings from this study have implications for the literature on corporate governance and agency theory and in particular this study forges ahead an alternative view that stock-based compensation may harm shareholders by providing incentives for FSF. The study further provides implications for corporations and their regulators regarding the design of directors’ compensation packages.

Keywords - Agency theory, corporate governance, directors’ compensation, financial statement fraud, stock-based compensation

Paper type - Research paper

5.1 Introduction

This study examines whether and which type of directors' compensation (i.e., total compensation¹⁶, and/or stock-based compensation) has an impact on the incidence of financial statement fraud (FSF) perpetrated by the organisations. This examination is vital because FSF has adverse consequences for all stakeholders of a business. Rezaee (2005) documents losses due to FSF to the tune of USD 500.0 billion to market participants including creditors, employees, investors, and pensioners. In a similar vein, Karpoff et al. (2008) document losses, on the revelation of financial misconduct, to the tune of USD 4.08 for every dollar financially misrepresented. Palmrose et al. (2004) find evidence of negative returns in the case of restatements associated with fraud. The urgency to curb FSF is also evident in the heightened vigilance with respect to corporate governance in the US, which has culminated in the passing of stringent laws such as the Sarbanes–Oxley Act (2002) and enhanced governance requirements by stock exchanges.

Directors, as agents of the shareholders, play a vital role in monitoring the management (Del Brio et al., 2013; Jensen & Meckling, 1976), and are a key corporate governance mechanism for aligning the interests of shareholders and managers (Boyd, 1995). Hence, it is important that directors' own interests are well aligned with those of the shareholders. However, if directors' self-interest overpowers this alignment, then the monitoring function of directors can be impaired (Dalton et al., 2007; Fama, 1980; Fama & Jensen, 1983), which in turn may induce accounting irregularities and manipulations such as FSF. Directors' self-interest is a function of their wealth, which is often dependent on their compensation, including the value of their share-based compensation and on their shareholding in the corporation. Therefore, the main research question is, does directors' compensation including share-based compensation and shareholding have an influence on the incidence of FSF?

This is an important research enquiry because while executives' characteristics and compensation, and accounting irregularities (including earnings management and restatements) have been widely researched, such research is seldom applied to directors. For instance, Chahine et al. (2021), employing the f-score to identify fraud firms, find that CEO network centrality has an inverse relationship with the likelihood of corporate financial fraud. Capalbo et al. (2018) report that CEO narcissism leads to earnings manipulation. Some of the studies on executive compensation and fraud include Erickson et al. (2006); Denis et al. (2006); and Efendi et al. (2007). However, this focus on executives alone does not provide a complete picture, as directors act as monitors of the executives/management. If the directors are effective in their monitoring function, which includes the oversight of financial statements via audit

¹⁶ Directors' total compensation includes salary, bonus, fees earned or paid in cash, value of stock awards, incentive compensation, value of option awards, non-equity incentive plan compensation, change in pension value and non-qualified deferred compensation earnings, and all other compensation (as per US Securities and Exchange Commission (SEC) Form DEF-14A).

committees (Del Brio et al., 2013), then the chances of FSF can be expected to reduce, as the audit function is a vital governance mechanism to prevent this (Jin et al., 2011).

To examine the impact of director compensation on FSF, this study uses a sample of 387 fraud firms and 387 control firms (non-fraud firms) in the 15 years period from 2005 to 2019. Fraud firms are identified from the Securities Class Action Clearinghouse (SCAC) and are listed on the National Association of Securities Dealers Automated Quotations (NASDAQ) and the New York Stock Exchange (NYSE). The present research focuses on NASDAQ and the NYSE, as these are the top two stock exchanges in the US (in terms of market capitalisation of listed companies) (Statista, 2021) and have a long operating history, hence they are expected to provide a wide coverage of industries and firms.

The results show that directors' share-based compensation has a significant positive association with the incidence of FSF, whereas directors' characteristics (i.e., age) has a negative association with the occurrence of FSF. These results hold even after controlling for governance and firm-based factors. Among the control variables, the size of the board of directors (BoD), size/type of auditor, meeting frequency of the board, and firm size have statistically significant associations with FSF. For additional analysis, directors are classified into three categories: executive directors (ED), independent directors (IND), and non-executive non-independent directors (NENID) and the results show that EDs' stock-based compensation drives the positive association between FSF and directors' stock-based compensation.

The findings from this study make three significant contributions to literature and theory. First, although prior studies have been conducted on executive compensation and accounting irregularities, empirical evidence with respect to directors' compensation is sparse. This study fills this gap in the research by providing empirical evidence on the relationship between directors' compensation and FSF. It sheds light on how directors' compensation packages can be tailored to reduce the incidence of FSF. In addition, the present research examines whether there are any elements within the remuneration packages of directors that can induce them to commit FSF and thus have an adverse impact on their ability to set the tone of 'truthfulness' at all levels within the organisation. Second, this paper complements but also differs from existing studies (Beasley, 1996; Farber, 2005; Fernandes & Guedes, 2010; Johnson et al., 2009; Armstrong et al., 2010; Erickson et al., 2006; Dechow et al., 1996; Chahine et al., 2021) in two important areas: (1) it uses a broader definition of FSF by including cases of misstatement in registration statements; (2) it uses data from the SCAC as opposed to the SEC. This approach provides a broader sample for statistical analysis, thereby increasing the statistical power of the regression analysis. Third, the study contributes to the agency theorising of corporate governance. Particularly, these results support the existence of agency issues between shareholders (as principals) and directors (as agents). However, unlike previous research, which has considered compensation a

panacea for aligning the divergent interests of principals and agents (Jensen & Meckling, 1976; Hanlon et al., 2003), this study challenges such claims by finding a positive causal association between directors' stock-based compensation and FSF. The present study calls for research on alternative ways of compensating directors to address agency issues. The remainder of the paper is organised as follows. Section 2 reviews relevant literature and develops the main research hypotheses. Section 3 presents the research methodology. Section 4 describes the results and analysis, while section 5 concludes the study.

5.2 Literature review and hypothesis development

5.2.1 The Anglo-American model of corporate governance

The Anglo-American model of corporate governance is based chiefly on two theoretical pillars: the shareholder perspective (the more dominant perspective) and the stakeholder perspective. The allocation of the 'residual returns' produced by businesses and the recipients of these are the central concern of both perspectives. According to the shareholder perspective, shareholders (as principals) are entitled to the residual returns as an incentive for acting as residual risk-bearers and for waiting¹⁷. On the other hand, the stakeholder perspective propounds that human capital also creates value for corporations and therefore other stakeholders also bear a risk related to the performance of the corporation. Thus, the corporate governance measures should recognise the contribution of human capital to the creation of value (O'Sullivan, 2001).

The corporate governance issues faced by the Anglo-American model can be gauged from the experience of the US. In the US, individuals are predisposed to protect their self-interest due to a focus on virtues such as individual achievement, pragmatism, self-reliance and acting in one's self-interest. Further, high information asymmetries exist despite an array of laws and regulations to protect property rights. These create agency problems and necessitate the alignment of the divergent interests of agents and principals (Lubatkin et al., 2005). With respect to financing, US corporations rely more on the security markets than on banks. This is also substantiated by the high ownership in corporate equity by mutual funds and pension funds (~40%) in the US. From a corporate governance perspective, these institutional investors are expected to demand more of a say in the governance of corporations (Kirkbride et al., 2009; Payne, 2006; Pinto, 2010).

¹⁷ Waiting is the time elapsed between the payment of wages and the income received from sale of products (O'Sullivan, 2001).

5.2.2 Corporate governance and compensation

Ntim et al. (2015) find that larger boards are associated with higher executive pay and signify governance weakness in the form of poor decision-making, managerial monitoring, and communication. Further, higher debt usage and institutional ownership are associated with lower compensation, which reflects the roles played by creditors and institutional owners in reducing agency problems through enhanced monitoring of the management. McConvill (2006) argues against compensation, specifically pay for performance, as a remedy for agency problems. The study claims that reliance on compensation is misguided because it lacks an understanding of human behaviour and motivation. Psychological and social factors such as authority, cognitive dissonance, friendship, and team spirit also affect the quantity of compensation packages. Further, in senior-level positions, 'work orientation' in the form of one's 'calling'¹⁸ becomes more significant than monetary reward for achieving the convergence of interests of principals and agents.

Balsam et al. (2017) conclude that related party transactions (RPTs) signify weak governance and RPTs of outside directors are significantly and positively related to CEO compensation. Further, RPTs are more likely in corporations with larger boards, a low proportion of busy directors, and a high proportion of inside directors. He (2008) argues that the application of incentives for aligning the divergent interests of managers and owners may not always be effective, as managers are not a homogeneous group of self-interested people; instead, they possess different intrinsic characteristics and attributes.

With respect to equity-based compensation, extant research on the role of such compensation as a means for aligning the interests of agents and principals is along two schools of thought – one advocating the use of stock-based compensation (Kim et al., 2019; Armstrong et al., 2010) and the other opposing it (Holderness et al., 2019; Ndofor et al., 2015; O'Connor et al., 2006; Zhang et al., 2008).

The role of directors is of key importance in the governance function. Neville et al. (2019) argue that, as agents of the shareholders, directors have the primary role of conducting monitoring that aims to avoid corporate misconduct. Further, effective monitoring by directors is a function of their motivation (in terms of incentives) and ability (in terms of adequate wherewithal), a view supported by both managerial power theory and agency theory. Thus, directors' compensation assumes importance.

5.2.3 Fraud and corporate governance

It is widely accepted that the quality of corporate governance affects the propensity for fraud. Poor corporate governance as evidenced in fewer outside

¹⁸ 'calling' (or vocation) is a passionate commitment to work for its own sake (McConvill, 2006, p. 422)

directors, fewer audit committee meetings, low-quality auditors, CEO duality, and fewer financial experts on the audit committee, are also characteristics of fraudulent firms (Farber, 2005). Almadi and Lazic (2016) find that high-quality corporate governance can mitigate opportunistic behaviour like earnings management by CEOs. Pagano and Immordino (2012) advocate combining compensation with superior audit quality to design corporate governance structures that are effective in curbing fraud. Further, fraud is an economic decision that is made only when subordinates and the CEO find it worthwhile, thus internal governance as evidenced in managerial dissent can reduce the likelihood of fraud (Choi et al., 2021). Also, unwarranted independence from external control may induce managers to adopt self-serving behaviours (Shi et al., 2017). Conversely, the extensive pressure emanating from external control and monitoring can lead to financial fraud by reducing managers' motivation and their focus on internal values.

5.2.4 Fraud and compensation

Corporate fraud (including earnings management, financial restatements, and FSF) and its linkages with compensation have been explored in prior research. However, the empirical results with respect to this association are mixed, with some studies arguing in favour and others against compensation as a means of fraud prevention. For example, Jiang et al. (2010) report a positive association between executive compensation and earnings management. Harris and Bromiley (2007) find that executive compensation coupled with poor corporate performance can induce firms to commit unethical behaviour, translating into financial misrepresentation. Hsieh et al. (2016) argue that CEOs are more likely to engage in earnings management with a view to maximising their equity-based compensation, around the time of announcing employee layoffs. BenYoussef and Khan (2018) suggest that managers act opportunistically by managing the timing of the release of adverse information in such a manner that they can maximise their stock-based compensation. Almadi and Lazic (2016) find that CEO compensation/incentivisation is positively related to earnings management. On the contrary, Laux and Laux (2009) do not find any clear relationship between accounting manipulation and CEO incentive pay.

5.2.5 Hypothesis development

This study employs the agency theory to investigate the linkages between directors' compensation, independent directors, BoD diversity and FSF. Directors are delegated monitors and agents acting on behalf of the shareholders (Andreas et al., 2012). Jensen and Meckling (1976) propose the establishment of appropriate incentives for agents to limit the divergence of interests between principals and agents. However, compensation can also induce fraud. Barton (2001) finds evidence of earnings management by managers to increase their cash compensation. Similarly, Healy (1985) argues

that managers select accruals and accounting procedures that maximise the value of their bonuses, thereby implying that total compensation (including cash, bonuses, stocks, and options) could be a motivation for inducing self-serving/fraudulent behaviour. Hsieh et al. (2016) also report a positive association between the proportion of cash-based compensation and earnings management, whereas Ye (2014) finds a positive association between earnings management and independent directors' cash compensation. Beasley et al. (2001) identify misplaced compensation and incentives as one of the reasons for fraud. Thus, drawing from the agency theory, the first hypothesis is:

H1: Director compensation is positively associated with the likelihood of FSF.

This study also explores whether directors' shareholding has an impact on the incidence of FSF. Erstwhile research on this association is sparse. Among the few studies on directors' stockholding, one by Bhagat and Bolton (2008) finds that directors' median stock ownership and operating performance are positively related. Similarly, Hambrick and Jackson (2000) report that top-performing companies tend to have directors with substantial equity holdings in those companies, whereas companies that lag behind have insignificant equity stakes held by the directors. Kosnik (1987) reports that outside directors' equity interests are not a motivating factor in influencing directors' resistance of greenmail payments (a proxy for BoD ineffectiveness) when such equity ownership is small. Resistance to greenmail payments by the BoD is more likely when the outside directors' stock ownership is greater than their cash compensation (Kosnik, 1990). Yermack (2004) finds evidence of personal financial gain to outside directors when there is an increase in the market capitalisation of a corporation. Jensen (1993) argues that equity shareholding by directors can result in better alignment of interests of shareholders and directors, as substantial investment by board members in the equity of the corporation would compel them to realise that their decisions with respect to the corporation impact their personal wealth as well. Zhang et al. (2008) also argue that stock ownership by CEOs dampens their tendencies for earnings management. However, in an experimental study, Rose et al. (2013) report that when BoD discussions are less transparent, stock-owning directors are more likely to agree to aggressive financial reporting by the management. The above evidence suggests that there is some connection between directors' shareholding and FSF, as the firm's financial performance influences its market capitalisation and thereby has an impact on the value of directors' shareholding in the firm. Taking recourse to the agency theory, in the context of self-serving behaviour of the agents (Petrou and Procopiou, 2016), the next hypothesis is that:

H2(a): Directors' stockholding is positively associated with the likelihood of FSF.

Directors' remuneration packages may also include stock-based compensation such as restricted stock, shares, and options, amongst others. There are two schools of thought on the use of stock-based compensation. One view advocates the use of stock-based compensation, such as Armstrong et al. (2010) who argue that financial irregularities are less frequent when CEOs have

high equity incentives, and Erickson et al. (2006) who do not report any association between equity incentives of executives and fraud. Proponents of the second view, such as Dalton and Daily (2001), argue against granting stock-based compensation to directors. Aligning with this view, Crutchley and Minnick (2012) and Gerety et al. (2001) also argue against incentive pay (stocks and options). Harris et al. (2019) contend that CEOs engage in earnings management behaviour at high levels of equity incentives. Research by Archambeault et al., 2008; Bergstresser and Philippon, 2006; Cheng and Farber, 2008; Denis et al., 2006; and Peng and Röell, 2008 also argues against the use to stock-based compensation/options. Therefore, applying agency theory, the next hypothesis is that:

H2(b): Directors' stock-based compensation is positively associated with the likelihood of FSF.

Outside directors are considered independent as they have no relationship with a corporation other than as directors, and hence they can undertake a dispassionate evaluation of the CEO and his/her performance (Dalton et al., 2007). Therefore, independence of the BoD has long been touted as one of the panaceas for dealing with agency problems and independent directors are regarded as a key governance mechanism. Wright et al. (2002) find that active external monitoring by independent directors, security analysts, and institutional investors reduces self-serving acquisitive behaviour by CEOs. Also, corporations with outside directors dominating the BoD or with remuneration committees featuring larger proportions of outside directors tend to have greater alignment between firm performance and top management pay (Conyon & Peck, 1998). Also, when the BoD has a higher percentage of independent directors, a wider range of candidates are considered for the position of CEO and consequently, CEO appointments are in favour of shareholders' interests (Borokhovich et al., 1996). Goh et al. (2016) find that greater BoD independence is related to lower information asymmetry whereas Uzun et al. (2004) assert that the incidence of fraud and board composition/structure are significantly related as fraud firms have a lower number of independent directors.

However, views on the independence of directors are mixed. Faleye (2017) argues that organisations with straightforward operations are more amenable to fully independent BoDs, whereas corporations that have substantial intellectual property or that invest extensively in research and development need employee directors. According to Fogel and Geier (2007, p. 72), the role of independent directors should be limited to what they are best suited for – acting as “referees for conflicts of interest and affiliated transactions”. Fich and Shivdasani (2006) argue that corporations with a majority of outside directors who are busy (i.e. they hold three or more BoD positions) are valued less.

From a theoretical perspective, agency theory contends that independent directors improve the quality of voluntary disclosures (Lim et al., 2007) and financial statements (Peasnell et al., 2005). Thus, the next hypothesis is:

H3: The proportion of independent directors is negatively associated with the likelihood of FSF.

Several studies have found diversified BoDs to be more effective. The presence of female executives or directors is generally viewed to have a positive influence on corporations. Wahid (2019) asserts that firms with BoDs that are gender diverse fare better in avoiding financial misconduct. The presence of female directors/executives has been found to improve the quality of accounting numbers, reduce the probability of accounting fraud, and increase accounting returns (García et al., 2017; Post & Byron, 2015; Srinidhi et al., 2011). Gender socialisation theory proclaims an improvement in earnings quality with the presence of women due to gender differences in ethical outlook and risk-taking abilities (Harris et al., 2019). Borghans et al. (2009) find higher levels of risk aversion among women. Peni and Vähämaa (2010), and Duong and Evans (2016) find that female CFOs are associated with greater conservatism in reporting. Contrarily, Harris et al. (2019) conclude that when equity-based pay is substantial, female CEOs diverge from their conservative and risk-averse outlook and can engage in earnings management. Croson and Gneezy (2009) find that risk preferences do not differ between men and women. Further, there is also evidence of a decline in the market value of corporations with an increase in female participation on the BoD (Bøhren & Staubo, 2016; Adams & Ferreira, 2009).

Age, a demographic characteristic, is another measure of BoD diversity. It has a bearing on decision-making (as it reflects individuals' motivation, experience, and cognition) and on ethical and risk-taking behaviour. Xu et al. (2018) conclude that the age of board members is negatively related to the probability of corporate fraud. According to Anderson et al. (2011), old directors provide diversity of ideas and greater stability to the BoD. Agency theory argues that BoD diversity can result in better monitoring (Carter et al., 2010). Thus, using gender and age as two dimensions of BoD diversity, this study hypothesises that:

H4: Diversified boards of directors are negatively associated with the likelihood of FSF.

5.3 Research method

5.3.1 Data and sample

The US regulatory environment is marked by both private enforcement (shareholder class action lawsuits such as SCAC) and public enforcement (Accounting and Auditing Enforcement Releases (AAER) via the SEC) (Sorensen & Miller, 2017). This study uses the SCAC database instead of AAER for two reasons. Firstly, because "private class action attorneys target disclosure violations more precisely than the SEC" (Choi & Pritchard, 2016, p. 46). Secondly, prior empirical studies have used the SCAC database to identify fraud firms (Lenard et al., 2017; Chalmers et al., 2012; Choi et al., 2021; Dyck et al.,

2010). The identified fraud firms are listed on the NYSE and NASDAQ, which are the top two stock exchanges in the US. The sample period is from 2005 to 2019. A control firm for each of the fraud firms is identified using data from Compustat. Three shortlisting criteria are used for identification of the control firms. Firstly, each control firm has to have the same standard industrial classification (SIC) code as that of the corresponding fraud firm (industry-level matching). Secondly, only firms which are not implicated in FSF during the sample period are included in the control group. Finally, the closest match to the fraud firm in terms of the market capitalisation, net sales, or total assets in the match year is chosen as the control firm.

The combined list of NASDAQ and NYSE cases resulted in 1,029 fraud firms. This sample was then randomised, and a smaller sample of 500 fraud firms was chosen for further analysis. Out of the randomised sample, compensation data was available for 396 fraud firms and their corresponding control firms. After removing duplicate cases, the final sample comprised 387 matched pairs of fraud and control firms. In the next step, directors' compensation and other details for the match year were manually collected from the SEC filings. Other databases used were Compustat and Thomson Reuters. The 387 fraud firms are from 156 industries. 'Pharmaceutical preparations' has the highest concentration in the sample, accounting for 6.2% (24 firms) of the total fraud firms. This is followed by 'biological products' at 5.68% (22 firms) and 'computer programming and data processing' at 5.43% (21 firms). Of the 387 fraud firms, 149 firms are listed on the NYSE, and the remaining are listed on NASDAQ.

5.3.2 Research design

The study uses the matched pairs research design (Armstrong et al., 2010; Carcello & Nagy, 2004a; Feng et al., 2011; McMullen & Raghunandan, 1996; Romano & Guerrini, 2012), as according to Ndofor et al. (2015, p. 1781), "the matching process itself controls for a number of possible differences in each pair of firms, in a manner similar to a repeated-measures regression". Regarding variable measurement, the year immediately preceding the first alleged fraud year (i.e. year preceding the class period start date in SCAC filings) is used as the match year (Erickson et al., 2006; Hass et al., 2016). The dependent variable, occurrence of FSF, is a binary dummy variable which is '1' for fraud firm and '0' for control firm (Hass et al., 2016; Crutchley & Minnick, 2012; Erickson et al., 2006; Zhang et al., 2008).

To test **H1**, this study uses directors' total compensation (Canyon & He, 2012, 2016), which is measured as the sum of salary, bonuses, fees earned or paid in cash, value of stock awards, incentive compensation, value of option awards, non-equity incentive plan compensation, change in pension value, non-qualified deferred compensation earnings, and all other compensation, as detailed in the SEC Form DEF-14A. To test **H2a**, directors' shareholding is used, which is measured as follows (Hass et al., 2016; Bhagat & Bolton, 2008):

Directors' shareholding = (Number of shares beneficially held by directors) / (Number of shares outstanding).

To test **H2b**, proportion of directors' stock-based compensation is used (Dalton & Daily, 2001; Crutchley & Minnick, 2012), which is measured as:

Directors' stock-based compensation percentage = (Value of Stock Awards + Value of Option Awards) / (Salary + Bonus + Fees Earned or Paid in Cash + Value of Stock Awards + Incentive Compensation + Value of Option Awards + Non-Equity Incentive Plan Compensation + Change in Pension Value and Non-Qualified Deferred Compensation Earnings + All Other Compensation).

To test **H3**, the percentage of independent directors on the BoD is used as a proxy measure for board independence (Hass et al., 2016; Deutsch et al., 2011).

To test **H4**, diversity of the board is measured through gender diversity (proportion of female directors on the board) (Liao et al., 2019), and age diversity (average age of all directors on the board) (Xu et al., 2018).

This study controls for the impact of corporate governance factors and organisational performance. On the corporate governance front, board size, institutional ownership, proportion of executive directors on board, CEO duality, frequency of board meetings, ownership concentration, and being audited by a Big-4 auditor are controlled for (Ntim et al., 2015; Wright et al., 2002; Lel, 2018; Hadani et al., 2011; Kim et al., 2016; Lennox & Pittman, 2010; Huang et al., 2013). In terms of organisational performance, accounting performance (i.e., Return on assets (ROA)) and market performance (i.e., market value-to-book value) are also controlled for along with leverage (Hass et al., 2016; Conyon & He, 2016; Ntim et al., 2015) and firm size (Gao et al., 2017; Boumosleh, 2009). The definitions of all variables and their measurement are set out in the Appendix.

5.3.3 Regression models

To examine the impact of directors' compensation (**H1**), proportion of independent directors on BoD, and diversity of BoD on FSF (**H3** and **H4**, respectively), Model 1, as below, is used:

$$\text{Fraud}_{i,t} = \alpha_{i,t} + \theta_1 \text{I_TCAD}_{i,t-1} + \text{INDPRT} + \text{FDPRT} + \text{AvAge} + \beta_1 \text{Controls (governance, ownership, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

(Model 1)

To check the impact of directors' shareholding on FSF (**H2a**), Model 2 is used:

$\text{Fraud}_{i,t} = \alpha_{i,t} + \theta_2 \text{ADSP}_{i,t-1} + \text{INDPRT} + \text{FDPRT} + \text{AvAge} + \beta_1 \text{Controls (governance, ownership, performance and others)}_{i,t-1} + \varepsilon_{i,t}$
(Model 2)

To investigate the impact of directors' stock-based compensation on FSF (**H2b**), Model 3 is used:

$\text{Fraud}_{i,t} = \alpha_{i,t} + \theta_3 \text{ADSCPRT}_{i,t-1} + \text{INDPRT} + \text{FDPRT} + \text{AvAge} + \beta_1 \text{Controls (governance, ownership, performance and others)}_{i,t-1} + \varepsilon_{i,t}$
(Model 3)

Controls refers to control variables including firm-level characteristics and corporate governance variables. As mentioned above, fraud is a binary dummy variable (Johnson et al., 2009; Harris & Bromiley, 2007; O'Connor et al., 2006).

5.4 Descriptive results

5.4.1 Descriptive statistics

Set out in Table 1 are the descriptive statistics for all firms, whereas a comparative view of fraud/control firms is provided in Table 2.

Table 1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
I_TCAD	772	15.27	1.25	7.24	22.79
ADSP	769	13.33%	0.19	0.00%	92.69%
ADSCPRT	774	48.48%	0.25	0.00%	100.00%
I_TCED	765	14.91	1.47	0.00	22.65
EDSP	769	7.16%	0.14	0.00%	91.90%
EDSCPRT	774	44.16%	0.28	0.00%	100.00%

Variable	Obs	Mean	Std. Dev.	Min	Max
I_TCIND	764	13.75	1.07	5.87	20.54
INDSP	769	4.27%	0.10	0.00%	68.55%
INDSCPRT	774	53.08%	0.25	0.00%	100.00%
I_TCENID	208	12.18	1.44	6.91	19.29
NENIDSP	769	1.90%	0.08	0.00%	84.06%
NENIDSCPRT	774	11.54%	0.26	0.00%	100.00%
INDPRT	774	76.51%	0.14	0.00%	100.00%
FDPRT	774	12.30%	0.12	0.00%	100.00%
AvAge	774	60.38	5.22	37.00	76.33
ROA	774	-1.67%	0.22	-154.41%	71.02%
MVBV	774	3.17	18.86	-332.41	145.83
BoDS	774	9.06	2.60	1.00	20.00
EDPRT	774	17.13%	0.11	0.00%	100.00%
IOPRT	747	67.65%	0.31	0.00%	165.72%#
CDual	774	0.43	0.50	0.00	2.00
MLEV	774	0.19	0.23	0.00	1.63
ABig4	774	0.78	0.41	0.00	1.00
NoBM	734	8.41	4.27	1.00	35.00

Variable	Obs	Mean	Std. Dev.	Min	Max
HHI	748	0.12	0.18	0.02	1.00
I_TA	774	6.96	1.96	0.18	13.64

#As per Wharton Research Data Services (WRDS), this data is taken from 13f filings and that institutional ownership can exceed 100%, in some cases, because of inclusion of data on long positions only. This study follows prior research by Garel et. al (2021), Hadani, Goranova, and Khan (2011, and Lewellen (2011), which used institutional ownership data from 13f filings.

Variables are defined as follows: I_TCAD (Log of directors' total compensation), ADSP (Shareholding of all directors (%)), ADSCPRT (Directors' stock-based compensation percentage), INDPRT (Percentage of independent directors on BoD), FDPRT (Percentage of female directors), AvAge (Average age of all directors), I_TCED (Log of executive directors' total compensation), EDSP (Shareholding of executive directors (%)), EDSCPRT (Executive directors share based compensation percentage), I_TCIND (Log of independent directors' total compensation), INDSP (Shareholding of Independent Directors (%)), INDSCPRT (Independent directors share based compensation percentage), I_TCNENID (Log of non-executive non-independent directors' total compensation), NENIDSP (Shareholding of non-executive non-independent directors (%)), NENIDSCPRT (Non-executive non-independent directors share based compensation percentage), ROA (Return on assets (%)), MV/BV (Market value /book value), BoDS (Total number of directors), EDPRT (Percentage of executive directors), IOPRT (Institutional ownership percentage), CDual (CEO and Chair of BoD same person), MLEV (Modified total debt), ABig4 (Auditors from Big 4 accounting firms or not), NoBM (Number of board meetings), HHI (Ownership concentration), I_TA (Firm size), I_TCCEO (Log of CEOs' total compensation), CEOSP (Shareholding of CEO (%)), CEOSCPRT (CEO's share based compensation percentage)

Table 2: Statistical Description of Fraud vs. No-Fraud Firms, 2005–2019

Variable	Fraud		Control		p-value	Fraud	Control	p-value
	N	Mean	N	Mean		Median	Median	
I_TCAD	387	15.32	385	15.22	0.27	15.43	15.26	0.06
ADSP	385	13.60%	384	13.07%	0.70	4.52%	4.18%	0.70
ADSCPRT	387	50.55%	387	46.41%	0.02*	55.38%	47.92%	0.01*
I_TCED	384	14.94	381	14.89	0.65	15.13	14.88	0.08
EDSP	385	7.06%	384	7.27%	0.83	1.91%	1.88%	0.84
EDSCPRT	387	46.17%	387	42.15%	0.05*	52.55%	44.49%	0.03*
I_TCIND	382	13.79	382	13.71	0.30	13.96	13.88	0.18
INDSP	385	4.34%	384	4.21%	0.85	0.58%	0.68%	0.38
INDSCPRT	387	54.60%	387	51.55%	0.09	57.35%	54.18%	0.05
I_TCENID	102	12.25	106	12.11	0.48	12.25	12.05	0.34

Variable	Fraud		Control		p-value	Fraud		Control		p-value
	N	Mean	N	Mean		Median	Median			
NENIDSP	385	2.20%	384	1.59%	0.29	0.00%	0.00%	0.85		
NENIDSCPRT	387	11.76%	387	11.33%	0.82	0.00%	0.00%	0.83		
INDPRT	387	76.41%	387	76.62%	0.84	80.00%	80.00%	0.99		
FDPRT	387	11.89%	387	12.72%	0.33	11.11%	11.11%	0.49		
AvAge	387	59.53	387	61.22	0.00*	60.50	61.50	0.00*		
ROA	387	-2.40%	387	-0.94%	0.35	2.50%	3.13%	0.20		
MVBV	387	3.09	387	3.24	0.91	2.57	2.36	0.12		
BoDS	387	9.02	387	9.09	0.70	9.00	9.00	0.61		
EDPRT	387	16.89%	387	17.37%	0.53	14.29%	14.29%	0.78		
IOPRT	378	69.78%	369	65.47%	0.06	79.30%	74.91%	0.02*		

Variable	Fraud		Control		p-value	Fraud		Control		p-value
	N	Mean	N	Mean		Median	Median			
CDual	387	0.46	387	0.39	0.06	0.00	0.00	0.05		
MLEV	387	0.20	387	0.18	0.23	0.13	0.10	0.28		
ABig4	387	0.78	387	0.79	0.60	1.00	1.00	0.60		
NoBM	370	8.75	364	8.07	0.03*	8.00	7.00	0.01*		
HHI	379	0.12	369	0.12	0.71	0.05	0.06	0.09		
I_TA	387	7.07	387	6.84	0.10	6.96	6.76	0.14		

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$;

Note: P-value of the mean and the associated significance is based on t-test whereas P-value of the median and the associated significance is based on Wilcoxon Rank-sum (Mann--Whitney) Test;

T-tests were undertaken to check the robustness of the matched pairs. The results show that the matching was robust, as the p-values were insignificant, implying that the fraud firms and control firms were similar in size, as measured by the market capitalisation, net sales, and total assets.

As Tables 1 and 2 indicate, the control firms paid lower compensation to directors compared to the fraud firms. Further, the stock-based compensation of directors is lower for the control firms compared to the fraud firms. The same phenomenon is also evident with respect to the compensation (total and stock-based) of executive directors, independent directors, and non-executive non-independent directors. With respect to diversity, the control firms are more diverse, with greater representation of women on the BoD and a higher average age of the BoD members.

On the governance front, CEO duality is lower for the control firms compared to the fraud firms. This is intuitive, as when the CEO also acts as the chairperson of the BoD, he/she can exercise greater control over the BoD, which can open the gateway for manipulation of financials. The control firms also have a greater percentage of independent directors on the board. However, on the number/frequency of board meetings, the fraud firms fare better, which is counterintuitive. With respect to performance in the financial markets, the fraud firms are valued less (have lower mean MV/BV values) than the control firms. Further, the control firms were less leveraged as compared to fraud firms.

Results of the correlation analysis (Table 3) exhibit high correlation between all directors' total compensation, stock-based compensation, and shareholding and that of EDs and INDs, respectively. This is understandable, as EDs' and INDs' total compensation, stock-based compensation, and shareholding are the largest subsets of the total compensation, stock-based compensation, and shareholding of all the directors. However, these high correlations do not affect the analysis, as models for EDs, INDs, and NENIDs are run separately. With respect to other variables, no issues related to multi-collinearity are expected as the largest correlation (0.631) in the sample is below the accepted threshold (0.70) (Deutsch et al., 2011).

Table 3: Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
I_TCAD (1)	1.000												
ADSP (2)	-0.377**	1.000											
ADSCPRT (3)	0.465**	-0.179**	1.000										
I_TCED (4)	0.909**	-0.356**	0.393**	1.000									
EDSP (5)	-0.397**	0.744**	-0.268**	-0.374**	1.000								
EDSCPRT (6)	0.502**	-0.240**	0.879**	0.489**	-0.284**	1.000							
I_TCIND (7)	0.795**	-0.410**	0.472**	0.607**	-0.422**	0.395**	1.000						
INDSP (8)	-0.091*	0.496**	0.040	-0.104**	-0.025	-0.041	-0.075*	1.000					

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
INDSCPRT (9)	0.325**	-0.086*	0.680**	0.248**	-0.209**	0.424**	0.408**	0.122**	1.000				
I_TCENID (10)	0.555**	-0.268**	0.162*	0.365**	-0.328**	0.174*	0.576**	-0.163*	0.144*	1.000			
NENIDSP (11)	-0.067**	0.410**	0.007	-0.040	0.005	-0.010	-0.140**	-0.037	0.018	0.048	1.000		
NENIDSCPRT (12)	0.050	0.069**	0.092*	-0.004	-0.013	0.025	0.049	-0.017	0.180**	0.132**	0.206**	1.000	
INDPRT (13)	0.282**	-0.380**	0.323**	0.226**	-0.393**	0.292**	0.438**	0.086*	0.224**	-0.022	-0.301**	-0.323**	1.000
FDPRT (14)	0.205**	-0.129**	0.127**	0.183**	-0.083*	0.145**	0.283**	-0.081*	0.016	0.095	-0.053	-0.062**	0.167**
AvAge (15)	0.252**	-0.266**	-0.013	0.269**	-0.163**	0.037	0.185**	-0.211**	-0.025	0.089	-0.072*	-0.061**	0.241**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ROA (16)	0.049	-0.087*	- 0.164**	0.034	0.014	- 0.123**	0.012	- 0.188**	- 0.125**	-0.058	0.006	- 0.064** **	0.021
MVBV (17)	0.031	0.037	0.083*	0.010	0.040	0.063** **	0.066** **	0.013	0.087*	0.003	0.002	0.034	0.001
BoDS (18)	0.510**	- 0.270**	0.133**	0.459**	- 0.309**	0.171**	0.499**	-0.044	0.060** **	0.265**	-0.030	0.071*	0.287**
EDPRT (19)	- 0.314**	0.345**	- 0.301**	- 0.231**	0.521**	- 0.252**	- 0.434**	-0.052	- 0.211**	- 0.221**	-0.050	-0.076*	- 0.634**
IOPRT (20)	0.351**	- 0.383**	0.291**	0.298**	- 0.328**	0.282**	0.396**	- 0.126**	0.265**	0.262**	- 0.171**	-0.016	0.331**
CDual (21)	0.026	-0.009	- 0.109**	0.039	0.163**	- 0.097**	-0.027	- 0.152**	- 0.063** **	0.015	- 0.121**	- 0.058** **	0.015
MLEV (22)	0.201**	-0.027	0.053	0.206**	- 0.103**	0.050	0.146**	-0.030	0.045	0.032	0.156**	0.049	-0.002
ABig4 (23)	0.421**	- 0.262**	0.257**	0.347**	- 0.289**	0.258**	0.426**	0.028	0.166**	0.252**	- 0.136**	-0.013	0.284**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
NoBM (24)	0.087*	- 0.120**	0.027	0.081*	- 0.150**	0.035	0.158**	-0.026	0.00	0.140*	0.004	-0.021	0.135**
HHI (25)	- 0.268**	0.282**	- 0.099**	- 0.222**	0.229**	- 0.115**	- 0.285**	0.125**	- 0.126**	- 0.227**	0.105**	0.026	- 0.220**
I_TA (26)	0.631**	- 0.394**	0.138**	0.562**	- 0.305**	0.179**	0.558**	- 0.227**	0.021	0.331**	- 0.101**	0.005	0.260**

* $p < 0.05$, ** $p < 0.01$, **** $p < 0.1$

Table 3: Correlation Matrix Contd.

	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
FDPRT (14)	1.000												
AvAge (15)	- 0.058 ****	1.000											
ROA (16)	0.072 *	0.057	1.000										
MVBV (17)	-0.012	-0.036	- 0.077 *	1.000									
BoDS (18)	0.250 **	0.151 **	0.053	-0.045	1.000								
EDPRT (19)	- 0.104 **	- 0.163 **	- 0.065 ****	0.062* ***	- 0.454 **	1.000							
IOPRT (20)	0.158 **	0.163 **	0.185 **	0.107* *	0.107 **	- 0.273**	1.000						

	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
CDual (21)	0.033	0.042	0.142**	0.022	0.029	0.107**	-0.039	1.000					
MLEV (22)	0.008	0.045	-0.034	-0.088*	0.123**	-0.089*	0.101**	-0.023	1.000				
ABig4 (23)	0.145**	0.113**	0.090*	-0.044	0.360**	-0.306**	0.338**	0.042	0.137**	1.000			
NoBM (24)	0.017	0.018	0.155**	-0.030	0.172**	-0.148**	0.085*	-0.048	0.106**	0.096**	1.000		
HHI (25)	0.154**	0.287**	0.175**	0.182*	0.110**	0.167**	0.587**	-0.007	0.024	0.230**	-0.040	1.000	
I_TA (26)	0.221**	0.294**	0.301**	0.072*	0.601**	0.349**	0.267**	0.174**	0.219**	0.456**	0.114**	0.283**	1.000

* $p < 0.05$, ** $p < 0.01$, **** $p < 0.1$

5.5 Empirical results

Table 4: Probit Regression Results

	Model 1	Model 2	Model 3
I_TCAD	0.08 (0.25)		
ADSP		-0.02 (0.95)	
ADSCPRT			0.55* (0.02)
INDPRT	-0.55 (0.26)	-0.48 (0.32)	-0.65 (0.19)
FDPRT	-0.58 (0.22)	-0.58 (0.22)	-0.61 (0.20)
AvAge	-0.07*** (0.00)	-0.07*** (0.00)	-0.06*** (0.00)
ROA	-0.44 (0.09)	-0.52* (0.05)	-0.34 (0.20)
MVBV	-0.00 (0.79)	-0.00 (0.84)	-0.00 (0.65)
BoDS	-0.07* (0.01)	-0.06* (0.02)	-0.05* (0.04)
EDPRT	-0.93	-0.63	-0.60

	Model 1	Model 2	Model 3
	(0.22)	(0.41)	(0.42)
IOPRT	0.43 (0.05)	0.51* (0.02)	0.39 (0.08)
CDual	0.19 (0.06)	0.18 (0.08)	0.21* (0.04)
MLEV	0.18 (0.43)	0.18 (0.43)	0.20 (0.38)
ABig4	-0.38** (0.01)	-0.35* (0.01)	-0.40** (0.01)
NoBM	0.03* (0.04)	0.02* (0.04)	0.03* (0.03)
HHI	-0.18 (0.62)	-0.13 (0.72)	-0.24 (0.51)
I_TA	0.12** (0.00)	0.15*** (0.00)	0.14*** (0.00)
_cons	2.90** (0.01)	3.73*** (0.00)	3.54*** (0.00)
N	715	710	715

*p-values in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

The study uses probit regression, as it is a very useful method in case of a binary dependent variable (Ullah et al., 2019). The results (Table 4) do not support the notion that directors' total compensation is positively associated with incidence of FSF as I_TCAD, though has a positive coefficient, is statistically insignificant

(p-value = 0.25, coef = 0.08). Therefore, **H1** is rejected. This result is in line with existing literature on financial reporting fraud, for example, Ndofor et al. (2015), who also did not find any significant association between CEO total compensation and fraudulent financial reporting.

The coefficient of percentage shareholding of all directors (ADSP) is not statistically significant, implying that directors' shareholding has no impact on the likelihood of FSF (**H2a** is rejected). ADSCPRT has a positive and statistically significant coefficient (p-value = 0.02, coef = 0.55) (**H2b** is supported), implying that stock-based compensation is positively associated with FSF. Prior research by Magilke et al. (2009), Harris and Bromiley (2007), and Deutsch et al. (2011) support this finding. From a country-specific point of view, in the US, individuals are predisposed to protect their self-interest due to a focus on individual achievement, pragmatism, self-reliance, and acting in one's self-interest. Also, high information asymmetries exist despite an array of laws and regulations to protect property rights. These create agency problems and necessitate the alignment of the divergent interests of agents and principals (Lubatkin et al., 2005). Thus, there is stress on use of incentive mechanisms to achieve this alignment. However, the significant positive relationship between ADSCPRT and FSF in this study questions the efficacy of stock-based compensation. Thus, in line with Boumosleh (2009), it can be argued that stock-based compensation aligns directors' interests with that of the management and this convergence exhibits itself in increased likelihood of FSF.

The results show no support for **H3**, as INDPRT is not significant in any of the regression models. This research finding is in line with Agrawal and Chadha (2005), and Abbott et al. (2004) who do not find any impact of the proportion of independent directors/outside directors on financial restatements. From a theoretical lens, no support is found for the agency-theory-based contention that the proportion of independent directors represents high-quality governance.

With respect to **H4**, the coefficient of AvAge is significant and negative across all the models, suggesting that older directors increase the monitoring effectiveness of the BoD. This result supports the views of Xu et al. (2018), who argue that there exists a negative association between BoD age and corporate fraud. Also, older directors/executives tend to be more conservative and ethical in their conduct (Xu et al., 2018; O'Connor et al., 2006; Adegbite, 2015). FDPRT is insignificant across all the models, alluding to the absence of any impact of the presence of female directors on the incidence of FSF, which is in tune with prior research by Harris et al. (2019), and Croson and Gneezy (2009). Therefore, **H4** can be partially accepted, as age of the directors is significant whereas gender diversity is insignificant.

Among the firm-level variables, ROA (except for Model 2), MVBV, MLEV, and HHI are insignificant, implying that these firm-level characteristics have no influence on the incidence of FSF. However, I_TA is statistically significant with a positive coefficient, which implies that the incidence of FSF can be expected to increase with an increase in firm size. Wang (2013) and Choi et al. (2021) also

find significant positive association between firm size and fraud. Among the governance variables BoDS(-), ABig4(-), and NoBM(+) are statistically significant. This implies that the size of the BoD enhances the effectiveness of the board in monitoring and thereby reduces the incidence of accounting fraud. This result finds support in Ye (2014) and in Lennox and Pittman (2010), who report a negative impact of board size on earnings management and likelihood of fraud, respectively. ABig4 is statistically significant with a negative coefficient, which alludes to the superior quality of external monitoring provided by the Big-4 audit firms, a result also confirmed by Lennox and Pittman (2010). NoBM is statistically significant with a positive coefficient implying that the frequency of BoD meetings can increase the likelihood of FSF. This outcome, although counter-intuitive, finds support in Chen et al. (2006).

5.5.1 Additional tests

This study undertakes additional tests to investigate the impact of compensation and shareholding of the three sub-categories of directors on the incidence of FSF. Directors can be either executive or non-executive; however, the fiduciary duties of both are similar (Bugeja et al., 2016). But in terms of compensation there is a disparity, with EDs being paid more handsomely compared to non-executive directors (Lazar et al., 2014). In the US, EDs are generally the highest paid in the corporation, especially CEOs. In addition, by virtue of EDs playing a key role in the day-to-day operations of the corporation, they are in an influential position. Guangguo et al. (2019) argue in favour of EDs and conclude that they (when elected by controlling shareholders) lessen the information asymmetry between the shareholders and managers and hence reduce earnings management and increase pay-performance symmetry.

According to Adithipyangkul and Leung (2018), in the US incentive pay for non-executive directors is recommended. However, such incentive pay can fail, if it is not designed well and not backed by strong monitoring mechanisms. Hence, an additional analysis of the impact on FSF of EDs' compensation and shareholding as well as that of INDs and NENIDs is undertaken. In this study, directors occupying executive positions (as per the executive compensation table) are classified as 'ED'. Directors who are neither independent nor executive are classified as 'NENID'.

Models 4 (a, b, c), Models 5 (a, b, c), and Models 6 (a, b, c) are used to test the impact of executive directors', independent directors', and non-executive non-independent directors' compensation, shareholding, and share-based compensation respectively, on the incidence of FSF. Further, to confirm that the impact of directors' compensation, shareholding and share-based compensation is over and above that of the CEOs', additional analysis with **Models 7a, 7b, and 7c** is undertaken. The regression models are set out below:

$$\mathbf{Fraud}_{i,t} = \alpha_{i,t} + \theta_1 I_TCED_{i,t-1} + \text{INDPRT} + \text{FDPRT} + \text{AvAge} + \beta_1 \text{Controls (governance, ownership, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

(Model 4a)

$$\mathbf{Fraud}_{i,t} = \alpha_{i,t} + \theta_2 \text{EDSP}_{i,t-1} + \text{INDPRT} + \text{FDPRT} + \text{AvAge} + \beta_1 \text{Controls (governance, ownership, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

(Model 4b)

$$\mathbf{Fraud}_{i,t} = \alpha_{i,t} + \theta_3 \text{EDSCPRT}_{i,t-1} + \text{INDPRT} + \text{FDPRT} + \text{AvAge} + \beta_1 \text{Controls (governance, ownership, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

(Model 4c)

$$\mathbf{Fraud}_{i,t} = \alpha_{i,t} + \theta_1 I_TCIND_{i,t-1} + \text{INDPRT} + \text{FDPRT} + \text{AvAge} + \beta_1 \text{Controls (governance, ownership, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

(Model 5a)

$$\mathbf{Fraud}_{i,t} = \alpha_{i,t} + \theta_2 \text{INDSP}_{i,t-1} + \text{INDPRT} + \text{FDPRT} + \text{AvAge} + \beta_1 \text{Controls (governance, ownership, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

(Model 5b)

$$\mathbf{Fraud}_{i,t} = \alpha_{i,t} + \theta_3 \text{INDSCPRT}_{i,t-1} + \text{INDPRT} + \text{FDPRT} + \text{AvAge} + \beta_1 \text{Controls (governance, ownership, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

(Model 5c)

$$\mathbf{Fraud}_{i,t} = \alpha_{i,t} + \theta_1 I_TCNENID_{i,t-1} + \text{INDPRT} + \text{FDPRT} + \text{AvAge} + \beta_1 \text{Controls (governance, ownership, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

(Model 6a)

$$\mathbf{Fraud}_{i,t} = \alpha_{i,t} + \theta_2 \text{NENIDSP}_{i,t-1} + \text{INDPRT} + \text{FDPRT} + \text{AvAge} + \beta_1 \text{Controls (governance, ownership, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

(Model 6b)

$$\mathbf{Fraud}_{i,t} = \alpha_{i,t} + \theta_3 \text{NENIDSCPRT}_{i,t-1} + \text{INDPRT} + \text{FDPRT} + \text{AvAge} + \beta_1 \text{Controls (governance, ownership, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

(Model 6c)

$$\mathbf{Fraud}_{i,t} = \alpha_{i,t} + \theta_1 \text{I_TCCEO}_{i,t-1} + \text{INDPRT} + \text{FDPRT} + \text{AvAge} + \beta_1 \text{Controls (governance, ownership, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

(Model 7a)

$$\mathbf{Fraud}_{i,t} = \alpha_{i,t} + \theta_2 \text{CEOSP}_{i,t-1} + \text{INDPRT} + \text{FDPRT} + \text{AvAge} + \beta_1 \text{Controls (governance, ownership, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

(Model 7b)

$$\mathbf{Fraud}_{i,t} = \alpha_{i,t} + \theta_3 \text{CEOSCPRT}_{i,t-1} + \text{INDPRT} + \text{FDPRT} + \text{AvAge} + \beta_1 \text{Controls (governance, ownership, performance and others)}_{i,t-1} + \varepsilon_{i,t}$$

(Model 7c)

The results of these tests are set out in **Table 5**.

Table 5: Additional Tests (Probit Regression)

	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)	Model 7(a)	Model 7(b)	Model 7(c)
I_TCED	0.03 (0.55)											
EDSP		-0.36 (0.42)										
EDSCPRT			0.43* (0.03)									
I_TCIND				0.04 (0.58)								
INDSP					0.03 (0.95)							
INDSCPRT								0.31 (0.15)				

	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)	Model 7(a)	Model 7(b)	Model 7(c)
I_TCENID							-0.09 (0.30)					
NENIDSP								0.79 (0.30)				
NENIDSCPRT									-0.17 (0.45)			
I_TCCEO										0.02 (0.73)		
CEOSP											-0.22 (0.68)	
CEOSCPRT												0.37 (0.05)
INDPRT	-0.52	-0.51	-0.63	-0.55	-0.48	-0.54	-2.36*	-0.26	-0.71	-0.45	-0.48	-0.62

	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)	Model 7(a)	Model 7(b)	Model 7(c)
	(0.30)	(0.30)	(0.20)	(0.27)	(0.33)	(0.27)	(0.05)	(0.61)	(0.20)	(0.35)	(0.32)	(0.21)
FDPRT	-0.58 (0.22)	-0.57 (0.24)	-0.62 (0.19)	-0.55 (0.25)	-0.58 (0.22)	-0.51 (0.28)	-1.69 (0.08)	-0.61 (0.20)	-0.54 (0.26)	-0.58 (0.22)	-0.53 (0.27)	-0.61 (0.20)
AvAge	- 0.07*** (0.00)	- 0.07*** (0.00)	- 0.06*** (0.00)	- 0.07*** (0.00)	- 0.07*** (0.00)	- 0.06*** (0.00)	-0.05* (0.03)	- 0.07*** (0.00)	- 0.06*** (0.00)	- 0.07*** (0.00)	- 0.06*** (0.00)	- 0.07*** (0.00)
ROA	-0.49 (0.06)	-0.50 (0.06)	-0.37 (0.17)	-0.47 (0.07)	-0.52* (0.05)	-0.43 (0.10)	-0.37 (0.58)	-0.54* (0.04)	-0.51* (0.05)	-0.49 (0.06)	-0.47 (0.07)	-0.39 (0.15)
MVBV	-0.00 (0.87)	-0.00 (0.87)	-0.00 (0.69)	-0.00 (0.85)	-0.00 (0.83)	-0.00 (0.76)	0.04 (0.05)	-0.00 (0.80)	-0.00 (0.87)	-0.00 (0.81)	-0.00 (0.85)	-0.00 (0.73)
BoDS	-0.06* (0.02)	-0.06* (0.02)	-0.06* (0.03)	-0.06* (0.02)	-0.06* (0.02)	-0.06* (0.02)	-0.02 (0.69)	-0.06* (0.02)	-0.06* (0.02)	-0.06* (0.01)	-0.06* (0.02)	-0.06* (0.03)
EDPRT	-0.94	-0.43	-0.74	-0.69	-0.63	-0.72	-3.07	-0.37	-1.01	-0.81	-0.75	-0.72

	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)	Model 7(a)	Model 7(b)	Model 7(c)
	(0.23)	(0.58)	(0.32)	(0.36)	(0.40)	(0.33)	(0.09)	(0.64)	(0.21)	(0.28)	(0.32)	(0.33)
IOPRT	0.51* (0.02)	0.50* (0.02)	0.40 (0.06)	0.48* (0.03)	0.52* (0.02)	0.43* (0.05)	0.82 (0.09)	0.54* (0.01)	0.50* (0.02)	0.50* (0.02)	0.46* (0.03)	0.41 (0.06)
CDual	0.20 (0.05)	0.19 (0.06)	0.21* (0.04)	0.20 (0.05)	0.18 (0.08)	0.19 (0.06)	0.21 (0.34)	0.19 (0.07)	0.19 (0.07)	0.19 (0.07)	0.20 (0.06)	0.21* (0.04)
MLEV	0.23 (0.32)	0.18 (0.44)	0.21 (0.37)	0.18 (0.43)	0.18 (0.44)	0.19 (0.41)	0.86* (0.05)	0.13 (0.58)	0.19 (0.41)	0.19 (0.42)	0.19 (0.40)	0.20 (0.38)
ABig4	-0.37** (0.01)	-0.35* (0.01)	-0.39** (0.01)	-0.38** (0.01)	-0.35* (0.01)	-0.37** (0.01)	0.21 (0.45)	-0.33* (0.02)	-0.37** (0.01)	-0.35* (0.01)	-0.36** (0.01)	-0.39** (0.01)
NoBM	0.02* (0.04)	0.02* (0.04)	0.03* (0.03)	0.02* (0.05)	0.03* (0.04)	0.03* (0.03)	0.01 (0.79)	0.02* (0.04)	0.02* (0.04)	0.02* (0.05)	0.03* (0.03)	0.03* (0.03)
HHI	-0.03 (0.93)	-0.11 (0.76)	-0.23 (0.52)	-0.10 (0.79)	-0.13 (0.72)	-0.15 (0.68)	-0.03 (0.97)	-0.12 (0.74)	-0.16 (0.67)	-0.14 (0.70)	-0.16 (0.66)	-0.22 (0.55)

	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)	Model 7(a)	Model 7(b)	Model 7(c)
I_TA	0.14*** (0.00)	0.15*** (0.00)	0.14*** (0.00)	0.14*** (0.00)	0.15*** (0.00)	0.15*** (0.00)	0.09 (0.20)	0.16*** (0.00)	0.14*** (0.00)	0.15*** (0.00)	0.14*** (0.00)	0.14*** (0.00)
_cons	3.45*** (0.00)	3.79*** (0.00)	3.73*** (0.00)	3.30** (0.00)	3.70*** (0.00)	3.50*** (0.00)	4.55* (0.02)	3.47*** (0.00)	3.93*** (0.00)	3.56*** (0.00)	3.75*** (0.00)	3.75*** (0.00)
N	709	710	715	713	710	715	195	710	715	711	713	715

*p-values in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

With respect to executive directors, both I_TCED and EDSP are statistically insignificant whereas EDSCPRT is statistically significant and positive, implying that executive directors' stock-based compensation increases the incidence of FSF. The impact of compensation, shareholding, and share-based compensation of INDs, NENIDs, and CEOs is insignificant. Among the firm-level variables and governance variables, the results mostly tally with those of Models 1, 2 and 3 (except for Model 6(a), in some cases, which could be due to fewer observations).

5.5.2 Robustness checks

Diagnostics tests for multi-collinearity (variance inflation factor (VIF)) and heteroscedasticity are undertaken. The VIF values of all the variables, as well as the mean VIF value, are below 10, implying that there is no issue of multi-collinearity (Table 6). Heteroscedasticity is tested using the Breusch–Pagan/Cook–Weisberg test and the White test (Table 7). The results of these tests are mixed, hence a conservative approach is adopted by assuming presence of heteroscedasticity and this issue is addressed by calculating robust standard errors. Models 1, 2, and 3 are also tested using logistic regression and conditional logistic regression (Table 8). The results reconfirm the significance of ADSCPRT(+) and AvAge(-). As this study uses cross-sectional data, propensity score matching (PSM) is used to address concerns with respect to endogeneity (Conyon & He, 2016). Under the PSM too, the sign of the coefficient and statistical significance remain unchanged across all the models for all variables. Further, %bias is less than 5% and the p-values associated with t-tests are insignificant across all the models, implying that matching is robust (see Table 9).

Table 6: VIF Analysis

	Model 1	Model 2	Model 3
I_TCAD	2.02		
ADSP		1.46	
ADSCPRT			1.31
INDPRT	1.68	1.71	1.70
FDPRT	1.20	1.19	1.20
AvAge	1.20	1.21	1.20

	Model 1	Model 2	Model 3
ROA	1.26	1.24	1.31
MVBV	1.08	1.08	1.08
BoDS	1.87	1.82	1.82
EDPRT	1.80	1.78	1.78
IOPRT	1.89	1.88	1.87
CDual	1.10	1.10	1.10
MLEV	1.10	1.11	1.10
ABig4	1.38	1.36	1.38
NoBM	1.10	1.11	1.11
HHI	1.76	1.76	1.77
I_TA	2.72	2.32	2.24
Mean VIF	1.54	1.48	1.46

Table 7a: Heteroscedasticity (Breusch-Pagan / Cook-Weisberg test for heteroscedasticity)

	Model 1	Model 2	Model 3
chi2(1)	0.53	0.57	0.46
Prob > chi2	0.47	0.45	0.50

Table 7b: Heteroscedasticity (General's White Test)

	Model 1	Model 2	Model 3
chi2(134)	257.57	251.96	255.90
Prob > chi2	0.00	0.00	0.00

Table 8a: Conditional logistic, logit, and probit (Model 1)

	Probit	Clogit	Logit
I_TCAD	0.08 (0.25)	0.24 (0.08)	0.14 (0.25)
INDPRT	-0.55 (0.26)	-0.93 (0.34)	-0.96 (0.23)
FDPRT	-0.58 (0.22)	-0.15 (0.87)	-0.92 (0.24)
AvAge	-0.07*** (0.00)	-0.12*** (0.00)	-0.11*** (0.00)
ROA	-0.44 (0.09)	-0.91 (0.17)	-0.73 (0.10)
MVBV	-0.00 (0.79)	-0.00 (0.79)	-0.00 (0.78)
BoDS	-0.07* (0.01)	-0.12* (0.03)	-0.11* (0.02)

	Probit	Clogit	Logit
EDPRT	-0.93 (0.22)	-2.78 (0.09)	-1.53 (0.22)
IOPRT	0.43 (0.05)	0.32 (0.50)	0.69 (0.05)
CDual	0.19 (0.06)	0.17 (0.39)	0.31 (0.06)
MLEV	0.18 (0.43)	-0.06 (0.92)	0.28 (0.47)
ABig4	-0.38** (0.01)	-0.36 (0.25)	-0.61** (0.01)
NoBM	0.03* (0.04)	0.03 (0.25)	0.04* (0.04)
HHI	-0.18 (0.62)	-0.90 (0.21)	-0.30 (0.60)
I_TA	0.12** (0.00)	1.77*** (0.00)	0.19** (0.01)
_cons	2.90** (0.01)	4.64** (0.01)	
N	715	666	715

*p-values in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

Table 8b: Conditional logistic, logit, and probit (Model 2)

	Probit	Clogit	Logit
ADSP	-0.02 (0.95)	0.22 (0.75)	-0.02 (0.98)
INDPRT	-0.48 (0.32)	-0.50 (0.61)	-0.84 (0.30)
FDPRT	-0.58 (0.22)	-0.20 (0.82)	-0.92 (0.24)
AvAge	-0.07*** (0.00)	-0.12*** (0.00)	-0.11*** (0.00)
ROA	-0.52* (0.05)	-1.11 (0.09)	-0.86* (0.05)
MVBV	-0.00 (0.84)	-0.00 (0.78)	-0.00 (0.82)
BoDS	-0.0612* (0.02)	-0.09 (0.06)	-0.0973* (0.02)
EDPRT	-0.63 (0.41)	-2.20 (0.17)	-0.99 (0.42)
IOPRT	0.51* (0.02)	0.49 (0.30)	0.84* (0.02)
CDual	0.18 (0.08)	0.14 (0.47)	0.29 (0.08)
MLEV	0.18	-0.09	0.28

	Probit	Clogit	Logit
	(0.43)	(0.87)	(0.47)
ABig4	-0.35* (0.01)	-0.42 (0.18)	-0.56* (0.02)
NoBM	0.02* (0.04)	0.02 (0.38)	0.04* (0.05)
HHI	-0.13 (0.72)	-0.63 (0.38)	-0.22 (0.70)
I_TA	0.15*** (0.00)	1.82*** (0.00)	0.25*** (0.00)
_cons	3.73*** (0.00)	6.05*** (0.00)	
N	710	656	710

*p-values in parentheses; * p<0.05, ** p<0.01, *** p<0.001*

Table 8c: Conditional logistic, logit, and probit (Model 3)

	Probit	Clogit	Logit
ADSCPRT	0.55* (0.02)	1.80*** (0.00)	0.91* (0.02)
INDPRT	-0.65 (0.19)	-0.80 (0.40)	-1.12 (0.17)
FDPRT	-0.61 (0.20)	-0.23 (0.80)	-0.96 (0.22)

	Probit	Clogit	Logit
AvAge	-0.06*** (0.00)	-0.12*** (0.00)	-0.10*** (0.00)
ROA	-0.34 (0.20)	-0.65 (0.34)	-0.56 (0.22)
MVBV	-0.00 (0.65)	-0.00 (0.69)	-0.00 (0.63)
BoDS	-0.05* (0.04)	-0.07 (0.15)	-0.09* (0.04)
EDPRT	-0.60 (0.42)	-1.45 (0.37)	-0.98 (0.42)
IOPRT	0.39 (0.08)	0.26 (0.60)	0.62 (0.08)
CDual	0.21* (0.04)	0.17 (0.38)	0.34* (0.04)
MLEV	0.20 (0.38)	0.06 (0.93)	0.31 (0.42)
ABig4	-0.40** (0.01)	-0.40 (0.20)	-0.64** (0.01)
NoBM	0.03* (0.03)	0.04 (0.16)	0.04* (0.03)
HHI	-0.24 (0.51)	-1.15 (0.11)	-0.40 (0.49)

	Probit	Clogit	Logit
I_TA	0.14*** (0.00)	1.90*** (0.00)	0.22*** (0.00)
_cons	3.54*** (0.00)	5.77*** (0.00)	
N	715	666	715

*p-values in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

Table 9: PSM (% bias & p-values associated with t-tests)

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
I_TCAD	-3.60 (0.64)											
ADSP		-0.70 (0.93)										
ADSCPRT			0.50 (0.95)									
I_TCED				0.30 (0.97)								
EDSP					-3.20 (0.67)							
EDSCPRT							-0.10 (0.99)					

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
I_TCIND							-0.50 (0.95)					
INDSP								3.10 (0.67)				
INDSCPRT									-0.10 (0.99)			
I_TCENID										-2.80 (0.84)		
NENIDSP											-0.20 (0.98)	
NENIDSCPRT												-2.70 (0.73)
INDPRT	5.00	4.30	5.90	5.40	4.40	5.10	4.90	4.20	8.10	-8.60	6.60	3.80

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
	(0.52)	(0.58)	(0.45)	(0.49)	(0.57)	(0.52)	(0.52)	(0.59)	(0.30)	(0.55)	(0.39)	(0.63)
FDPRT	-5.00 (0.51)	-7.10 (0.36)	-4.30 (0.57)	-5.40 (0.48)	-6.70 (0.39)	-4.40 (0.56)	-6.80 (0.38)	-6.90 (0.37)	-3.70 (0.62)	1.40 (0.92)	-6.40 (0.40)	-4.00 (0.60)
AvAge	4.50 (0.55)	6.30 (0.41)	3.50 (0.64)	6.80 (0.38)	6.40 (0.40)	3.40 (0.65)	6.10 (0.42)	6.30 (0.41)	6.10 (0.42)	1.20 (0.93)	8.00 (0.29)	6.10 (0.42)
ROA	-3.50 (0.65)	-4.60 (0.54)	2.40 (0.76)	-5.50 (0.47)	-4.10 (0.59)	2.70 (0.73)	-6.40 (0.39)	-4.20 (0.58)	3.20 (0.69)	19.10 (0.31)	5.80 (0.49)	-1.90 (0.81)
MVBV	-1.80 (0.81)	-1.80 (0.81)	-1.80 (0.81)	-2.70 (0.72)	-1.60 (0.83)	-1.90 (0.79)	-1.40 (0.86)	-1.70 (0.82)	-2.10 (0.78)	-1.90 (0.60)	-3.10 (0.68)	-2.40 (0.75)
BoDS	-4.50 (0.55)	-5.10 (0.50)	-7.40 (0.32)	-4.20 (0.58)	-5.10 (0.50)	-5.80 (0.44)	-4.90 (0.52)	-5.20 (0.49)	-7.30 (0.33)	-9.50 (0.49)	-7.00 (0.35)	-5.20 (0.49)
EDPRT	-2.70 (0.71)	-1.70 (0.82)	-0.90 (0.90)	-2.70 (0.72)	-1.30 (0.86)	-1.80 (0.81)	-1.00 (0.89)	-1.70 (0.82)	-2.60 (0.73)	-5.70 (0.69)	-3.70 (0.62)	-2.90 (0.70)

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
IOPRT	5.20 (0.49)	3.60 (0.64)	5.20 (0.49)	4.20 (0.59)	2.80 (0.71)	4.20 (0.57)	2.70 (0.72)	3.80 (0.62)	4.90 (0.51)	-3.70 (0.79)	5.30 (0.49)	2.80 (0.71)
CDual	1.50 (0.85)	1.80 (0.82)	2.20 (0.77)	2.90 (0.71)	2.90 (0.71)	1.10 (0.88)	3.10 (0.69)	1.70 (0.82)	3.70 (0.63)	4.50 (0.76)	1.10 (0.89)	3.90 (0.61)
MLEV	-6.50 (0.40)	-6.30 (0.41)	-8.00 (0.30)	-6.40 (0.40)	-6.00 (0.44)	-6.80 (0.37)	-6.70 (0.38)	-6.30 (0.41)	-5.70 (0.46)	-1.60 (0.92)	-5.10 (0.52)	-6.40 (0.41)
ABig4	-0.40 (0.96)	0.20 (0.98)	0.40 (0.96)	1.00 (0.90)	-0.50 (0.95)	-0.70 (0.92)	-0.60 (0.93)	0.20 (0.97)	-0.20 (0.98)	1.00 (0.94)	-1.50 (0.84)	-0.20 (0.98)
NoBM	4.40 (0.58)	5.70 (0.47)	3.10 (0.71)	8.10 (0.31)	6.80 (0.39)	3.80 (0.64)	7.10 (0.37)	5.50 (0.49)	4.10 (0.62)	7.40 (0.61)	2.60 (0.75)	5.20 (0.51)
HHI	-3.40 (0.65)	-3.40 (0.67)	-4.00 (0.61)	-3.40 (0.67)	-2.60 (0.74)	-3.40 (0.66)	-1.20 (0.87)	-3.70 (0.64)	-5.50 (0.48)	6.40 (0.64)	-9.10 (0.26)	-2.70 (0.73)
I_TA	0.10	0.30	0.60	0.20	-0.30	1.40	-0.30	0.40	2.40	1.40	4.10	0.90

Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
(0.99)	(0.97)	(0.94)	(0.98)	(0.97)	(0.85)	(0.97)	(0.96)	(0.75)	(0.92)	(0.59)	(0.90)

*p-values in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

To deal with the issue of outliers, all variables are winsorized at 1% and 99% (Chhaochharia et al., 2012) (Table 10). ADSCPRT(+) and AvAge(-) continue to be significant. Notably, years 2008 and 2009 (i.e. match years 2007 and 2008) are part of a global economic meltdown marked by many cases of fraud being brought to light. Hence, sub-sample analysis excluding match year 2007 and 2008 is performed (Table 11). Under this analysis too, ADSCPRT(+) and AvAge(-) are significant. Following Efendi et al. (2007), we conduct another sub-sample analysis by excluding firms in the financial services sector as their corporate governance and financial ratios differ from that of other industries (Table 12). ADSCPRT(+) and AvAge(-) are still significant. The results of the step-wise regression for Models 1, 2, and 3 also reconfirm the significance of ADSCPRT(+) and AvAge(-) (Table 13). A factor analysis (by instituting a binary variable 'FAFD', which is '1' if the number of female directors is equal to or greater than 3 and '0' otherwise) is also performed (Table 14). FAFD is insignificant across Models 1, 2, and 3 whereas ADSCPRT(+) and AvAge(-) continue to be significant.

Table 10: Winsorized

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
I_TCAD_win	0.10 (0.14)											
ADSP_win		-0.03 (0.93)										
ADSCPRT_win			0.51* (0.03)									
I_TCED_win				0.07 (0.22)								
EDSP_win					-0.43 (0.35)							
EDSCPRT_win						0.40* (0.04)						

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
I_TCIND_win							0.06 (0.47)					
INDSP_win								0.02 (0.97)				
INDSCPRT_win									0.28 (0.21)			
I_TCENID_win										-0.09 (0.33)		
NENIDSP_win											0.89 (0.31)	
NENIDSCPRT_win												-0.17 (0.44)

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
INDPRT_win	-0.62 (0.21)	-0.55 (0.27)	-0.69 (0.16)	-0.60 (0.23)	-0.58 (0.24)	-0.68 (0.17)	-0.64 (0.21)	-0.54 (0.28)	-0.59 (0.23)	-2.34 (0.05)	-0.32 (0.55)	-0.77 (0.17)
FDPRT_win	-0.56 (0.24)	-0.54 (0.25)	-0.57 (0.23)	-0.57 (0.23)	-0.53 (0.27)	-0.57 (0.23)	-0.52 (0.27)	-0.54 (0.26)	-0.47 (0.32)	-1.78 (0.07)	-0.57 (0.23)	-0.50 (0.29)
AvAge_win	- 0.07*** (0.00)	- 0.07*** (0.00)	- 0.06*** (0.00)	- 0.07*** (0.00)	- 0.07*** (0.00)	- 0.06*** (0.00)	- 0.06*** (0.00)	- 0.07*** (0.00)	- 0.06*** (0.00)	- 0.059* (0.04)	- 0.07*** (0.00)	- 0.06*** (0.00)
ROA_win	-0.51 (0.07)	-0.61* (0.03)	-0.43 (0.13)	-0.57* (0.04)	-0.60* (0.03)	-0.46 (0.11)	-0.56* (0.05)	-0.61* (0.03)	-0.52 (0.06)	-0.48 (0.47)	-0.63* (0.02)	-0.60* (0.03)
MVBV_win	0.01 (0.48)	0.01 (0.36)	0.01 (0.52)	0.01 (0.44)	0.01 (0.35)	0.01 (0.47)	0.01 (0.35)	0.01 (0.36)	0.01 (0.42)	0.04* (0.04)	0.01 (0.37)	0.01 (0.33)
BoDS_win	-0.07* (0.02)	-0.06* (0.03)	-0.05* (0.05)	-0.06* (0.02)	-0.06* (0.03)	-0.06* (0.04)	-0.06* (0.03)	-0.06 (0.03)	-0.06* (0.03)	-0.01 (0.77)	-0.06* (0.03)	-0.06* (0.03)

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
EDPRT_win	-0.92 (0.23)	-0.55 (0.48)	-0.56 (0.46)	-0.98 (0.22)	-0.32 (0.69)	-0.67 (0.37)	-0.60 (0.43)	-0.55 (0.47)	-0.67 (0.38)	-3.53 (0.06)	-0.30 (0.71)	-0.95 (0.24)
IOPRT_win	0.40 (0.07)	0.50* (0.02)	0.38 (0.09)	0.48* (0.03)	0.49* (0.03)	0.40 (0.07)	0.46* (0.04)	0.51* (0.02)	0.43 (0.05)	0.83 (0.09)	0.53* (0.02)	0.50* (0.02)
CDual_win	0.20* (0.05)	0.19 (0.06)	0.22* (0.03)	0.21* (0.04)	0.21* (0.05)	0.22* (0.03)	0.21* (0.04)	0.19 (0.06)	0.20* (0.05)	0.23 (0.30)	0.202* (0.05)	0.20 (0.05)
MLEV_win	0.15 (0.53)	0.16 (0.52)	0.18 (0.46)	0.18 (0.47)	0.15 (0.53)	0.18 (0.45)	0.16 (0.52)	0.15 (0.52)	0.17 (0.49)	1.035* (0.02)	0.12 (0.62)	0.17 (0.49)
ABig4_win	-0.37** (0.01)	-0.34* (0.02)	-0.38** (0.01)	-0.37** (0.01)	-0.34* (0.01)	-0.38** (0.01)	-0.37** (0.01)	-0.34* (0.02)	-0.36** (0.01)	0.19 (0.48)	-0.32* (0.02)	-0.36** (0.01)
NoBM_win	0.03* (0.03)	0.03* (0.04)	0.03* (0.03)	0.03* (0.04)	0.03* (0.04)	0.03* (0.03)	0.03* (0.05)	0.03* (0.04)	0.03* (0.03)	-0.00 (0.94)	0.03* (0.04)	0.03* (0.04)

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
HHI_win	-0.14 (0.68)	-0.09 (0.81)	-0.19 (0.60)	-0.03 (0.94)	-0.07 (0.85)	-0.18 (0.61)	-0.06 (0.88)	-0.09 (0.81)	-0.11 (0.76)	-0.03 (0.97)	-0.08 (0.83)	-0.12 (0.75)
l_TA_win	0.12** (0.01)	0.16*** (0.00)	0.14*** (0.00)	0.13** (0.00)	0.16*** (0.00)	0.14*** (0.00)	0.14*** (0.00)	0.16*** (0.00)	0.15*** (0.00)	0.09 (0.24)	0.16*** (0.00)	0.15*** (0.00)
_cons	2.50* (0.02)	3.56*** (0.00)	3.41*** (0.00)	2.94** (0.00)	3.62*** (0.00)	3.58*** (0.00)	2.94* (0.01)	3.53*** (0.00)	3.37*** (0.00)	4.60* (0.03)	3.30*** (0.00)	3.76*** (0.00)
N	715	710	715	709	710	715	713	710	715	195	710	715

*p-values in parentheses; * p<0.05, ** p<0.01, *** p<0.001*

Table 11: Sub-sample analysis (excluding melt-down)

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
I_TCAD	0.12 (0.11)											
ADSP		-0.16 (0.63)										
ADSCPRT			0.67** (0.01)									
I_TCED				0.05 (0.35)								
EDSP					-0.51 (0.28)							
EDSCPRT						0.54** (0.01)						

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
I_TCIND							0.07 (0.41)					
INDSP								0.06 (0.90)				
INDSCPRT									0.38 (0.11)			
I_TCNENID										-0.09 (0.32)		
NENIDSP											0.35 (0.65)	
NENIDSCPRT												-0.19 (0.44)

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)	
INDPRT	-0.66 (0.20)	-0.59 (0.25)	-0.77 (0.14)	-0.61 (0.24)	-0.59 (0.25)	-0.75 (0.15)	-0.65 (0.22)	-0.57 (0.27)	-0.64 (0.21)	-3.00* (0.01)	-0.46 (0.40)	-0.81 (0.17)	
FDPRT	-0.68 (0.17)	-0.67 (0.17)	-0.69 (0.17)	-0.67 (0.17)	-0.65 (0.19)	-0.70 (0.16)	-0.63 (0.20)	-0.67 (0.18)	-0.58 (0.24)	-1.53 (0.15)	-0.68 (0.17)	-0.63 (0.20)	
AvAge	- 0.06*** (0.00)	- 0.07*** (0.00)	- 0.06*** (0.00)	-0.06*** (0.00)	- 0.07*** (0.00)	- 0.06*** (0.00)	- 0.06*** (0.00)	- 0.06*** (0.00)	- 0.06*** (0.00)	- 0.06*** (0.00)	-0.05* (0.02)	- 0.06*** (0.00)	- 0.06*** (0.00)
ROA	-0.44 (0.13)	-0.55 (0.05)	-0.33 (0.26)	-0.51 (0.08)	-0.53 (0.07)	-0.37 (0.20)	-0.48 (0.10)	-0.55 (0.05)	-0.45 (0.12)	-0.07 (0.92)	-0.56* (0.05)	-0.54 (0.05)	
MVBV	-0.00 (0.77)	-0.00 (0.86)	-0.00 (0.63)	-0.00 (0.88)	-0.00 (0.88)	-0.00 (0.68)	-0.00 (0.86)	-0.00 (0.84)	-0.00 (0.75)	0.05* (0.03)	-0.00 (0.82)	-0.00 (0.88)	
BoDS	-0.07* (0.01)	-0.06* (0.02)	-0.06* (0.04)	-0.07* (0.02)	-0.06* (0.02)	-0.06* (0.03)	-0.07* (0.02)	-0.06* (0.02)	-0.06* (0.03)	-0.01 (0.88)	-0.06* (0.02)	-0.06* (0.03)	

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
EDPRT	-1.29 (0.11)	-0.89 (0.28)	-0.85 (0.29)	-1.30 (0.12)	-0.65 (0.44)	-1.02 (0.20)	-0.89 (0.27)	-0.91 (0.27)	-0.99 (0.22)	-4.149* (0.03)	-0.79 (0.36)	-1.31 (0.13)
IOPRT	0.43 (0.06)	0.52* (0.02)	0.39 (0.09)	0.53* (0.02)	0.51* (0.02)	0.41 (0.07)	0.49* (0.03)	0.54* (0.02)	0.45* (0.05)	1.15* (0.03)	0.55* (0.02)	0.53* (0.02)
CDual	0.25* (0.02)	0.23* (0.03)	0.27* (0.01)	0.25* (0.02)	0.25* (0.02)	0.26* (0.01)	0.26* (0.02)	0.23* (0.03)	0.25* (0.02)	0.31 (0.19)	0.24* (0.03)	0.24* (0.03)
MLEV	0.15 (0.55)	0.15 (0.54)	0.17 (0.48)	0.21 (0.41)	0.14 (0.56)	0.18 (0.46)	0.15 (0.54)	0.14 (0.56)	0.15 (0.53)	0.91 (0.05)	0.13 (0.61)	0.15 (0.53)
ABig4	-0.45** (0.00)	-0.40** (0.01)	-0.46** (0.00)	-0.43** (0.00)	-0.41** (0.01)	-0.46** (0.00)	-0.44** (0.00)	-0.40** (0.01)	-0.43** (0.00)	0.10 (0.71)	-0.39** (0.01)	-0.42** (0.00)
NoBM	0.03* (0.03)	0.03* (0.04)	0.03* (0.02)	0.03* (0.04)	0.03* (0.04)	0.03* (0.02)	0.03* (0.05)	0.03* (0.04)	0.03* (0.03)	0.01 (0.80)	0.03* (0.04)	0.03* (0.04)

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
HHI	-0.17 (0.67)	-0.10 (0.80)	-0.22 (0.58)	0.01 (0.99)	-0.08 (0.84)	-0.21 (0.59)	-0.03 (0.94)	-0.11 (0.79)	-0.14 (0.73)	0.04 (0.97)	-0.11 (0.79)	-0.14 (0.73)
I_TA	0.11* (0.01)	0.15*** (0.00)	0.14*** (0.00)	0.13** (0.00)	0.15*** (0.00)	0.14*** (0.00)	0.14** (0.00)	0.16*** (0.00)	0.15*** (0.00)	0.06 (0.44)	0.16*** (0.00)	0.15*** (0.00)
_cons	2.46* (0.03)	3.83*** (0.00)	3.47*** (0.00)	3.28*** (0.00)	3.82*** (0.00)	3.72*** (0.00)	3.04** (0.01)	3.68*** (0.00)	3.44*** (0.00)	5.33** (0.01)	3.58*** (0.00)	3.94*** (0.00)
N	652	647	652	646	647	652	651	647	652	172	647	652

*p-values in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

Table 12: Sub-sample analysis (excluding financial services sector)

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
I_TCAD	0.07 (0.31)											
ADSP		-0.04 (0.89)										
ADSCPRT			0.57* (0.02)									
I_TCED				0.02 (0.69)								
EDSP					-0.42 (0.35)							

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
EDSCPRT						0.43*						
						(0.03)						
I_TCIND							0.04					
							(0.57)					
INDSP								0.05				
								(0.92)				
INDSCPRT									0.28			
									(0.21)			
I_TCENID										-0.04		
										(0.66)		
NENIDSP											0.78	
											(0.30)	

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)	
NENIDSCPRT												-0.17 (0.46)	
INDPRT	-0.62 (0.21)	-0.57 (0.25)	-0.73 (0.14)	-0.59 (0.24)	-0.60 (0.23)	-0.71 (0.15)	-0.62 (0.22)	-0.57 (0.25)	-0.62 (0.21)	-2.37* (0.05)	-0.35 (0.51)	-0.79 (0.16)	
FDPRT	-0.52 (0.28)	-0.51 (0.29)	-0.56 (0.25)	-0.51 (0.29)	-0.49 (0.31)	-0.56 (0.25)	-0.50 (0.31)	-0.51 (0.30)	-0.46 (0.35)	-1.21 (0.24)	-0.54 (0.27)	-0.49 (0.31)	
AvAge	⁻ 0.07*** (0.00)	⁻ 0.07*** (0.00)	⁻ 0.06*** (0.00)	⁻ 0.07*** (0.00)	⁻ 0.07*** (0.00)	⁻ 0.07*** (0.00)	⁻ 0.07*** (0.00)	⁻ 0.07*** (0.00)	⁻ 0.07*** (0.00)	⁻ 0.06*** (0.00)	⁻ -0.05* (0.03)	⁻ 0.07*** (0.00)	⁻ 0.07*** (0.00)
ROA	-0.44 (0.10)	-0.51 (0.05)	-0.34 (0.22)	-0.49 (0.07)	-0.49 (0.06)	-0.37 (0.17)	-0.47 (0.08)	-0.51 (0.06)	-0.44 (0.10)	-0.23 (0.73)	-0.53* (0.05)	-0.51 (0.05)	
MVBV	-0.00 (0.86)	-0.00 (0.90)	-0.00 (0.71)	-0.00 (0.94)	-0.00 (0.93)	-0.00 (0.76)	-0.00 (0.92)	-0.00 (0.89)	-0.00 (0.84)	0.04 (0.06)	-0.00 (0.86)	-0.00 (0.93)	

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
BoDS	-0.06* (0.04)	-0.06* (0.04)	-0.05 (0.08)	-0.06 (0.05)	-0.06* (0.04)	-0.05 (0.06)	-0.06* (0.05)	-0.06* (0.04)	-0.05 (0.05)	-0.04 (0.46)	-0.06* (0.04)	-0.05 (0.06)
EDPRT	-0.68 (0.38)	-0.53 (0.49)	-0.34 (0.66)	-0.67 (0.40)	-0.30 (0.70)	-0.50 (0.51)	-0.42 (0.59)	-0.54 (0.48)	-0.48 (0.53)	-2.67 (0.14)	-0.28 (0.73)	-0.76 (0.35)
IOPRT	0.45* (0.04)	0.51* (0.02)	0.41 (0.07)	0.54* (0.02)	0.50* (0.02)	0.43 (0.06)	0.49* (0.03)	0.52* (0.02)	0.46* (0.04)	0.81 (0.10)	0.55* (0.01)	0.52* (0.02)
CDual	0.18 (0.09)	0.18 (0.09)	0.20 (0.06)	0.19 (0.08)	0.19 (0.07)	0.20 (0.06)	0.19 (0.08)	0.18 (0.09)	0.18 (0.09)	0.23 (0.31)	0.18 (0.08)	0.17 (0.09)
MLEV	0.15 (0.53)	0.15 (0.53)	0.17 (0.46)	0.20 (0.41)	0.14 (0.55)	0.17 (0.46)	0.14 (0.55)	0.14 (0.55)	0.16 (0.51)	0.88 (0.05)	0.09 (0.70)	0.14 (0.54)
ABig4	-0.38** (0.01)	-0.36* (0.01)	-0.40** (0.01)	-0.37** (0.01)	-0.36** (0.01)	-0.40** (0.01)	-0.38** (0.01)	-0.36* (0.01)	-0.38** (0.01)	0.20 (0.48)	-0.34* (0.02)	-0.37** (0.01)

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
NoBM	0.03* (0.03)	0.03* (0.03)	0.03* (0.02)	0.03* (0.03)	0.03* (0.03)	0.03* (0.02)	0.03* (0.03)	0.03* (0.03)	0.03* (0.02)	0.02 (0.48)	0.03* (0.03)	0.03* (0.03)
HHI	-0.10 (0.79)	-0.07 (0.86)	-0.16 (0.66)	0.05 (0.90)	-0.05 (0.90)	-0.15 (0.68)	-0.01 (0.98)	-0.07 (0.86)	-0.07 (0.85)	0.18 (0.83)	-0.06 (0.87)	-0.08 (0.83)
I_TA	0.13** (0.00)	0.16*** (0.00)	0.14*** (0.00)	0.14*** (0.00)	0.16*** (0.00)	0.14*** (0.00)	0.14*** (0.00)	0.16*** (0.00)	0.15*** (0.00)	0.09 (0.24)	0.16*** (0.00)	0.15*** (0.00)
_cons	2.88** (0.01)	3.66*** (0.00)	3.45*** (0.00)	3.43*** (0.00)	3.72*** (0.00)	3.65*** (0.00)	3.18** (0.00)	3.61*** (0.00)	3.43*** (0.00)	4.05 (0.05)	3.39*** (0.00)	3.83*** (0.00)
N	692	688	692	686	688	692	690	688	692	184	688	692

*p-values in parentheses; * p<0.05, ** p<0.01, *** p<0.001*

Table 13: Step-wise regression

	Model 1		Model 2		Model 3			
	Coef.	p-value	Coef.	p-value	Coef.	p-value		
AvAge	-0.06	(0.00)	AvAge	-0.07	(0.00)	AvAge	-0.06	(0.00)
I_TA	0.15	(0.00)	I_TA	0.16	(0.00)	I_TA	0.12	(0.00)
BoDS	-0.06	(0.02)	BoDS	-0.07	(0.01)	BoDS	-0.05	(0.03)
NoBM	0.03	(0.04)	NoBM	0.02	(0.04)	NoBM	0.03	(0.01)
ABig4	-0.36	(0.01)	IOPRT	0.49	(0.01)	ADSCPRT	0.53	(0.02)
IOPRT	0.51	(0.01)	ABig4	-0.35	(0.01)	ABig4	-0.39	(0.01)
ROA	-0.48	(0.06)	ROA	-0.49	(0.06)	IOPRT	0.36	(0.05)
CDual	0.17	(0.10)	_cons	3.16	(0.00)	CDual	0.18	(0.07)
_cons	3.05	(0.00)				_cons	2.87	(0.00)

	Model 1			Model 2			Model 3	
	Coef.	p-value		Coef.	p-value		Coef.	p-value
N	715		N	710		N	715	
Pseudo R2	0.06		Pseudo R2	0.06		Pseudo R2	0.07	

Table 14: FAFD

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
I_TCAD	0.07 (0.29)											
ADSP		-0.03 (0.93)										
ADSCPRT			0.54* (0.02)									

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
I_TCED				0.02 (0.62)								
EDSP					-0.40 (0.37)							
EDSCPRT						0.42* (0.03)						
I_TCIND							0.04 (0.61)					
INDSP								0.06 (0.90)				
INDSCPRT									0.31 (0.15)			

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
I_TCENENID										-0.09 (0.27)		
NENIDSP											0.78 (0.30)	
NENIDSCPRT												-0.16 (0.46)
INDPRT	-0.56 (0.25)	-0.50 (0.31)	-0.67 (0.18)	-0.53 (0.28)	-0.52 (0.29)	-0.65 (0.19)	-0.56 (0.27)	-0.50 (0.31)	-0.55 (0.26)	-2.36* (0.05)	-0.28 (0.59)	-0.71 (0.20)
FAFD	-0.16 (0.29)	-0.17 (0.27)	-0.17 (0.28)	-0.17 (0.29)	-0.17 (0.26)	-0.18 (0.26)	-0.16 (0.29)	-0.17 (0.28)	-0.16 (0.30)	-0.53 (0.11)	-0.18 (0.25)	-0.16 (0.29)
AvAge	- 0.06*** (0.00)	- 0.07*** (0.00)	- 0.06*** (0.00)	- 0.06*** (0.00)	-0.07*** (0.00)	-0.06*** (0.00)	-0.06** (0.00)	- 0.07*** (0.00)	- 0.06*** (0.00)	-0.05* (0.03)	- 0.07*** (0.00)	- 0.06*** (0.00)

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
ROA	-0.43 (0.10)	-0.50 (0.05)	-0.33 (0.22)	-0.48 (0.07)	-0.48 (0.06)	-0.36 (0.18)	-0.46 (0.08)	-0.50 (0.06)	-0.42 (0.11)	-0.27 (0.67)	-0.52* (0.05)	-0.49 (0.06)
MVBV	-0.00 (0.83)	-0.00 (0.87)	-0.00 (0.70)	-0.00 (0.91)	-0.00 (0.91)	-0.00 (0.74)	-0.00 (0.89)	-0.00 (0.87)	-0.00 (0.80)	0.05* (0.04)	-0.00 (0.84)	-0.00 (0.90)
BoDS	-0.06* (0.02)	-0.06* (0.03)	-0.05* (0.05)	-0.06* (0.03)	-0.06* (0.03)	-0.06* (0.04)	-0.06* (0.03)	-0.06* (0.03)	-0.06* (0.03)	-0.01 (0.80)	-0.06* (0.03)	-0.06* (0.03)
EDPRT	-0.86 (0.25)	-0.57 (0.45)	-0.55 (0.46)	-0.87 (0.26)	-0.35 (0.65)	-0.68 (0.36)	-0.64 (0.40)	-0.57 (0.45)	-0.67 (0.37)	-2.99 (0.10)	-0.31 (0.69)	-0.95 (0.23)
IOPRT	0.42 (0.05)	0.50* (0.02)	0.38 (0.08)	0.518* (0.02)	0.49* (0.02)	0.40 (0.07)	0.47* (0.03)	0.51* (0.02)	0.42 (0.05)	0.84 (0.09)	0.53* (0.01)	0.50* (0.02)
CDual	0.20 (0.06)	0.19 (0.07)	0.21* (0.04)	0.20* (0.05)	0.20 (0.06)	0.21* (0.04)	0.20* (0.05)	0.19 (0.07)	0.20 (0.05)	0.20 (0.37)	0.19 (0.06)	0.19 (0.06)
MLEV	0.18	0.19	0.20	0.24	0.18	0.21	0.18	0.18	0.19	0.86	0.13	0.19

	Model 1	Model 2	Model 3	Model 4(a)	Model 4(b)	Model 4(c)	Model 5(a)	Model 5(b)	Model 5(c)	Model 6(a)	Model 6(b)	Model 6(c)
	(0.42)	(0.42)	(0.37)	(0.30)	(0.43)	(0.36)	(0.42)	(0.42)	(0.40)	(0.05)	(0.57)	(0.40)
ABig4	-0.38** (0.01)	-0.359* (0.01)	-0.40** (0.01)	-0.37** (0.01)	-0.36* (0.01)	-0.40** (0.01)	-0.38** (0.01)	-0.35* (0.01)	-0.38** (0.01)	0.24 (0.37)	-0.34* (0.02)	-0.37** (0.01)
NoBM	0.03* (0.03)	0.03* (0.04)	0.03* (0.02)	0.03* (0.04)	0.03* (0.04)	0.03* (0.03)	0.03* (0.04)	0.03* (0.04)	0.03* (0.03)	0.01 (0.72)	0.03* (0.04)	0.03* (0.04)
HHI	-0.15 (0.67)	-0.11 (0.77)	-0.21 (0.56)	-0.01 (0.98)	-0.09 (0.81)	-0.20 (0.57)	-0.08 (0.83)	-0.11 (0.77)	-0.13 (0.72)	0.15 (0.86)	-0.10 (0.79)	-0.14 (0.71)
I_TA	0.12** (0.00)	0.15*** (0.00)	0.14*** (0.00)	0.14*** (0.00)	0.15*** (0.00)	0.13*** (0.00)	0.14*** (0.00)	0.15*** (0.00)	0.15*** (0.00)	0.09 (0.23)	0.16*** (0.00)	0.14*** (0.00)
_cons	2.85** (0.01)	3.61*** (0.00)	3.42*** (0.00)	3.37*** (0.00)	3.67*** (0.00)	3.61*** (0.00)	3.22** (0.00)	3.57*** (0.00)	3.39*** (0.00)	4.34* (0.03)	3.35*** (0.00)	3.81*** (0.00)
N	715	710	715	709	710	715	713	710	715	195	710	715

*p-values in parentheses; * p<0.05, ** p<0.01, *** p<0.00*

5.6 Discussion and conclusions

This research enhances the present understanding of the role played by compensation in inducing FSF. Specifically, it contributes to the governance and accountability literature by augmenting the limited empirical evidence available on directors' compensation and its effect on the incidence of FSF. It also contributes methodologically by employing a wider source of data. Unlike prior research, which has predominantly used data from the SEC to identify fraud firms, this study uses data from SCAC and also a broader definition of FSF by including corporations that had made misstatements in their offer documents. The results of the study indicate that the incidence of FSF is significantly and positively related to directors' stock-based compensation but has a significant negative association with directors' age. These results are robust to alternative statistical measures and to endogeneity tests. BoD size, auditor size/type, frequency/number of BoD meetings, and firm size are also significant factors affecting accounting fraud.

The study contributes to the literature on corporate governance, agency theory and fraud by combining the agency perspective (represented by compensation and the agency relationship between directors and shareholders) with the corporate governance perspective (represented by governance variables), which are both significant in the context of accounting fraud. The study also extends previous research by offering an alternate view to the agency theory perspective, which supports the use of stock-based compensation (Jensen and Meckling, 1976; Boumosleh, 2009) as a means of aligning the interests of agents (directors) and principals (shareholders). The results of this study forges ahead an alternate view which argues that stock-based compensation may harm shareholders by providing incentives for FSF. From a practical perspective, these findings provide insights into effectively structuring and designing directors' compensation packages by arguing against the use of stock-based compensation for directors. A key limitation of this study is that it is restricted to the analysis of publicly listed companies, due to constraints on the availability of data related to corporate governance and compensation practices for private companies. Further, this research focuses on reported cases of FSF. However, there may be many cases that have either not been reported or not yet discovered. In addition, this study relies on data presented in regulatory filings of corporations, which implicitly assumes that the disclosures made by the corporations are true, fair and not misleading.

Appendix: Variable definition and measurement*

Variable Name and Definition	Label	Details	Hypothesis/ predicted association	References
Dependent Variable				
Fraud	Fraud Firm (FF)/ Control Firm (CF)	"1" for fraud firm and "0" for control firm Source: SCAC, Compustat		Hass <i>et al.</i> , 2016; Crutchley and Minnick, 2012
Main Independent Variables				
Log of directors' total compensation	I_TCAD	Log of total compensation of all directors; Source: SEC Filings	H1 (+)	Conyon, and He, (2012, 2016); Hass <i>et al.</i> 2016
Shareholding of all directors (%)	ADSP	Percentage Shareholding held by all directors; No. of shares beneficially owned by all Directors (as per the SEC filing for the match year)/ Number of shares outstanding;	H2a(+)	Bhagat and Bolton, 2008; Kosnik, 1990

Variable Name and Definition	Label	Details	Hypothesis/ predicted association	References
		Source: SEC Filings - beneficial ownership statistics, Compustat		
Directors' stock-based compensation percentage	ADSCPRT	(Value of Stock Awards + Value of Option Awards) / (Salary + Bonus + Fees Earned or Paid in Cash + Value of Stock Awards + Incentive Compensation + Value of Option Awards + Non-Equity Incentive Plan Compensation + Change in Pension Value and Non-Qualified Deferred Compensation Earnings + All Other Compensation); Source: SEC Filings	H2b(+)	Crutchley and Minnick, 2012; Armstrong <i>et al.</i> , 2010
Percentage of Independent Directors on BoD	INDPRT	Percentage of Independent Directors; Source: SEC Filings	H3(-)	Neville <i>et al.</i> , 2019; Hass <i>et al.</i> 2016
Percentage of Female Directors	FDPRT	Percentage of Female Directors; Source: SEC Filings	H4(-)	Liao <i>et al.</i> , 2019; Harakeh <i>et al.</i> , 2019

Variable Name and Definition	Label	Details	Hypothesis/ predicted association	References
Average age of all directors	AvAge	Average age of all directors; Source: SEC Filings	H4(-)	Xu <i>et al.</i> , 2018
Other Independent Variables				
Log of Executive Directors' total compensation	I_TCED	Log of compensation of executive directors; Source: SEC Filings	(+)	
Shareholding of Executive directors (%)	EDSP	Percentage Shareholding held by executive directors; Formula same as for ADSP; Source: SEC Filings	(+)	
Executive Directors share based compensation percentage	EDSCPRT	Share-based compensation percentage of executive directors; Formula same as for ADSCPRT; Source: SEC Filings	(+)	

Variable Name and Definition	Label	Details	Hypothesis/ predicted association	References
Log of Independent Directors' total compensation	I_TCIND	Log of the compensation of all independent directors; Source: SEC Filings	(+)	
Shareholding of Independent Directors (%)	INDSP	Percentage Shareholding held by independent directors; Formula same as for ADSP; Source: SEC Filings	(+)	
Independent Directors share based compensation percentage	INDSCPRT	Share-based compensation percentage of independent directors; Formula same as for ADSCPRT; Source: SEC Filings	(+)	
Log of Non-Executive Non-Independent Directors' total compensation	I_TCENID	Log of the compensation of all Non-Executive and Non-Independent directors; Source: SEC Filings	(+)	

Variable Name and Definition	Label	Details	Hypothesis/ predicted association	References
Shareholding of Non-Executive Non-Independent Directors (%)	NENIDSP	Percentage Shareholding held by non-executive non-independent directors; Formula same as for ADSP; Source: SEC Filings	(+)	
Non-Executive Non-Independent Directors share based compensation percentage	NENIDSCPRT	Share-based compensation percentage of non-executive non-independent directors; Formula same as for ADSCPRT; Source: SEC Filings	(+)	
Control Variables				
Match Year ROA (%)	ROA	Return on Assets (ROA); Calculated as $ROA = \text{Net Income} / \text{Total Assets}$; Source: Compustat		Erickson <i>et al.</i> , 2006; Hass <i>et al.</i> , 2016

Variable Name and Definition	Label	Details	Hypothesis/ predicted association	References
Match Year MV/BV	MV/BV	Market Price per share/ Book Value per share; Calculated as MV/BV = Closing Price/Book Value Per Share; Source: Compustat		Canyon and He, 2016; Erickson <i>et al.</i> , 2006
Total Number of Directors	BoDS	Total Number of Directors; Source: SEC Filings	(-)	Ntim <i>et al.</i> , 2015; Deutsch <i>et al.</i> , 2011
Percentage of Executive Directors	EDPRT	Percentage of Executive Directors; Source: SEC Filings	(+)	Guangguo <i>et al.</i> , 2019
Institutional Ownership	IOPRT	Percentage of shareholding with Institutional Owners; Source: Thomson Reuters Institutional (13f) Holdings - Stock Ownership Summary via Wharton Research Data Services (WRDS)	(-)	Ntim <i>et al.</i> , 2015; Lel, 2018
CEO and Chair of BoD same person	CDual	"1" in case of CEO duality and "0" otherwise;		Core <i>et al.</i> , 1999; Dahya <i>et al.</i> , 2009

Variable Name and Definition	Label	Details	Hypothesis/ predicted association	References
		Source: SEC Filings		
Match Year Modified Total Debt	MLEV	MLEV = Total Debt/Total Assets; Source: Compustat		Ntim <i>et al.</i> , 2015; Hass <i>et al.</i> , 2016
Auditors from Big 4 Accounting Firms or Not	ABig4	"1" if auditor among the Big4 firms and "0" if auditor not among the Big4 firms; Source: Compustat	(-)	Lennox and Pittman, 2010
Number of Board Meetings	NoBM	Number of Board Meetings in the Match Year; Source: DataStream	(-)	Erickson <i>et al.</i> , 2006
Ownership Concentration	HHI	Ownership Concentration – Herfindahl - Hirschman Index; Source: WRDS Thomson Reuters Institutional (13f) Holdings - Stock Ownership Summary	(+)	Al-Jaifi, 2017

Variable Name and Definition	Label	Details	Hypothesis/ predicted association	References
Firm Size	I_TA	Log of Total Assets; Source: Compustat		Markevich and Rosner (2013); Gao <i>et al.</i> (2017)
Log of CEOs' total compensation	I_TCCEO	Log of compensation of CEO; Source: SEC Filings	(+)	
Shareholding of CEO (%)	CEOSP	Percentage Shareholding held by CEO; Formula same as for ADSP; Source: SEC Filings	(+)	
CEO's share based compensation	CEOSCPRT	Share-based compensation percentage of CEO; Formula same as for ADSCPRT; Source: SEC Filings	(+)	

* All variables are measured as of the match year

6. Paper 3 – ‘Do fraud firms differ? – A perspective from the fraud triangle. A comparative study of the United States and China’

Abstract

This research paper presents a comparative analysis of the incidence of financial statement fraud (FSF) in the United States (US) and China. This paper presents a theoretical comparison of the two countries on the corporate governance scenario, institutional and cultural background, legal orientation and systems, and compensation practices (specifically directors' compensation) in the two countries in the first part. In the second part, an empirical analysis of the incidence of FSF comparing the two countries on the three dimensions of the Fraud Triangle, namely motivation/pressure, rationalisation, and opportunity, is undertaken. A propensity-score-matching-based regression analysis to identify factors that affect the incidence of FSF in the two countries has also been incorporated. The results of analysis of variance indicate that the two countries differ significantly on all identified measures of the Fraud Triangle, except for external financing need and income disparity. Additionally, results of the regression suggest that firm-level variables and governance measures such as leverage, independent directors, CEO duality, frequency of board meeting, and Big-4 auditor have a significant impact on the incidence of FSF whereas country-level variables such as education, income disparity, and rule of law do not affect the incidence of FSF.

6.1 Introduction

Ever since the high-profile financial statement frauds (FSF) of the early 21st century (such as Adelphia, Enron, Qwest Communications, Tyco, WorldCom, and Xerox) were uncovered, themes such as corporate governance, business ethics, and corporate transparency (Low et al., 2008) have come to the forefront in academic research. FSF has adverse repercussions for all stakeholders (i.e., auditors, creditors, customers, employees, investors, pensioners, regulators, etc.) of a corporation alike. Apart from the negative impact on cost of capital and on security prices, erosion in the market capitalisation of fraud firms to the tune of billions of dollars has been recorded (Rezaee, 2005).

The cases of impropriety in financial statements are not just limited to the developed economies; the developing/transition economies have had their own share of such distressing improprieties. Both the US and China continue to be marred by such scandals, albeit not of the same proportion as in the early 21st century, which is evident from the number of Accounting and Auditing Enforcement Releases (AAERs) released by the US Securities and Exchange Commission (SEC) and the number of cases reported by China Securities Regulatory Commission (CSRC). The SEC released about 194 AAERs¹⁹ whereas CSRC reported 2,802 instances of violations²⁰ between 2018 and 2019. Therefore, understanding the reasons for FSF assumes critical significance for devising methods for obviating such frauds in the future.

The Fraud Triangle (TFT) is one of the most eminent theoretical explanations to elucidate the why, who, and how of fraud. Propounded by Cressey (1953), TFT has three dimensions – motivation/pressure, rationalisation, and opportunity. Albrecht et al. (2004) use the TFT framework to explore the reasons that led to a spate of frauds from the late 1980s to early 2000s. Albrecht et al. (2008) apply the TFT model to the incidence of FSF and explain the reasons for ethical lapses in the US. The TFT model is used in this comparative study of the US and China to explore the reasons for FSF in the two countries. Funding pressure, leverage ratio, directors' compensation and shareholding all represent motivation/pressure for FSF in this study. Access to education, income disparity, and cultural differences depict rationalisation, whereas weakness in internal governance (represented by percentage of independent directors, CEO duality, board size, frequency of board meetings, auditor type, and institutional ownership) and governance at the country level (represented by rule of law) demonstrate opportunity for FSF.

Differential association/social learning theory argues that “if management fraud is to be reduced significantly, the ethics of business personnel will have to change significantly” (Cressey, 1986, p. 195). Ethics in turn are a function of education, social and cultural structure (Rest & Thoma, 1985; You & Khagram,

¹⁹ <https://www.sec.gov/divisions/enforce/friactions/friactions2018.shtml>. Accessed in September 2021.

²⁰ <https://us.gtadata.com/>. Accessed in September 2021.

2005). Thus, this study uses corruption culture (Liu, 2016), access to education, and income disparity (Chen, 2014) as measures of rationalisation of FSF. Opportunities for FSF are measured in terms of weakness in governance/controls at country and firm level (Chen et al., 2016; Ghafoor et al., 2019) whereas pressure is assumed to be a function of the level of reliance on external funding (Shi et al., 2017), level of leverage (Albrecht et al., 2004; Ghafoor et al., 2019), and directors' compensation and shareholding (Albrecht et al., 2004; Choo & Tan, 2007; Ghafoor et al., 2019). This research focuses on directors' compensation and shareholding because directors are instrumental in monitoring management (Jensen & Meckling, 1976; Del Brio et al., 2013), and in achieving alignment of interests of managers and shareholders (Boyd, 1995) and thus have some bearing on the incidence of FSF.

The hypotheses are tested using a sample of 357 US and 903 Chinese fraud firms over the sample period from 2005 to 2018. Analysis of variance is used to compare the fraud firm from the two countries on the three dimensions of the fraud triangle and propensity-score-matching-based probit regression is employed to find which variables of the fraud triangle have a significant influence on the incidence of FSF in the combined analysis of US and China.

The results of the analysis of variance (ANOVA) indicate that the FSF/fraud firms in the two countries differ significantly on all the identified measures of the fraud triangle (except for external financing need and income disparity) whereas the results of the propensity score matching highlight the significance of firm-level corporate governance variables in influencing the likelihood of FSF. Firm-level governance variables such as leverage, percentage of independent directors, CEO duality, frequency of board meetings, and auditor type have a statistically significant impact on the incidence of FSF whereas country-level measures are insignificant.

There are several motivations to examine the reasons for FSF in a comparative study between the US and China. Firstly, the US and China are the two of the largest economies in the world in terms of GDP²¹. They also have the world's largest stock markets (New York Stock Exchange (NYSE), National Association of Securities Dealers Automated Quotations (NASDAQ), and Shanghai Stock Exchange)²². Secondly, these two countries are culturally very different, with the US being an individualist society and China being marked by collectivism and hierarchy (Hofstede Insights, 2021). These differences are also visible in their management practices, where the US traditionally relies more on formal agreements and discreet contracts while China has traditionally relied more on informal/personal relationships and exchange of favours (Lovett et al., 1999). On the corporate governance front also, there are apparent differences between the two countries. The US has been a front-runner in corporate governance whereas China is a late entrant with company law being introduced

²¹ <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD>. Accessed on 8th September 2021.

²² <https://www.statista.com/statistics/270126/largest-stock-exchange-operators-by-market-capitalization-of-listed-companies/>. Accessed on 8th September 2021.

in the country only in 1994 (Fleckner et al., 2013). Further, CSRC (China) was formed in 1992 whereas the SEC (US) was established way back in 1934. Additionally, according to Franke and Richey (2010), in case of country comparisons, choosing countries which considerably vary in cultural dimensions can be helpful in identifying relationships. Sivakumar and Nakata (2001) support this assertion and argue that countries with maximum difference in cultural scores should be chosen to ensure that the impact on the dependent variable is attributable to the independent variable. US and China satisfy the above requirements as these two countries vary significantly on cultural variables. Finally, with respect to directors' compensation, the US has a broader perspective as it extends stock and option-based compensation to directors (Gordon, 2007) whereas in China, there is reluctance to use stock/option-based compensation (Adithipyangkul et al., 2011), which was permitted by CSRC only from December 2005 (Jiang et al., 2017). Another interesting fact about these two countries is the extent of their interdependence on each other. In 2019, the US was the largest trade partner of China, accounting for 16.75% of China's total imports and exports, while China was the third largest trading partner of the US, accounting for 6.48% of the latter's total exports and imports in 2019²³.

This study differs from other comparative studies on governance, culture, and corruption/fraud, in that it specifically looks at the cases of FSF in China and US whereas existing research has looked either at broad indicators of corruption or at earnings management and has mapped them against national culture, such as Boateng et al. (2021), Douplik (2008), Getie Mihret (2014), and Lewellyn and Bao (2017). Another distinctive feature of this study is that it focuses on directors' compensation and shareholding rather than on executive compensation. This shift in focus is vital because directors play a prominent role in the monitoring function and are the first line of defence for the shareholders (Weisbach, 1988). They are the quintessential internal control mechanism employed by shareholders to exercise control over management (Adams et al., 2010). Further, it is their primary duty to set the right tone at the top, which has implications regarding the truthfulness of financial statements (Brennan & McGrath, 2007). As truthful financial statements are vital from the perspective of all stakeholders, it is important that the directors' interests are well aligned with those of the shareholders and compensation is vital in achieving this alignment between agents and principals (Jensen & Meckling, 1976).

The main contribution of this study arises from its focus on FSF in a comparative study of two of the world's largest economies. This research provides incremental contributions to the literature on corporate governance, agency theory, institutional theory, and accounting fraud. China differs considerably from Western countries in terms of culture and institutional and political conditions. However, there is a tendency to apply theories and practices of developed countries to the emerging markets, even if such application may not

²³ <https://wits.worldbank.org/CountryProfile/en/Country/CHN/Year/2019/Summary>. Accessed on 16 October 2021.

be most prudent as all countries differ culturally (Gladwin, 1981; Hofstede, 1993). Hence, it is important to investigate how the two countries differ on the factors that influence the incidence of FSF, which factors affect the occurrence of FSF in the two countries, and whether the governance prescriptions of the developed world are relevant to transition economies like China. Further, given the high interdependence of these countries on each other, it is only natural for Chinese corporations to operate and get listed in the US and vice versa. Should that be the case, knowing and understanding factors which may distort the truthfulness of financial statements and devising ways and means to deal with them is a fundamental requirement. Additionally, this study focuses on two different governance paradigms in two countries at different levels of economic development (developed and emerging/transitioning) and the results of this study can be extended to other developed and emerging economies which share similar governance paradigms.

The remainder of the paper is organised as follows. In the second section, the existing literature relevant to this study is discussed and the hypotheses are developed. The research method is outlined in the third section, followed by the results in section 4. Section 5 provides the conclusion and implications of this study.

6.2 Literature review and hypothesis development

6.2.1 The US vs China

Legal and political orientation

The legal orientation of the US is common-law-based, whereas China is civil-law-based (being derived from the German civil law). Compared to common law, civil law is marked by substantial government regulation and ownership, which may translate into greater corruption (La Porta et al., 2008). Common law, on the other hand, is associated with greater ‘judicial independence’, ‘security of property rights’, and ‘better contract enforcement’. Common law can be said “to support private market outcomes” whereas civil law seeks to “replace such outcomes with state-desired allocations” (La Porta et al. 2008, p. 286). Ji et al. (2020) support this classification of legal orientation by concluding that in China, legal protection for accounting standards and investor rights is not as developed as in Western countries.

With respect to political orientation, China is seen to be “rebuilding of a communist political system” (Mihalyi & Szelenyi, 2021, p.204), whereas the US continues to be a democratic state. Aidt et al. (2008) argue that the quality of political institutions determines the impact of corruption on growth. In countries with a superior quality of political institutions, corruption has a substantial negative effect on growth.

Socio-cultural differences

Aubert (1952, p. 264) contends that “white-collar crime seems to be one of those phenomena which are particularly sensitive to – and therefore highly symptomatic of – more pervasive and generalisable features of the social structure”. Gray (1988) propounds the theory of influence of culture on accounting and concludes that Anglo culture is associated with high transparency and optimism whereas less developed Asian culture is more associated with secrecy and conservatism. Lalwani et al. (2006) argue that individualist cultures (such as America) are marked by self-deception while collectivist cultures (such as in Asia) are marked by impression management.

Chand et al. (2012) conclude that Chinese accounting students display greater secrecy and conservatism as opposed to their Australian counterparts. Further, this difference in culture cannot be moderated even with similarity in education. Bik and Hooghiemstra (2018) document that collectivist cultures are negatively associated with auditors’ compliance with audit firms’ global procedures for fraud risk assessment.

Hofstede Insights (2021) provides six dimensions to national culture. China and the US have the following scores on these parameters of culture:

Hofstede Cultural Comparison

Cultural Dimension	China	US	Score Interpretation
Power Distance	80	40	High score implies inequality among people is acceptable and people accept a hierarchical order which doesn’t have to be justified.
Individualism	20	91	High score indicates individualism wherein individuals take care of themselves. Low score implies collectivist culture wherein ‘in-group’ relationships take precedence and there is preference for ‘we’ than for ‘I’.
Masculinity	66	62	High score (masculine) implies the society is driven by competition and has inclination towards achievement, assertiveness, and heroism whereas a low score (feminine) represents a society driven by caring for others, modesty, and cooperation.

Cultural Dimension	China	US	Score Interpretation
Uncertainty Avoidance	30	46	Low score implies comfort with ambiguity whereas a high score represents discomfort with ambiguity and uncertainty.
Long-term Orientation/Future Orientation	87	26	High score reflects the society's focus on preparing for future through thrift, saving, and investing (pragmatic/ long-term approach). Low score indicates short-term/normative orientation.
Indulgence	24	68	Low score signifies 'restraint' whereas a high score represents indulgent societies. Indulgence represents free gratification of human drives whereas restraint represents suppression of need for gratification.

Source: Hofstede Insights (2021)

As is evident from the table above, culture in China is marked by high degrees of collectivism and power distance, implying that the Chinese society accepts hierarchical order and focuses on 'we' rather than on 'I'. This contrasts with the US, where the focus is on individualism. Further, in the US, a culture of 'the winner takes all' pervades (Barney, 2009) whereas China traditionally believes in the system of equal pay and is only now transitioning into a system of performance-linked pay (Chow, 1992).

Though the Hofstede cultural index is criticised for its faulty assumptions as well as for its a restricted classification of culture (McSweeney, 2002), it is still useful in predicting behavioural issues (Smith, 2006; Chen, 2014).

Compensation practices

Barney (2009) argues that culture is the factor which ultimately determines levels of compensation and its regulation. In line, Conyon and Murphy (2000, p. 667), state that "The United States, as a society, has historically been more tolerant of income inequality, especially if the inequality is driven by differences in effort, talent, or entrepreneurial risk taking".

China, traditionally a communist state, has worked on an egalitarian system of equitable pay (Chow, 1992; Adithipyangkul et al., 2011), however, following

China's economic liberalisation, the country has transitioned to incentive-based pay/performance-linked pay systems. Further, though managerial compensation has increased considerably in China, it is still modest compared to developed countries (Jiang & Kim, 2015).

With respect to adoption of stock-options and stock-based compensation, there is still a marked difference between the two countries. In China, stock options are seldom offered (Adithiyangkul et al., 2011). Stock options were prohibited in China till 2005, after which they were allowed to be offered as long-term incentives by public corporations that had completed their structural reforms, whereas in the US, stocks and stock options are often part of compensation packages (Firth et al., 2014).

Corporate governance

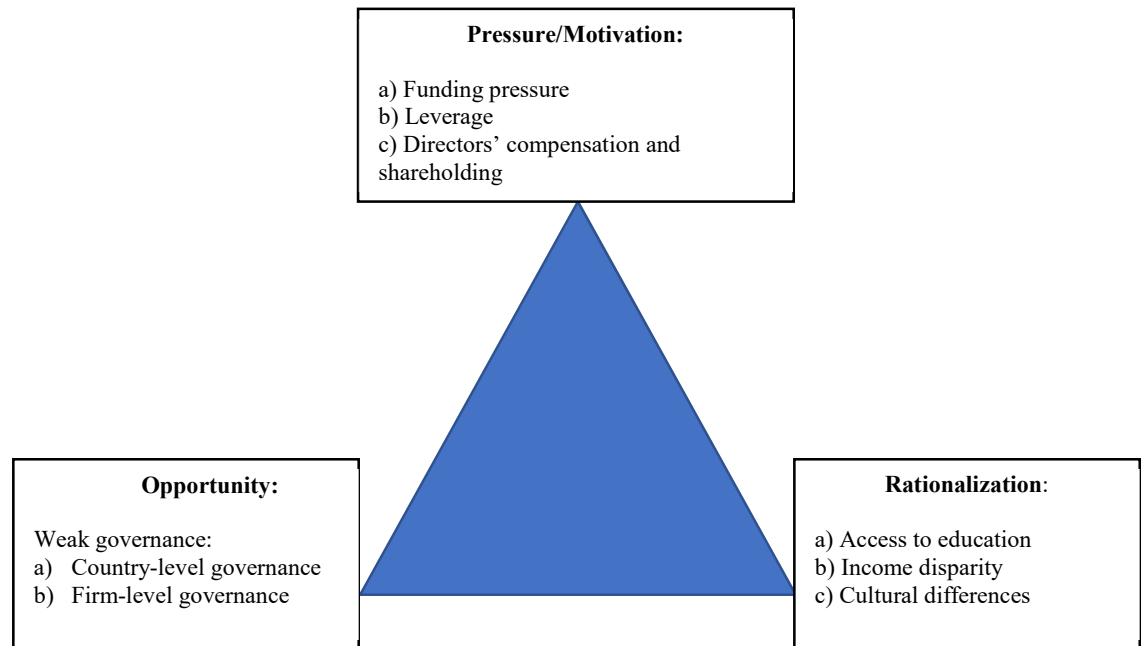
On the corporate governance front, the Anglo-American model of governance, followed by the US, draws from the agency theory, which argues that governance conflicts are principal-to-agent conflicts and are due to separation between ownership and control, whereas in the case of China, the governance conflicts are primarily principal-to-principal (PP) conflicts between majority and minority shareholders (Habib & Jiang, 2015). PP conflicts are the result of concentrated and family ownerships, weak legal environment, weak formal institutions, and weak external governance mechanisms. Further, in the case of agency conflicts, internal (such as compensation, board of directors, concentrated ownership) and external governance (such as takeover, product market competition, and labour market) mechanisms can be bundled up together to tackle the governance issues. However, the efficacy of such bundles depends upon the institutional structure of the country. For instance, in the case of China, 'concentrated ownership' is the very root of PP conflicts whereas in the case of the US, 'concentrated ownership' is an internal governance mechanism (Young et al., 2008). Further, compared to the US, the ownership concentration is very high in China. Thus, in the case of China, high ownership concentration may reflect expropriation of wealth from minority shareholders (Jiang & Kim, 2015).

Additionally, CEO duality is less severe in China compared to the US (Jiang & Kim, 2015).

6.2.2 The framework

For the purpose of this research, the following Fraud Triangle framework is proposed:

Figure 1: The Fraud Triangle (TFT) framework



A fundamental theoretical tenet in literature is that corruption/unethical behaviour/fraud is a consequence of motivations and opportunities, which is also the basis of TFT framework. TFT makes an attempt to explain 'why fraud is committed'. Developed by Cressey (1953), this theoretical model is embedded in psychology and has three prongs – pressure, opportunity, and rationalisation. According to Dellaportas (2013), 'pressure' signifies the incentives/motivators to commit fraud and 'opportunity' provides the 'means' to take the fraudulent intent to its culmination, whereas 'rationalisation' assists in dealing with the cognitive dissonance associated with fraudulent behaviour. Further, the model is based on the assumption of an equilateral triangle wherein each element is equally weighted.

Among the three prongs of TFT, Dellaportas (2013) argues that opportunity rather than motivation is a better predictor of fraud, and the former also holds the key to control it. Thus, it pays to restrict the opportunities to commit fraud.

In the next section, the hypotheses are developed and the three dimensions of TFT framework are discussed in greater detail.

6.2.3 Hypothesis development

FSF is a kind of corruption (Albrecht et al., 2008); therefore, this study draws from the literature on corruption along with that on restatements, earnings management, and FSF to build its case.

Pressure/Motivation

a) External financing need

Shi et al. (2017) argue that high levels of financing need to finance growth can induce fraud. Bell and Carcello (2000) also identify rapid growth as a fraud risk factor. Similarly, Teoh et al. (1998) find that firms undertake earnings management prior to an equity offering. Linck et al. (2013) report that discretionary accruals can be used by financially constrained firms to raise debt and equity to fund valuable projects. In a similar vein, Chandra and Schneible (2019) conclude that earnings management precedes raising of external financing, to manage the expectations of investors. Alhadab et al. (2015) also find evidence of upward earnings manipulation by IPO firms using accrual and real earnings management whereas Efendi et al. (2007) provide evidence of misstatements by firms who raise external financing. Dechow et al. (1996) find that raising cheaper external financing can be a significant motivation for earnings manipulation. Given Chinese firms' greater dependence on informal financing (Elston et al., 2016), the first hypothesis is that:

H1: Compared to China, the external financing need of US firms is likely to lead to higher probability of fraud committed by directors.

b) Leverage

Leverage can motivate fraud due to the need to either avoid non-compliance with debt covenants or raise funds at a lower cost, or due to the sheer magnitude of debt on the books of accounts.

Ghafoor et al. (2019) and Spathis (2002) find that leverage is significantly and positively associated with the likelihood of fraud. Sweeney (1994) finds that firms that violate their debt covenants make more income increasing changes compared to those who do not violate these covenants. Albrecht et al. (2004) also identify high leverage as a perceived pressure of fraud. In fact, the high-profile cases of accounting fraud, including Adelphia, Enron, Global Crossing, and WorldCom, were marked by very high levels of debt on the books of these fraudulent corporations (Albrecht et al., 2004). Burns and Kedia (2006) find that restatement is more likely in firms that are highly leveraged.

In contrast, Dechow et al. (2011) do not find any significant effect of leverage on the misstatements. Similarly, Beneish (1999) does not report any significant association between leverage and earnings overstatement. However, high leverage is a widely accepted indicator of financial distress.

In China, informal capital (family funding and personal savings) is the predominant source of start-up capital. Further, as compared to the US, the capital markets in China are not as developed, and are smaller (Elston et al., 2016). Thus, it is possible that the formal sector in China is unable to extend the required financial support. Chen (2004, p. 1341) finds that Chinese firms use a

pecking order of “retained profit, equity, and long-term debt”. According to this study, Chinese firms have low levels of long-term debt and prefer short-term funding as compared to firms in developed economies. Fan et al. (2012) also find evidence of lowest debt maturities in China in their study involving 39 countries. With respect to the US corporations, Graham et al. (2015) find that the use of leverage has increased over the past decade and this increase can partly be explained by a decline in government borrowing (which reduces the supply of competing securities) and an increase in financial intermediation (which facilitates access to capital by reducing agency costs and information asymmetry). Thus, the next hypothesis is that:

H2: Compared to China, higher leverage of US firms is likely to lead to higher probability of fraud committed by directors.

c) Directors’ compensation and shareholding

Empirical investigation of linkages between executive compensation and fraud has provided mixed results, with one school of thought claiming that executive compensation can induce fraud (Goldman & Slezak, 2006; Efendi et al., 2007; Brennan & McGrath, 2007) and the second school of thought arguing against any such association (Armstrong et al., 2010; Erickson et al., 2006). Given the lack of any conclusive evidence, this subject warrants further investigation. Further, most of the existing empirical evidence has focused on executive compensation. However, directors, as monitors of the management, have a significant role to play in the internal governance function of a corporation and hence in the prevention of fraud. Therefore, this study focuses on directors.

According to Andreas et al. (2012), directors act as delegated monitors on behalf of shareholders, and hence they can be construed to be agents of the latter. Agency theory propounds the institution of adequate incentives for agents for the alignment of their interests with those of the principals (Jensen & Meckling, 1976). However, directors can be induced into fraud due to either the nexus with management or the pursuit of goals of wealth maximisation. For instance, Chidambaran et al. (2010) and Khanna et al. (2015) assert that directors’ connectedness with CEOs can increase the likelihood of fraud while there is evidence of earnings management to increase cash compensation (Barton, 2001) and use of accounting procedures with a view to maximise the value of bonuses (Healy, 1985). Hsieh et al. (2016) report positive association between cash-based compensation and earnings management. The above evidence implies that compensation can induce fraudulent behaviour.

Ye (2014) reports a positive association between independent directors’ cash-based compensation and earnings management in China whereas in the case of the US, Persons (2012) did not find any association between independent directors’ cash compensation and financial fraud. Therefore, the next hypothesis is that:

H3a: Cash compensation is likely to be a more significant influencer of FSF for China as compared to the US.

Directors' shareholding in the corporations they monitor is also an instrument of the formers' wealth. Hence, this paper investigates whether directors' shareholding has an association with the incidence of FSF. Though empirical evidence on this association is sparse, there is some evidence that directors' shareholding can make them compromise on their objectivity and independence, make BoD discussions less transparent, and make the directors acquiesce to aggressive financial reporting (Rose et al., 2013). Ye (2014) states that stock-based compensation to outside directors is more prevalent in the US than in China. In the US, following the liberalisation of Rule 16b-3 in 1996, firms now have greater discretion to grant stock and options to their directors (Farrell et al., 2008) whereas in China, stock-based compensation was permitted only from December 2005 (Jiang et al., 2017).

Therefore, the next hypothesis is that:

H3b: Compared to China, higher levels of directors' shareholding in US is likely to lead to higher probability of fraud committed by directors.

Rationalisation

Rationalisation is the most difficult prong of the TFT to articulate and is influenced by the demographic characteristics of those who bear the risk (Troy et al., 2011). Hence, access to education, income disparity, and cultural differences between the US and China are included as measures of rationalisation.

a) Education

Access to education and ethical behaviour are intrinsically related. Browning and Zabriskie (1983) find that a higher level of education is related to gifts from vendors being viewed as unethical. Rest and Thoma (1985) find evidence of advancement in moral judgement with formal education. Similarly, Evert et al. (2018) report a positive relationship between organisations' virtue orientation²⁴ and education. Further, education is argued to have an impact on organisations' strategic choices (Hambrick & Mason, 1984). Troy et al. (2011) find that CEOs' business education is negatively related to accounting fraud. Davis and Welton (1991) also argue in favour of education and contend that college education modulates the students' perception of ethical behaviour in favour of the society's expectations. Chen (2014) finds that access to education has a negative effect on the willingness to justify unethical behaviour. According to Meyer (1977, p. 55), education prepares 'individuals to act in

²⁴ A set of beliefs and values that supports virtuous behavior and ethical characteristics.

society' via schools which are 'organized networks of socializing experience'. Wright (1995) also confirms an association between education and good ethical behaviour.

Yang et al. (2014) argue that in China, most of the education sources are controlled by the government, yet government expenditure on education has not kept pace with GDP growth and such insufficient investment results in a disparity in education access. Qian and Smyth (2008) report inequality in education access between urban and rural China. Further, in China, public expenditure on education (as a percentage of GDP) has averaged around 3.75% per annum from 2010 to 2018²⁵ as compared to 4.25% in the US²⁶. Thus, the next hypothesis is that:

H4: Compared to the US, lower access to education in China is likely to lead to higher probability of fraud committed by directors.

b) Income disparity/inequality

Income inequality is argued to increase the level of corruption, and high levels of corruption further accentuate inequality (You & Khagram, 2005). Knack and Keefer (1997) report strong negative association between income inequality and trust. Glaeser et al. (2003, p. 215) contend that inequality adversely affects social and economic progress via "subversion of legal, regulatory, and political institutions by the powerful", and this subversion can exhibit itself in the form of intimidation, corruption, or other forms of influence. You and Khagram (2005) consider that very high CEO compensation packages, aimed at aligning their interests with those of the shareholders, increase income inequality and stimulate corporate corruption.

Income disparity and education are also linked. According to Tuliao and Chen (2019, p. 828), "high economic inequality may undervalue the importance of education", whereas "low economic inequality may encourage greater interest in education". Thus, income disparity propels countries into a vicious cycle of corruption and inequality by fostering the "norm of corruption as acceptable behaviour" (You & Khagram, 2005, p. 136). Further, such inequality also undermines the corrective role that education can play in enhancing ethical behaviour. Treisman (2000) asserts that economic development, via the spread of education and rationalisation of private and public roles, reduces corruption. Though both China and the US are marked by income inequality (Saith, 2011), over the past decade, income inequality in China has surpassed the warning levels specified by the World Bank (Jung & Vijverberg, 2019). Therefore, the hypothesis is that:

²⁵ <https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS>. Accessed on 12 November 2021.

²⁶ <https://data.oecd.org/eduresource/public-spending-on-education.htm>. Accessed on 12 November 2021.

H5: Compared to the US, higher social inequality in China is likely to lead to higher probability of fraud committed by directors.

c) Culture

Culture plays a significant role in shaping behaviour as well as in the acceptance/rejection of behaviours. For instance, East Asians/the Chinese have been found to avoid correspondence bias²⁷ and be more inclined towards situational/contextual explanations of behaviour as compared to their Western counterparts/Americans. Thus, the Chinese exhibit a more holistic cognition as compared to Americans (Choi et al., 1999; Ji et al., 2000).

Getie Mihret (2014) argues that fraud cannot be extricated from its social context. Aubert (1952), in their study on white collar and social structure, works on the premise that social norms are determinants of white-collar crimes. Cressey (1986) lays emphasis on the role of cultural ideologies, evident in certain verbalisations, which make dishonest behaviour acceptable. Wong-On-Wing and Liu (2007) find that cultural differences play a role in situational endorsement and acceptability of punitive measures associated with fraud. Parsons et al. (2018) also link culture to financial misconduct and conclude that culture affects misbehaviours such as financial misconduct. Culture and ethnic origins also affect managers' disclosure narratives during earnings conference calls. Managers from individualistic cultures are likely to be more optimistic and less apologetic compared to those from collectivist cultures (Brochet et al., 2019). Daniel et al. (2012) find that national culture impacts the institutional environment, which in turn impacts the corporate governance practices of a nation. Haxhi and van Ees (2010) find that in cases of cultures with higher power distance, the first issuer of corporate governance is likely to be the government as opposed to stock exchanges and investor groups in cases of cultures with a lower value of power distance. Liu (2016) concludes that the cultural background of the corporate insiders²⁸ determines the corporate culture, which in turn influences the likelihood of the corporates engaging in opportunistic behaviours such as accounting fraud, earnings management, insider trading, and options backdating. Corporations with high levels of corrupt culture are more likely to engage in corporate misconduct (Chand et al., 2012).

The extent of corruption a society experiences is the function of its community tolerance for such deviant behaviour (Ghazi-Tehrani & Pontell, 2019). China provides a unique setting of corruption culture as it is marked by economic decentralisation and political centralisation, along with the direct control of regional governments over scarce resources. Further, the power of the local

²⁷ Attribution error wherein behaviour is attributed to the object and not to the field, even when the behaviour is heavily influenced or produced some situational/contextual factor.

²⁸ Corporate insiders include all directors and officers.

officials and the stress on social networking for doing business can breed corruption in China (Chen et al., 2020; Xu, 2011). Therefore, the next hypothesis is that:

H6: Compared to the US, higher corruption in China is likely to lead to higher probability of fraud committed by directors.

Opportunity

Ndofor et al. (2015, p. 1793) state that “opportunity is both a necessary and a sufficient condition for financial malfeasance”. Loebbecke et al. (1989, p. 25) contend that “Where controls are weak, a significant condition exists that would allow either management fraud, a defalcation, or an error to occur”.

a) Country-level and firm-level governance

Weakness in corporate governance is a precursor to/is strongly related to fraud (Beasley, 1996; Beasley et al., 2000). Further, country-level governance impacts firm-level governance by either substituting firm-level governance or by enhancing the effectiveness of the latter (Pagano & Immordino, 2012). García-Castro et al. (2013) also assert that national variables influence governance at firm level.

Loebbecke et al. (1989) find that weak internal controls are the primary indicator of management fraud in ~76% of the cases in their study. Brennan and McGrath (2007), in their study of cases of FSF in US and Europe, conclude that all fraud companies had weak control environments and such weakness in controls is necessary for FSF to occur. Bell and Carcello (2000) also identify weak internal controls as a fraud-risk factor affecting the likelihood of fraudulent reporting of financials. Dechow et al. (1996) look at weakness in firms’ governance structure as a possible explanation of earnings manipulation and find that firms manipulating earnings are more likely to be marked by CEO duality, have BoDs dominated by the management, and are less likely to have an audit committee or an outside block holder. Beasley (1996) finds that no-fraud firms have a significantly higher percentage of independent directors on the board as compared to fraud firms. Abbott et al. (2004) conclude that audit committee diligence, in terms of its independence and level of activity, is negatively related to the likelihood of restatements. However, there is some evidence of no significant impact of internal governance mechanisms in curbing earnings management (Katmon & Farooque, 2017).

Aggarwal et al. (2010) argue that governance is a function of both firm-level and country-level mechanisms. Further, firm-level governance is better in countries which have stronger investor protection and are financially and economically more developed. According to Ke and Zhang (2021), investor protection is weak in China whereas in the US it is stronger (Huang et al., 2013). Therefore, the hypotheses state that:

H7: Compared to China, better governance (country level) in the US is likely to lead to lower probability of fraud committed by directors.

H8: Compared to China, better governance (firm level) in the US is likely to lead to lower probability of fraud committed by directors.

6.3 Research method

6.3.1 Data and sample

The sample period is from 2005 to 2018. For China, data from China Stock Market & Accounting Research (CSMAR) is used to identify fraud firms. The preliminary list of fraud firms includes 2,344 cases. After removing duplicate cases and cases for which data were not available, the final China sample included 903 fraud firms.

With respect to the US, Securities Class Action Clearinghouse (SCAC) is used to obtain the initial sample of fraud firms. The focus is on fraud firms listed on the top two stock exchanges in the US – NYSE and NASDAQ. The preliminary list comprised 968 fraud firms. As the compensation data and data on some governance variables had to be hand collected, the sample was randomised to close to 500 fraud firms. After accounting for duplicates and for cases for which data were not available, the final US sample comprised 357 fraud firms.

To undertake propensity score matching (PSM) based probit regression analysis, control firms for each of the FSF firms are identified in the US and China using data from Capital IQ and DataStream, respectively. Control firms were identified using three shortlisting criteria, namely industry matching (control firm had to have the same Standard Industrial Classification (SIC) code as that of the corresponding fraud firm); control firm were firms not implicated of FSF during the sample period; and finally, the closest match in terms of total assets/net sales, or market capitalisation was chosen as the control firm.

6.3.2 Research design

Variable measurement

Variables were measured as of the match year, i.e. one year preceding the class period start year (in the case of the US) and one year preceding the first year of fraud (in the case of China) (Erickson et al., 2006; Hass et al., 2016).

Dependent variable

The main dependent variable was occurrence of FSF, which is a dummy binary variable taking a value of '1' in the case of fraud firms and '0' in the case of control firms.

Independent variables

Independent variables were categorised into three broad categories emanating from TFT, viz. pressure, rationalisation, and opportunity.

Pressure was measured by level of firm leverage (Ntim et al., 2015; Shi et al., 2017), funding pressure or external financing need (Shi et al., 2017; Demirgüç-Kunt & Maksimovic, 1998), and directors' compensation and shareholding (Hass et al., 2016; Huang & Boateng, 2017).

'Rationalisation' is viewed from a country perspective as this paper aims to compare how the two countries (the US and China) differ in circumstances which lead to FSF. Rationalisation was operationalised using level of/access to education (Chen, 2014), income disparity (Chen, 2014), and culture (Liu, 2016) wherein 'culture' measures the extent of corruption culture in the two countries.

Opportunity for FSF was operationalised using two measures, namely country-level governance indicated by 'rule of law'/quality of enforcement in the country (Leuz et al., 2003; Chen, 2016) and firm-level governance (indicated by percentage of independent directors, CEO duality, board size, frequency/number of BoD meetings, auditor type, and institutional ownership).

Control variables

For the PSM analysis, return on assets (ROA), market value/book value (MV/BV), and firm size are included as control variables.

The detailed measurement of all the variables is set out in **Appendix I**.

6.4 Empirical Analysis

To test the differences between Chinese and US FSF firms on the eight hypotheses, analysis of variance (ANOVA) (Chand et al., 2012) is conducted.

Propensity score matching (PSM) based regression analysis to test the impact of the three prongs of TFT on the incidence of FSF is also undertaken. For this regression, occurrence of FSF is the dependent variable whereas pressure (represented by leverage, need for external financing, compensation, and shareholding), rationalisation (represented by level of education, income disparity, and national culture) and opportunity (represented by country-level governance and firm-level governance culture) are independent variables under two geographical settings – China and the US. The main regression model (**Model 1**) is:

$$\text{Fraud}_{i,t} = \alpha_{i,t} + \theta_1 \text{EFN}_{i,t-1} + \theta_2 \text{LEV}_{i,t-1} + \theta_3 \text{TCAD}_{i,t-1} + \theta_4 \text{ADSPRT}_{i,t-1} + \theta_5 \text{EDI}_{i,t-1} + \theta_6 \text{GINI}_{i,t-1} + \theta_7 \text{CUL}_{i,t-1} + \theta_8 \text{ROL}_{i,t-1} + \theta_9 \text{INDPRT}_{i,t-1} + \theta_{10} \text{CDual}_{i,t-1} + \theta_{11} \text{BoS}_{i,t-1} + \theta_{12} \text{NoBM}_{i,t-1} + \theta_{13} \text{ABig4}_{i,t-1} + \theta_{14} \text{IOPRT}_{i,t-1} + \theta_{15} \text{COO}_{i,t-1} + \beta_1 \text{Controls (firm size and performance)}_{i,t-1} + \varepsilon_{i,t} \quad (\text{Model 1})$$

Multi-collinearity test and VIF analysis reveal that EDI and ROL are highly collinear; hence, supplementary models introducing EDI and ROL separately in the regression analysis have been built.

6.4.1 Descriptive results

Descriptive statistics

Table 1: Cross-country comparisons of fraud firms and other variables related to fraud triangle

Variable	China					US				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
EFN	903	0.03	0.19	-4.96	1.37	357	0.02	0.22	-0.58	2.45
LEV	903	0.27	0.19	0.00	1.31	357	0.20	0.23	0.00	1.63
I_TCAD	899	12.08	1.01	8.39	15.22	357	15.28	1.38	7.24	22.79
ADSPRT	903	10.53%	0.18	0.00%	88.83%	354	14.23%	0.20	0.00%	92.69%
EDI	903	0.61	0.03	0.52	0.65	357	0.89	0.01	0.86	0.90
GINI	903	40.77	1.87	38.50	43.70	357	40.95	0.41	40.00	41.50
CUL	903	22.72	17.60	3.20	41.00	357	47.82	32.83	7.10	76.00
ROL	903	-0.45	0.09	-0.64	-0.27	357	1.61	0.02	1.54	1.65

Variable	China					US				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
INDPRT	903	37.06%	0.07	18.18%	70.00%	357	76.02%	0.15	0.00%	100.00%
CDual	903	0.01	0.10	0.00	1.00	357	0.46	0.50	0.00	1.00
BoS	903	10.04	2.55	5.00	23.00	357	8.98	2.54	2.00	20.00
NoBM	903	9.54	3.85	0.00	32.00	341	8.64	4.08	1.00	35.00
ABig4	903	0.03	0.16	0.00	1.00	357	0.77	0.42	0.00	1.00
IOPRT	903	5.67%	0.07	0.00%	49.25%	348	68.70%	0.32	0.00%	165.72%
ROA	903	3.49%	0.08	-77.54%	125.23%	357	-1.96%	0.22	-140.95%	71.02%
MVBV	903	6.04	34.00	-121.13	816.06	357	3.21	17.29	-290.60	87.95
I_TA	903	5.98	1.21	0.08	13.38	357	7.04	1.97	2.13	13.64

The variables are as follows: EFN (External financing need), LEV (Leverage), I_TCAD (Log of Directors' total compensation), ADSPRT (Shareholding of all directors (%)), EDI (Education), GINI (Income disparity), CUL (Culture), ROL (Rule of law), INDPRT (% of independent directors on BoD), CDual (CEO and Chair of BoD same person), BoS (Total number of directors), NoBM (Number of board meetings), ABig4 (Auditors from

Big 4 accounting firms), IOPRT (Institutional ownership), COO (Country of origin), ROA (Return on assets), MV/BV (Market value/ book value), I_TA (Firm size), FDPRT (% of female directors), AvAge (Average age of all directors)

Table 2a: Comparisons of fraud firms and control firms by country of origin – China

Variable	China - Control Firms					China - Fraud Firms				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
EFN	903.00	0.06	0.11	-2.53	0.90	903.00	0.03	0.19	-4.96	1.37
LEV	903.00	0.22	0.23	0.00	3.97	903.00	0.27	0.19	0.00	1.31
I_TCAD	901.00	12.15	0.98	8.07	15.21	899.00	12.08	1.01	8.39	15.22
ADSPRT	903.00	10.62%	0.19	0.00%	83.00%	903.00	10.53%	0.18	0.00%	88.83%
EDI	903.00	0.61	0.03	0.52	0.65	903.00	0.61	0.03	0.52	0.65
GINI	903.00	40.77	1.87	38.50	43.70	903.00	40.77	1.87	38.50	43.70
CUL	903.00	22.72	17.60	3.20	41.00	903.00	22.72	17.60	3.20	41.00
ROL	903.00	-0.45	0.09	-0.64	-0.27	903.00	-0.45	0.09	-0.64	-0.27

Variable	China - Control Firms					China - Fraud Firms				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
INDPRT	903.00	37.57%	0.07	20.00%	64.29%	903.00	37.06%	0.07	18.18%	70.00%
CDual	903.00	0.00	0.06	0.00	1.00	903.00	0.01	0.10	0.00	1.00
BoS	903.00	9.99	2.38	5.00	22.00	903.00	10.04	2.55	5.00	23.00
NoBM	903.00	8.96	3.39	3.00	30.00	903.00	9.54	3.85	0.00	32.00
ABig4	903.00	0.04	0.21	0.00	1.00	903.00	0.03	0.16	0.00	1.00
IOPRT	903.00	6.35%	0.08	0.00%	75.10%	903.00	5.67%	0.07	0.00%	49.25%
ROA	903.00	5.47%	0.07	-20.82%	165.21%	903.00	3.49%	0.08	-77.54%	125.23%
MVBV	903.00	4.01	5.94	-53.66	91.64	903.00	6.04	34.00	-121.13	816.06
I_TA	903.00	5.98	1.15	2.06	13.82	903.00	5.98	1.21	0.08	13.38

Table 2b: Comparisons of fraud firms and control firms by country of origin – US

Variable	US - Control Firms					US - Fraud Firms				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
EFN	357.00	0.03	0.19	-0.61	1.63	357.00	0.02	0.22	-0.58	2.45
LEV	357.00	0.18	0.22	0.00	1.36	357.00	0.20	0.23	0.00	1.63
I_TCAD	355.00	15.18	1.14	7.93	18.68	357.00	15.28	1.38	7.24	22.79
ADSPRT	354.00	13.03%	0.19	0.00%	91.93%	354.00	14.23%	0.20	0.00%	92.69%
EDI	357.00	0.89	0.01	0.86	0.90	357.00	0.89	0.01	0.86	0.90
GINI	357.00	40.95	0.41	40.00	41.50	357.00	40.95	0.41	40.00	41.50
CUL	357.00	47.82	32.83	7.10	76.00	357.00	47.82	32.83	7.10	76.00
ROL	357.00	1.61	0.02	1.54	1.65	357.00	1.61	0.02	1.54	1.65
INDPRT	357.00	76.52%	0.15	0.00%	94.74%	357.00	76.02%	0.15	0.00%	100.00%

Variable	US - Control Firms					US - Fraud Firms				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
CDual	357.00	0.40	0.49	0.00	1.00	357.00	0.46	0.50	0.00	1.00
BoS	357.00	9.09	2.71	1.00	20.00	357.00	8.98	2.54	2.00	20.00
NoBM	336.00	8.07	4.04	1.00	32.00	341.00	8.64	4.08	1.00	35.00
ABig4	357.00	0.79	0.41	0.00	1.00	357.00	0.77	0.42	0.00	1.00
IOPRT	340.00	65.30%	0.30	0.01%	123.69%	348.00	68.70%	0.32	0.00%	165.72%#
ROA	357.00	-0.53%	0.22	-154.41%	62.03%	357.00	-1.96%	0.22	-140.95%	71.02%
MVBV	357.00	3.02	21.08	-332.41	145.83	357.00	3.21	17.29	-290.60	87.95
I_TA	357.00	6.81	1.99	0.18	13.15	357.00	7.04	1.97	2.13	13.64

IOPRT data has been collected from WRDS (Wharton Research Data Services), which in turn compiles this data from 13f filings. According to WRDS, institutional ownership percentage can be in excess of 100%, in certain cases, due to inclusion of data on long positions only.

The results of Table 1 show that that the need for external financing is, on average, greater for the Chinese FSF/fraud firms as compared to the US fraud firms. Further, leverage, board size, frequency of BoD meetings, return on assets, and market-to-book value are also higher for the Chinese fraud firms as opposed to the US fraud firms. On the other hand, directors' compensation and shareholding, access to education, social inequality, rule of law, percentage of independent directors, CEO duality, auditor among Big-4 audit firms, institutional ownership, and firm size are higher for the US as compared to China.

With respect to the comparison between fraud and control firms for China (Table 2a), it is found that Chinese control firms fare better on several governance factors and are marked by lower leverage, higher BoD independence, higher institutional ownership, and auditor among Big-4 audit firms. Further, the Chinese control firms are also characterised by higher directors' compensation and shareholding.

With respect to the US (Table 2b), the control firms are marked by higher BoD independence, larger BoDs, auditor among Big-4 audit firms, lower leverage, low CEO duality, and lower frequency of BoD meetings as compared to the FSF firms.

6.4.2 Correlation analysis

Table 3a: Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
EFN (1)	1.00								
LEV (2)	-0.130**	1.00							
I_TCAD (3)	-0.00	-0.085**	1.00						
ADSPRT (4)	0.045*	-0.179**	0.073**	1.00					
EDI (5)	-0.050*	-0.141**	0.833**	0.109**	1.00				
GINI (6)	0.01	0.062**	-0.082**	-0.091**	-0.081**	1.00			
CUL (7)	-0.051*	-0.074**	0.521**	0.073**	0.550**	-0.369**	1.00		
ROL (8)	-0.054**	-0.123**	0.803**	0.081**	0.983**	0.02	0.458**	1.00	
INDPRT (9)	-0.054**	-0.118**	0.754**	0.01	0.867**	0.02	0.437**	0.878**	1.00
CDual (10)	0.03	-0.071**	0.473**	0.035****	0.559**	0.02	0.228**	0.573**	0.521**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
BoS (11)	-0.02	0.109**	0.059**	-0.177**	-0.145**	-0.116**	0.02	-0.167**	-0.109**
NoBM (12)	-0.02	0.109**	0.01	-0.01	-0.067**	-0.111**	0.02	-0.092**	-0.048*
ABig4 (13)	-0.03	-0.049*	0.721**	-0.041*	0.759**	0.036*** *	0.380**	0.775**	0.744**
IOPRT (14)	-0.01	-0.068**	0.749**	-0.051*	0.821**	0.036*** *	0.433**	0.836**	0.803**
ROA (15)	0.434**	-0.059**	-0.112**	-0.00	-0.180**	0.03	-0.105**	-0.186**	-0.152**
MVBV (16)	-0.02	-0.03	-0.049*	-0.01	-0.03	-0.044*	0.01	-	-
								0.034*****	0.034*****
I_TA (17)	0.087**	0.178**	0.527**	-0.200**	0.324**	-0.109**	0.291**	0.293**	0.331**
COO (18)	-0.055**	-0.118**	0.793**	0.072**	0.974**	0.048*	0.442**	0.996**	0.878**

** $p < 0.01$, * $p < 0.05$, *** $p < 0.001$, ***** $p < 0.1$

Table 3b: Correlation matrix Contd.

Variables	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
CDual (10)	1.00								
BoS (11)	-0.071**	1.00							
NoBM (12)	-0.083**	0.112**	1.00						
ABig4 (13)	0.482**	0.00	-0.062**	1.00					
IOPRT (14)	0.468**	-0.092**	-0.050*	0.746**	1.00				
ROA (15)	-0.03	0.065**	-0.065**	-0.102**	-0.069**	1.00			
MVBV (16)	-0.02	-0.01	0.01	-0.045*	-0.01	-0.01	1.00		
I_TA (17)	0.276**	0.334**	0.133**	0.448**	0.365**	0.103**	-0.095**	1.00	
COO (18)	0.576**	-0.173**	-0.106**	0.778**	0.839**	-0.187**	-0.037****	0.281**	1.00

** $p < 0.01$, * $p < 0.05$, *** $p < 0.001$, **** $p < 0.1$

Highest correlation is 0.996 (between country of origin and rule of law) when all variables are included and it falls to 0.878 (between country of origin and percentage of independent directors) after excluding education and rule of law. Given the high

correlation, VIF analysis to detect the impact of multi-collinearity is undertaken and it is found that the mean VIF is well below 10, when rule of law and education are excluded. To check the impact of correlation on the regression results, four models (Model 1a - excluding rule of law and education; Model 1b - including education; Model 1c - including rule of law; and Model 1- with all variables) are run separately.

6.4.3 Empirical results

Table 4: Results of ANOVA between the US and Chinese fraud firms in the examination of factors inducing FSF in the context of the Fraud Triangle

Fraud Triangle Factor	Variable	US (Mean)	China (Mean)	Expected Direction	F	Significance Level
Pressure						
	EFN	0.02	0.03	No	1.56	0.21
	LEV	0.20	0.27	No	30.99	0.00
	I_TCAD	15.28	12.08	No	2,049.89	0.00
	ADSPRT	0.14	0.11	Yes	9.88	0.00
Rationalisation						
	EDI	0.89	0.61	Yes	23,216.39	0.00
	GINI	40.95	40.77	No	2.94	0.09

Fraud Triangle Factor	Variable	US (Mean)	China (Mean)	Expected Direction	F	Significance Level
	CUL	47.82	22.72	Yes	305.89	0.00
Opportunity						
	ROL	1.61	-0.45	Yes	1,70,000.00	0.00
	INDPRT	0.76	0.37	Yes	4,212.91	0.00
	CDual	0.46	0.01	No	681.92	0.00
	BoS	8.98	10.04	Yes	44.26	0.00
	NoBM	8.64	9.54	No	13.15	0.00
	ABig4	0.77	0.03	Yes	2,057.91	0.00
	IOPRT	0.69	0.06	Yes	3,033.44	0.00

Table 5: Results of PSM to test factors affecting FSF in the US and Chinese fraud firms in the context of TFT

Variable	Model 1a	Model 1b	Model 1c	Model 1
EFN	-0.19 (0.26)	-0.19 (0.26)	-0.19 (0.26)	-0.19 (0.26)
LEV	0.48** (0.00)	0.48** (0.00)	0.48** (0.00)	0.48** (0.00)
I_TCAD	-0.02 (0.58)	-0.02 (0.55)	-0.02 (0.60)	-0.02 (0.53)
ADSPRT	0.17 (0.24)	0.17 (0.26)	0.18 (0.24)	0.17 (0.26)
EDI		0.31 (0.81)		0.66 (0.69)
GINI	0.01 (0.69)	0.01 (0.65)	0.01 (0.73)	0.01 (0.66)
CUL	0.00 (0.96)	-0.00 (0.96)	0.00 (0.96)	-0.00 (0.88)
ROL			-0.05 (0.89)	-0.15 (0.73)
INDPRT	-0.62* (0.04)	-0.62* (0.04)	-0.62* (0.05)	-0.62* (0.04)
CDual	0.23* (0.02)	0.23* (0.02)	0.23* (0.02)	0.23* (0.02)

Variable	Model 1a	Model 1b	Model 1c	Model 1
BoS	-0.01 (0.51)	-0.01 (0.52)	-0.01 (0.51)	-0.01 (0.52)
NoBM	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)
ABig4	-0.24* (0.02)	-0.24* (0.03)	-0.24* (0.02)	-0.24* (0.03)
IOPRT	0.29 (0.09)	0.29 (0.09)	0.29 (0.09)	0.29 (0.08)
ROA	-0.61** (0.01)	-0.62** (0.01)	-0.61** (0.01)	-0.62** (0.01)
MVBV	0.00 (0.09)	0.00 (0.09)	0.00 (0.09)	0.00 (0.09)
I_TA	0.03 (0.19)	0.03 (0.20)	0.03 (0.19)	0.03 (0.19)
COO	0.20 (0.27)	0.12 (0.74)	0.30 (0.69)	0.35 (0.64)
_cons	-0.33 (0.70)	-0.56 (0.67)	-0.33 (0.70)	-0.82 (0.58)
N	2,454	2,454	2,454	2,454

*p-values in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

Table 6: % Bias and associated p-values related to PSM

	Model 1a	Model 1b	Model 1c	Model 1
EFN	-5.40 (0.15)	-5.40 (0.15)	-5.40 (0.16)	-5.40 (0.16)
LEV	2.00 (0.61)	2.00 (0.60)	2.00 (0.62)	2.10 (0.60)
I_TCAD	1.70 (0.68)	1.60 (0.69)	1.70 (0.67)	1.60 (0.69)
ADSPRT	0.70 (0.86)	0.70 (0.86)	0.70 (0.86)	0.70 (0.87)
EDI		1.80 (0.66)		1.80 (0.66)
GINI	-1.50 (0.71)	-1.50 (0.71)	-1.50 (0.71)	-1.50 (0.71)
CUL	0.90 (0.83)	0.80 (0.84)	0.90 (0.83)	0.70 (0.85)
ROL			1.60 (0.70)	1.50 (0.70)
INDPRT	1.20 (0.77)	1.20 (0.78)	1.20 (0.77)	1.20 (0.77)
CDual	0.70 (0.87)	0.70 (0.88)	0.70 (0.86)	0.70 (0.88)

	Model 1a	Model 1b	Model 1c	Model 1
BoS	-0.80 (0.84)	-0.80 (0.83)	-0.80 (0.83)	-0.90 (0.83)
NoBM	-0.90 (0.83)	-0.90 (0.82)	-0.90 (0.82)	-1.00 (0.81)
ABig4	0.90 (0.81)	0.90 (0.82)	1.00 (0.81)	0.90 (0.81)
IOPRT	0.60 (0.89)	0.50 (0.90)	0.60 (0.89)	0.50 (0.90)
ROA	-5.30 (0.19)	-5.30 (0.19)	-5.30 (0.18)	-5.40 (0.18)
MVBV	3.80 (0.15)	3.80 (0.15)	3.80 (0.15)	3.80 (0.15)
I_TA	-1.80 (0.66)	-1.90 (0.64)	-1.80 (0.66)	-1.80 (0.65)
COO	1.50 (0.72)	1.40 (0.72)	1.50 (0.71)	1.40 (0.72)

*p-values in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

To compare FSF/fraud firms in the US and in China, ANOVA (Chand et al., 2012) is used. To test H1, the values EFN across the US and Chinese fraud firms were compared using ANOVA. Similarly, H2 to H8 were tested using ANOVA on the identified variables (Table 4).

The results of ANOVA reveal that the US and Chinese fraud firms differ significantly (statistically) on all variables (except for external financing need and income inequality) with p values of < 0.05 . However, the expected direction

of the difference is in line with the hypothesis only in the case of directors' shareholding, access to education, culture, rule of law, percentage of independent directors, board size, type/size of auditor, and institutional shareholding.

The results imply that the US fraud firms experience lower pressure on account of externally financing needs and leverage as compared to their Chinese counterparts. Further, directors' compensation and shareholding are more significant pressure points in the case of US fraud firms as compared to Chinese fraud firms.

With respect to rationalisation, as expected, lower access to education and higher corruption are more important rationalisations for FSF in China. Contrary to the expectation, social inequality is wider in the US compared to China.

A lower score on rule of law provides greater opportunity to perpetrate FSF in China compared to the US. With respect to firm-level governance, monitoring measures such as BoD independence, auditor among Big-4 audit firms, and institutional ownership are better for US firms. However, higher CEO duality, lesser frequency of BoD meetings, and smaller BoDs provide opportunity for FSF among US firms.

The follow-up Welch tests/Welch ANOVA also provide similar results (Annexure 1 - Table 8).

To test the impact of the factors of TFT on the incidence of FSF, PSM based probit regression analysis is undertaken. To the existing list of identified variables in TFT framework, an additional independent variable, country of origin (COO) is introduced and return on assets (ROA), market-to-book value (MV/BV), and firm size (L_TA) are also controlled for. The results, presented in Table 5, indicate that the firm-based governance variables have a statistically significant impact on the incidence of FSF whereas country-level variables such as EDI, GINI, CUL, ROL, and COO are not statistically significant.

Leverage (LEV) has a positive co-efficient (0.48) with a p-value of 0.00, implying that leverage has a positive impact on the incidence of FSF, and is the only statistically significant pressure variable in TFT model.

With respect to rationalisation of FSF, none of the measures (EDI, GINI, CUL) are statistically significant.

On the opportunity front, the country-level measure, ROL, is insignificant whereas firm-level governance variables INDPRT(-) and ABig4(-) have statistically significant coefficients of -0.62 and -0.24, respectively. Thus, INDPRT and ABig4 have a negative influence on the incidence of FSF. CDual(+) and NoBM(+) have statistically significant coefficients of +0.23 and +0.02, respectively. Thus, CDual and NoBM have a positive influence on the incidence of FSF.

The percentage of independent directors (INDPRT) is not only lower for fraud firms in comparison to the control firms (for both the US and China) but is also significant, with a negative coefficient, implying that the presence of independent directors on the BoD has a negative influence on the incidence of FSF. This research finding is in line with agency theory (Fama & Jensen, 1983), according to which having a larger percentage of independent directors can increase the effectiveness of the BoD. ABig4 has a statistically significant and negative co-efficient, implying better quality external monitoring with Big-4 auditors. This result is supported by Lennox and Pittman (2010).

CDual has a positive and statistically significant coefficient, which is expected as the dual role of CEO (acting as both the chairman of the BoD and the CEO) can increase the likelihood of fraud (Conyon & He, 2016; Deutsch et al., 2011).

NoBM also has a statistically significant positive coefficient across all models, which implies that a higher number of BoD meetings can lead to FSF. Chen et al. (2006) also find a significant positive relationship between fraud and BoD meetings.

The above results indicate that firm-level governance plays a more vital role in affecting the propensity of FSF as opposed to country-level governance.

6.4.4 Additional tests

VIF analysis

The VIF analysis with all variables gives values in excess of the benchmark '10' in the case of EDI, ROL, and COO (Table 7). EDI and ROL are excluded from the VIF analysis, and the resultant mean VIF is 2.63, implying that multi-collinearity is absent with the exclusion of EDI and ROL. Hence, regression analysis under four scenarios (Model1a, Model 1b, Model 1c and Model 1) is undertaken.

Table 7: VIF Analysis

Variable	Model 1a	Model 1b	Model 1c	Model 1
EFN	1.24	1.24	1.24	1.24
LEV	1.15	1.16	1.15	1.16
I_TCAD	4.53	5.06	4.62	5.09
ADSPRT	1.20	1.22	1.21	1.22

Variable	Model 1a	Model 1b	Model 1c	Model 1
EDI		42.79		67.11
GINI	1.30	1.55	1.42	1.55
CUL	1.70	2.05	1.70	2.23
ROL			157.43	246.93
INDPRT	5.47	5.48	5.48	5.48
CDual	1.58	1.59	1.59	1.59
BoS	1.27	1.27	1.27	1.27
NoBM	1.09	1.10	1.11	1.11
ABig4	3.14	3.17	3.15	3.17
IOPRT	4.35	4.37	4.35	4.37
ROA	1.33	1.33	1.33	1.33
MVBV	1.02	1.02	1.02	1.02
I_TA	2.03	2.04	2.04	2.04
COO	9.59	41.70	160.45	165.14
Mean VIF	2.63	6.95	20.62	28.50

Heteroscedasticity analysis

To address heteroscedasticity issues in ANOVA analysis, Welch ANOVA/Welch T-test (Shieh & Jan, 2014) is executed; the results (Table 9) yield results similar to that of ANOVA except for GINI, which becomes significant in the case of the Welch ANOVA.

The Breusch-Pagan test and White's General Test for heteroscedasticity are conducted for the regression models (Table 9). The two tests give contrary results; hence, a conservative approach is taken by assuming the presence of heteroscedasticity and this issue is addressed by calculating robust standard errors in the regression models.

Table 9: Heteroscedasticity

	Breusch-Pagan / Cook-Weisberg test for Heteroscedasticity				Interpretation
	Model 1a	Model 1b	Model 1c	Model 1	
chi2(1) =	0.00	0.00	0.00	0.00	No heteroscedasticity
Prob > chi2 =	0.99	0.99	0.98	0.98	

	White's General Test for Heteroscedasticity				Interpretation
	Model 1a	Model 1b	Model 1c	Model 1	
chi2(148) =	686.96				Heteroscedasticity present
(Prob > chi2)	(0.00)				
chi2(166) =		703.93			Heteroscedasticity present
(Prob > chi2)		(0.00)			
chi2(166) =			699.87		Heteroscedasticity present
(Prob > chi2)			(0.00)		
chi2(185) =				709.66	Heteroscedasticity present
(Prob > chi2)				(0.00)	

p-values in parentheses

6.4.5 Robustness checks

Additional variables

To test the robustness of the results of the PSM, additional variables in the regression model pertaining to the diversity of the BoD – FDPRT and AvAge are introduced, wherein FDPRT represents the percentage of female directors on BoD, whereas AvAge represents the average age of all directors on the BoD. The regression models are as follows:

$$\text{Fraud}_{i,t} = \alpha_{i,t} + \theta_1 \text{EFN}_{i,t-1} + \theta_2 \text{LEV}_{i,t-1} + \theta_3 \text{I_TCAD}_{i,t-1} + \theta_4 \text{ADSPRT}_{i,t-1} + \theta_5 \text{EDI}_{i,t-1} + \theta_6 \text{GINI}_{i,t-1} + \theta_7 \text{CUL}_{i,t-1} + \theta_8 \text{ROL}_{i,t-1} + \theta_9 \text{INDPRT}_{i,t-1} + \theta_{10} \text{CDual}_{i,t-1} + \theta_{11} \text{BoS}_{i,t-1} + \theta_{12} \text{NoBM}_{i,t-1} + \theta_{13} \text{ABig4}_{i,t-1} + \theta_{14} \text{IOPRT}_{i,t-1} + \theta_{15} \text{COO}_{i,t-1} + \beta_1 \text{Controls (firm size and performance)}_{i,t-1} + \theta_{16} \text{FDPRT} + \theta_{17} \text{AvAge} + \varepsilon_{i,t}$$

(Model 2)

In line with the results of Model 1, leverage(+), CEO duality(+), frequency/number of board meetings(+), and type/size of auditor(-) are still significant. However, although percentage of independent directors has a negative coefficient, it becomes insignificant (Table 10a and Table 10b).

Table 10a: PSM with additional variables

	Model 1a	Model 1b	Model 1c	Model 1
EFN	-0.22 (0.22)	-0.22 (0.21)	-0.22 (0.22)	-0.22 (0.21)
LEV	0.45** (0.00)	0.46** (0.00)	0.45** (0.00)	0.46** (0.00)
I_TCAD	-0.01 (0.74)	-0.02 (0.58)	-0.01 (0.73)	-0.02 (0.57)
ADSPRT	0.12 (0.42)	0.11 (0.48)	0.12 (0.43)	0.11 (0.48)

	Model 1a	Model 1b	Model 1c	Model 1
EDI		1.00 (0.45)		1.31 (0.43)
GINI	0.00 (0.91)	0.01 (0.69)	0.00 (0.87)	0.01 (0.70)
CUL	0.00 (0.66)	0.00 (0.92)	0.00 (0.66)	0.00 (1.00)
ROL			0.07 (0.84)	-0.14 (0.76)
INDPRT	-0.49 (0.11)	-0.50 (0.11)	-0.49 (0.11)	-0.50 (0.11)
CDual	0.23* (0.02)	0.23* (0.02)	0.23* (0.02)	0.23* (0.02)
BoS	-0.01 (0.44)	-0.01 (0.47)	-0.01 (0.45)	-0.01 (0.47)
NoBM	0.02** (0.00)	0.02** (0.00)	0.02** (0.00)	0.02** (0.00)
ABig4	-0.26* (0.01)	-0.26* (0.02)	-0.26* (0.02)	-0.267* (0.02)
IOPRT	0.30 (0.08)	0.31 (0.07)	0.30 (0.08)	0.31 (0.07)
ROA	-0.59* (0.01)	-0.60* (0.01)	-0.59* (0.01)	-0.60* (0.01)

	Model 1a	Model 1b	Model 1c	Model 1
MVBV	0.00 (0.09)	0.00 (0.10)	0.00 (0.09)	0.00 (0.09)
I_TA	0.05* (0.04)	0.05* (0.05)	0.05* (0.05)	0.05* (0.05)
COO	0.36 (0.06)	0.11 (0.77)	0.21 (0.77)	0.31 (0.68)
FDPRT	-0.14 (0.56)	-0.14 (0.55)	-0.14 (0.56)	-0.13 (0.57)
AvAge	-0.02*** (0.00)	-0.03*** (0.00)	-0.02*** (0.00)	-0.03*** (0.00)
_cons	0.91 (0.32)	0.21 (0.87)	0.91 (0.32)	-0.02 (0.99)
N	2,454	2,454	2,454	2,454

*p-values in parentheses; * p<0.05, ** p<0.01, *** p<0.001*

Table 10b: % Bias and associated p-values related to PSM with additional variables

	Model 1a	Model 1b	Model 1c	Model 1
EFN	-4.00 (0.30)	-4.00 (0.30)	-4.00 (0.30)	-4.10 (0.29)
LEV	0.90 (0.83)	0.70 (0.86)	0.90 (0.83)	0.70 (0.87)

	Model 1a	Model 1b	Model 1c	Model 1
I_TCAD	2.60 (0.53)	2.30 (0.56)	2.50 (0.54)	2.30 (0.57)
ADSPRT	0.20 (0.95)	0.50 (0.90)	0.30 (0.94)	0.60 (0.89)
EDI		2.70 (0.51)		2.70 (0.51)
GINI	-1.70 (0.67)	-1.80 (0.65)	-1.70 (0.67)	-1.80 (0.65)
CUL	2.00 (0.62)	1.90 (0.64)	2.00 (0.62)	1.90 (0.64)
ROL			2.40 (0.55)	2.40 (0.55)
INDPRT	1.40 (0.73)	1.40 (0.72)	1.40 (0.73)	1.40 (0.72)
CDual	1.90 (0.64)	1.80 (0.67)	1.90 (0.65)	1.90 (0.65)
BoS	-0.60 (0.87)	-0.90 (0.83)	-0.70 (0.87)	-0.90 (0.82)
NoBM	0.10 (0.97)	0.10 (0.99)	0.20 (0.97)	0.00 (1.00)
ABig4	0.80 (0.83)	0.80 (0.84)	0.80 (0.84)	0.80 (0.84)

	Model 1a	Model 1b	Model 1c	Model 1
IOPRT	1.50 (0.70)	1.40 (0.73)	1.50 (0.71)	1.40 (0.73)
ROA	-4.60 (0.27)	-4.60 (0.26)	-4.50 (0.27)	-4.70 (0.25)
MVBV	3.60 (0.20)	4.10 (0.16)	3.60 (0.20)	4.10 (0.16)
I_TA	-0.80 (0.85)	-1.30 (0.76)	-0.80 (0.84)	-1.30 (0.76)
COO	2.30 (0.57)	2.20 (0.58)	2.30 (0.58)	2.30 (0.58)
FDPRT	-1.30 (0.75)	-1.50 (0.71)	-1.30 (0.75)	-1.40 (0.72)
AvAge	2.70 (0.50)	2.50 (0.53)	2.60 (0.51)	2.60 (0.52)

*p-values in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

Winsorization

All variables are winsorized at 1% and 99% (Table 11a and Table 11b) to deal with outliers (Chhaochharia et al., 2012). In line with the results for Model 1, leverage(+), percentage of independent directors(-), CEO duality(+), frequency/number of board meetings(+), and type/size of auditor(-) continue to be significant.

Table 11a: PSM with winsor

	Model 1a	Model 1b	Model 1c	Model 1
EFN_win	-0.90 (0.37)	-0.90 (0.37)	-0.90 (0.37)	-0.89 (0.37)
LEV_win	0.62*** (0.00)	0.62*** (0.00)	0.62*** (0.00)	0.62*** (0.00)
I_TCAD_win	-0.01 (0.80)	-0.01 (0.79)	-0.01 (0.83)	-0.01 (0.76)
ADSPRT_win	0.22 (0.15)	0.22 (0.15)	0.22 (0.14)	0.22 (0.16)
EDI_win		0.14 (0.91)		0.57 (0.73)
GINI_win	0.01 (0.52)	0.01 (0.53)	0.01 (0.59)	0.01 (0.54)
CUL_win	-0.00 (0.82)	-0.00 (0.80)	-0.00 (0.83)	-0.00 (0.72)
ROL_win			-0.10 (0.78)	-0.19 (0.66)
INDPRT_win	-0.65* (0.04)	-0.65* (0.04)	-0.659* (0.04)	-0.65* (0.04)
CDual_win	0.25* (0.01)	0.25* (0.01)	0.25* (0.01)	0.25* (0.01)
BoS_win	-0.01	-0.01	-0.01	-0.01

	Model 1a	Model 1b	Model 1c	Model 1
	(0.29)	(0.29)	(0.28)	(0.29)
NoBM_win	0.02** (0.00)	0.02** (0.00)	0.02** (0.00)	0.02** (0.00)
ABig4_win	-0.26* (0.02)	-0.26* (0.02)	-0.26* (0.02)	-0.26* (0.02)
IOPRT_win	0.26 (0.14)	0.26 (0.14)	0.25 (0.14)	0.26 (0.13)
ROA_win	-0.53 (0.57)	-0.53 (0.57)	-0.53 (0.57)	-0.53 (0.57)
MVBV_win	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)
I_TA_win	0.05 (0.09)	0.05 (0.10)	0.05 (0.09)	0.05 (0.09)
COO_win	0.20 (0.28)	0.16 (0.67)	0.40 (0.59)	0.44 (0.56)
_cons	-0.70 (0.41)	-0.81 (0.53)	-0.71 (0.41)	-1.13 (0.45)
N	2,454	2,454	2,454	2,454

*p-values in parentheses; * p<0.05, ** p<0.01, *** p<0.001*

Table 11b: PSM with winsor - % bias and corresponding p-values

	Model 1a	Model 1b	Model 1c	Model 1
EFN_win	-2.80 (0.50)	-2.70 (0.51)	-2.80 (0.50)	-2.70 (0.52)
LEV_win	-0.90 (0.83)	-0.90 (0.83)	-0.90 (0.83)	-0.90 (0.83)
I_TCAD_win	1.20 (0.77)	1.20 (0.78)	1.20 (0.76)	1.20 (0.77)
ADSPRT_win	-0.40 (0.92)	-0.40 (0.92)	-0.40 (0.93)	-0.40 (0.92)
EDI_win		0.90 (0.82)		1.00 (0.81)
GINI_win	-1.50 (0.70)	-1.50 (0.70)	-1.60 (0.69)	-1.60 (0.70)
CUL_win	1.30 (0.75)	1.30 (0.75)	1.30 (0.75)	1.20 (0.76)
ROL_win			0.70 (0.87)	0.70 (0.87)
INDPRT_win	-0.10 (0.99)	-0.10 (0.99)	- (0.99)	- (0.99)
CDual_win	0.50 (0.90)	0.50 (0.90)	0.50 (0.91)	0.50 (0.90)
BoS_win	-1.00	-1.00	-0.90	-1.00

	Model 1a	Model 1b	Model 1c	Model 1
	(0.81)	(0.81)	(0.81)	(0.80)
NoBM_win	0.10 (0.98)	0.10 (0.98)	0.10 (0.98)	0.20 (0.97)
ABig4_win	0.70 (0.86)	0.70 (0.86)	0.70 (0.86)	0.70 (0.86)
IOPRT_win	0.40 (0.91)	0.40 (0.91)	0.50 (0.91)	0.40 (0.92)
ROA_win	-3.20 (0.47)	-3.10 (0.48)	-3.20 (0.46)	-3.10 (0.48)
MVBV_win	4.50 (0.30)	4.50 (0.30)	4.40 (0.31)	4.40 (0.31)
I_TA_win	0.30 (0.95)	0.30 (0.95)	0.30 (0.95)	0.40 (0.93)
COO_win	0.60 (0.89)	0.50 (0.89)	0.60 (0.89)	0.60 (0.89)

*p-values in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

Sector exclusion

Since the financial services sector is subject to different regulations, additional analysis is undertaken by excluding firms in this sector (Firth et al., 2011). Leverage(+), percentage of independent directors(-), CEO duality(+), frequency of board meetings(+), type/size of auditor(-) continue to be significant (Table 12).

Table 12: PSM excluding financial services

	Model 1a	Model 1b	Model 1c	Model 1
EFN	-0.19 (0.26)	-0.19 (0.26)	-0.19 (0.26)	-0.19 (0.26)
LEV	0.47** (0.00)	0.47** (0.00)	0.47** (0.00)	0.47** (0.00)
I_TCAD	-0.02 (0.53)	-0.02 (0.51)	-0.02 (0.55)	-0.02 (0.50)
ADSPRT	0.18 (0.24)	0.17 (0.25)	0.18 (0.23)	0.17 (0.25)
EDI		0.26 (0.85)		0.59 (0.72)
GINI	0.01 (0.63)	0.01 (0.61)	0.01 (0.68)	0.01 (0.62)
CUL	0.00 (0.95)	-0.00 (0.98)	0.00 (0.95)	-0.00 (0.91)
ROL			-0.05 (0.89)	-0.15 (0.74)
INDPRT	-0.67* (0.03)	-0.68* (0.03)	-0.67* (0.03)	-0.67* (0.03)
CDual	0.23* (0.02)	0.23* (0.02)	0.23* (0.02)	0.23* (0.02)
BoS	-0.00	-0.00	-0.00	-0.00

	Model 1a	Model 1b	Model 1c	Model 1
	(0.78)	(0.79)	(0.77)	(0.79)
NoBM	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)
ABig4	-0.24* (0.03)	-0.24* (0.03)	-0.24* (0.03)	-0.24* (0.03)
IOPRT	0.28 (0.10)	0.28 (0.10)	0.28 (0.10)	0.29 (0.10)
ROA	-0.62** (0.01)	-0.62** (0.01)	-0.62** (0.01)	-0.62** (0.01)
MVBV	0.00 (0.09)	0.00 (0.09)	0.00 (0.09)	0.00 (0.09)
I_TA	0.04 (0.19)	0.04 (0.19)	0.04 (0.19)	0.04 (0.19)
COO	0.23 (0.20)	0.17 (0.66)	0.34 (0.65)	0.38 (0.61)
_cons	-0.39 (0.65)	-0.58 (0.65)	-0.39 (0.65)	-0.83 (0.58)
N	2,414	2,414	2,414	2,414

*p-values in parentheses; * p<0.05, ** p<0.01, *** p<0.001*

6.5 Discussion and conclusion

The truthfulness of financial statements is quintessential to the existence of businesses and the confidence of investors and other stakeholders at a micro level. At a macro level, a low quality of financial statements in an economy may translate into reduced foreign direct investment, unavailability of the much-required capital for growth and expansion, and consequent economic slowdown. The economies and financial markets of the world today are interlinked; consequently, economic growth or slowdown of the largest economies in the world can have a cascading effect on other economies. Thus, ensuring high quality of financial statements is one of the pre-requisites to good economic health.

This study explores the causes of the likelihood of FSF in two of the largest economies in the world – the US and China – in this comparative study using TFT framework. Fraud firms in the US and China are compared on the identified parameters of TFT. The results indicate that US and China differ, significantly, on all measures of TFT except for external financing need and income inequality. Further, results of PSM based probit regression indicate that firm-level variables and governance mechanisms such as leverage, percentage of independent directors, CEO duality, frequency of Board meetings, and having an auditor among Big-4 audit firms have a significant impact on the incidence of FSF, whereas country-level variables such as country of origin, access to education, social inequality, and rule of law do not affect the incidence of FSF.

These results have implications for both theory and practice. From a theoretical perspective, this study adds to the existing literature on TFT, accounting frauds, and corporate governance by providing additional evidence on these subjects. It provides additional evidence on agency theory with respect to effective monitoring by independent directors (Rashid, 2015) and negative impact of CEO duality (Davidson III et al., 1998). From a practical standpoint, the results align with the views of Dellaportas (2013) by reconfirming the significance of curbing the opportunities for FSF as the most effective remedy. Also, it is found that due attention needs to be paid to internal governance mechanisms as they are more significant in limiting the opportunities of FSF. Further, irrespective of the cultural background of a country, the key to controlling FSF lies in internal control and governance. These results also have repercussions for businesses seeking to expand to markets like US and China by highlighting significance of good governance practices as exhibited in independent boards, good quality auditors, lower leverage, and avoidance of CEO duality in establishing sustainable businesses.

This study is subject to some limitations. Firstly, the study relies on only reported cases of FSF in listed corporations. However, there may a large sample of private corporations subject to such fraud, or listed corporations where such fraud has not yet been brought to light. Secondly, the TFT model may be expanded to include additional variables to better explain the incidence of FSF. Thus, future research may focus on developing a more detailed TFT model aimed at explaining the incidence of FSF.

Annexure 1 - Table 8: Results of Welch t-test between the US and Chinese fraud firms in the examination of factors inducing FSF in context of the Fraud Triangle

Fraud Triangle Factor	Variable	US (Mean)	China (Mean)	Expected Direction	p-value (Ha: diff != 0)	t-statistics
Pressure	EFN	0.02	0.03	No	0.24	1.17
	LEV	0.20	0.27	No	0.00	5.14
	I_TCAD	15.28	12.08	No	0.00	-39.79
	ADSPRT	0.14	0.11	Yes	0.00	-3.04
Rationalisation	EDI	0.89	0.61	Yes	0.00	-230.00
	GINI	40.95	40.77	Yes	0.01	-2.60
	CUL	47.82	22.72	No	0.00	-13.69
Opportunity	ROL	1.61	-0.45	Yes	0.00	-610.00

Fraud Triangle Factor	Variable	US (Mean)	China (Mean)	Expected Direction	p-value (Ha: diff != 0)	t-statistics
	INDPRT	0.76	0.37	Yes	0.00	-48.71
	CDual	0.46	0.01	No	0.00	-17.08
	BoS	8.98	10.04	Yes	0.00	6.67
	NoBM	8.64	9.54	No	0.00	3.53
	ABig4	0.77	0.03	Yes	0.00	-32.27
	IOPRT	0.69	0.06	Yes	0.00	-36.03
N		357.00	903.00			

Appendix: Variable definition and measurement*

Variable Name and Definition	Label	Details	References
Dependent Variable			
Fraud	Fraud Firm (FF)/ Control Firm (CF)	"1" if Fraud Firm and "0" if Control Firm; Source: SCAC, Capital IQ; CSMAR	Erickson et al. (2006); Hass et al. (2016)
Independent Variables/ Pressure Variables			
External Financing Need	EFN	Need for external financing measured by growth rate in excess of growth which can be financed by internal resources. Calculated as: $ROA/(1-ROA)$	Shi et al. (2017); Demirgüç-Kunt and Maksimovic (1998)
Leverage	LEV	Total Debt (LEV)/ Total Assets (TAssets); Source: Capital IQ; DataStream	Ntim et al. (2015); Shi et al. (2017)

Variable Name and Definition	Label	Details	References
Log of Directors' total compensation	I_TCAD	Log of compensation of all directors; Source: SEC Filings; CSMAR	Conyon and He (2016); Hass et al. (2016)
Shareholding of all directors (%)	ADSPRT	Percentage Shareholding held by all directors; Source: SEC Filings, beneficial ownership statistics; CSMAR	Bhagat and Bolton (2008); Huang and Boateng (2017); Lai, and Tam (2017)
Independent Variables/ Rationalisation Variables			
Education	EDI	Average of expected years of schooling of children and mean years of schooling of adults. Expressed as an index. Source: United Nations Development Programme. http://hdr.undp.org/en/indicators/103706# . Accessed on: 21 Oct 2021	Chen (2014)
Income Disparity	GINI	Measure of income disparity. A value of 0 implies perfect equality and a value of 100 implies perfect inequality.	Chen (2014)

Variable Name and Definition	Label	Details	References
		Source: GINI Index (World Bank), https://data.worldbank.org/indicator/SI.POV.GINI . Accessed on: 21 Oct 2021	
Culture	CUL	Corruption Index score. Higher score implies lower corruption. Source: Transparency International. Link: https://www.transparency.org/en/cpi/2020/index/nzl Accessed: 24 Oct 2021	Liu (2016)
Independent Variables/ Opportunity Variables			
Country Governance	– Level ROL	Rule of law - Quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Source: World Bank; Link: http://info.worldbank.org/governance/wgi/ Accessed on: 25 October 2021	Leuz et al. (2003); Chen (2016)

Variable Name and Definition	Label	Details	References
% of Independent Directors on BoD	INDPRT	Percentage of Independent Directors; Source: SEC Filings; CSMAR	Firth et al. (2007); Uzun et al. (2004)
CEO and Chair of BoD same person	CDual	"1" if CEO duality exists and "0" otherwise; Source: SEC Filings; CSMAR	Farber (2005); Erickson et al. (2006)
Total Number of Directors	BoS	Total Number of Directors; Source: SEC Filings; CSMAR	Ntim et al. (2015); Deutsch et al. (2011)
Number of Board Meetings	NoBM	Number of Board Meetings; Source: DataStream; CSMAR	Erickson et al. (2006)
Auditors from Four Big Accounting Firms or Not	ABig4	Auditor among the Big 4 auditor Firms or not; "1" if Auditor among the Big4 firms and "0" if the Auditor not among the Big4 firms; Source: Capital IQ; CSMAR	Farber (2005); Pyzoha and Jenkins (2019)
Institutional Ownership	IOPRT	Percentage of shareholding with Institutional Owners;	Ntim et al. (2015); Wright et al. (2002); Lel (2018); Kim et al. (2016)

Variable Name and Definition	Label	Details	References
		Source: Capital IQ; CSMAR	
Country of origin	COO	Binary variable; "0" in case of China; "1" in case of U.S.	
Control Variables			
Match Year ROA (%)	ROA	Return on Assets (ROA); Source: Calculated using Capital IQ; DataStream	Erickson et al. (2006); Hass et al. (2016)
Match Year MV/BV	MV/BV	Market Value/Book Value; Source: Calculated using Capital IQ; DataStream	Agrawal and Chadha (2005); Zhang et al. (2008)
Firm Size	I_TA	Log of Total Assets	Gao et al. (2017); Markelevich and Rosner (2013)
Additional Variables			
%Female Directors	FDPRT	Percentage of Female Directors; Source: SEC Filings; CSMAR	Liu et al. (2016); Wahid (2019)

Variable Name and Definition	Label	Details	References
Average age of all directors	AvAge	Average age of all directors; Source: SEC Filings; CSMAR	Daboub et al. (1995); Xu et al. (2018)

** All variables are measured as of the match year*

7. Conclusion

7.1 Introduction

In this chapter a summary of the research findings has been presented and implications of the results have been discussed. The chapter has six sections. The first section provides the background and the objectives of this study. In the second section a summary of the research methodology has been presented. Third section provides a summary of the main findings. Section four discusses the contributions and the implications of this study. The limitations of this study are laid out in section five whereas in the last section direction for future results has been discussed.

7.2 Background and objectives of the study

Over the past two decades there has been a heightened focus on the quality of financial statements and corporate governance which has further translated into passing of stringent laws and tighter listing rules apart from tougher penalties for the offenders (Roz, 2004). The quality of financial statements is vital as financial statements form the basis of investment by present and potential investors/shareholders, appraisal of corporates by lenders (Donelson, et al., 2017), assessment of a firm's financial performance (Iatridis, 2010), avoiding stock market bubbles/ speculation (Penman, 2003). Further, according to Fields et al. (2001) market imperfections can be efficiently addressed by accounting disclosures as accounting influences the quality of financial disclosures.

Thus, it can be concluded that financial statement fraud has ramifications for all stakeholders including employees, lenders, market authorities, regulators, and shareholders,

Corporates are managed by the management and owned by the shareholders. To oversee and monitor the management, the shareholders appoint directors as their agents. Thus, agency conflicts between the directors and the shareholders are imminent. Compensation has long been viewed as a panacea for mitigating agency issues (Jensen & Meckling, 1976; Pereira, 2015). However, compensation can best be described as a double edged sword which can mitigate as well as aggravate agency issues (Goldman & Slezak, 2006; Rose et al., 2013; Conyon & He, 2016; Zhou et al., 2018). Given the inconclusive nature of evidence on the efficacy of compensation in controlling financial statement fraud, it is vital to scrutinize this association further. This examination is vital, as FSF has proved to be a bane for economies the world over, resulting in huge losses for investors and a dip in market confidence. Its impact is more dramatic for developing economies as it hampers the inflow of foreign direct investment. Further, this study is a first in that it provides empirical evidence of the agency issues between directors and shareholders, which is an under researched area of corporate governance. Also, existing evidence on the efficacy of directors' compensation in controlling the incidence of fraud is limited. Further, such

examination has been mostly focused on the US market. Therefore, drawing upon agency theory, fraud triangle theory, and institutional theory, this study examines the impact of directors' compensation and shareholding on the incidence of FSF in two of the world's largest economies – China and the US. This research focuses on the US and China as these two countries, despite being two of the world's largest economies, present a stark contrast in their cultural orientation and corporate governance philosophies.

The purpose of this thesis is to: (a) examine the corporate governance mechanisms and directors' compensation practices under the two corporate governance models (2CGM) namely the US and China; (b) examine the causal relationship between directors' compensation and FSF under the 2CGM; and (c) offer recommendations for effective designing and packaging of directors' compensation.

7.3 Summary of research methodology

This study employs quantitative research methods and clubs it with the matched pairs research design. Under this design, two groups were created for each of the two countries (the US and China). The first group comprised the fraud firms and the second group no-fraud/control firms. The control firms were identified using a three-pronged matching criteria. The control firm had to be in the same industry as the fraud firm. The control firm should have not been implicated for financial statement fraud during the sample period and lastly, the control firm had to be the nearest match of the fraud firm in terms of the market capitalisation/ net sales/ total assets.

Fraud firms were identified using data from China Stock Market and Accounting Research database (CSMAR) in case of China and Securities Class Action Clearinghouse (SCAC) in case of the US. Control/no-fraud firms were identified using data from DataStream (China) and Capital IQ (US). The final sample consisted of 903 fraud firms for China and 387 fraud firms for the US. The data on directors' compensation and other key control variables was largely hand-collected in case of the US using SEC Edgar filings where as in case of China, this data was taken from CSMAR.

Various analytical techniques were employed to analyse the data. Descriptive statistics were used to describe the general characteristics of the fraud and control firms. Correlation analysis and VIF analysis were conducted. Probit regression method was used and the robustness of the results was examined using alternate regression methods, sub-sample tests, winsorization, and introduction of additional variables. Propensity score matching was used to deal with issues of endogeneity. Data analysis was conducted using statistical software package - STATA.

7.4 Summary of main findings

In this section the summary of the main research findings of this thesis in view of the research objectives is laid out.

7.4.1 Literature review

The review of the literature on corporate governance models of the US and China reveals that the US follows 'shareholder theory' where the main focus is on maximisation of shareholders' wealth. China, on the other hand, can be argued to follow 'stakeholders' approach to corporate governance as it has a dual board system with a board of directors and a supervisory board wherein the supervisory board has representation from the employees as well. However, 'shareholder primacy' is of importance in China too.

US is embedded in market capitalism whereas China is inherently socialist and is now transitioning into market capitalism. Further, in the US the corporate governance issues emerge on account of separation between ownership and control (Gilson & Roe, 1993) and such issues represent the conflicts of interest between dispersed shareholders and controlling managers (Enriques & Volpin, 2007). In contrast, in China the corporate governance issues stem from concentration of ownership and these issues are primarily principal to principal conflicts between majority and minority shareholders (Habib & Jiang, 2015).

Further, corporate governance in China is relatively a new phenomenon and is still evolving when compared to the US. In China, the regulatory body, CSRC, was established in 1992 and corporate governance reforms started in 2001, US, on the other hand, established the SEC way back in 1934. Similarly, US passed the Sarbanes Oxley Act in 2002 whereas China passed its version of the Sarbanes Oxley Act in 2008 (Lu & Cao, 2018).

With respect to the corporate governance codes and rules, the Chinese corporate governance code does not provide any explicit regulations rather it lays down guiding principles only (Jiang & Kim, 2015). On the contrary, in the US, NYSE stipulates mandatory corporate governance rules which are to be complied with (Calder, 2008).

The two countries also vary considerably in their legal and political orientation. US pursues common law whereas China is civil law based. According to La Porta et al. (2008) civil law is marked by greater corruption which emanates from substantial government regulation and ownership in countries following civil law. On the other hand, common law is marked by 'better contract enforcement', greater 'judicial independence' and 'security of property rights' (La Porta et al. 2008, p. 286). With respect to the political system, China follows the communist system (Mihalyi & Szelenyi, 2021) whereas the US is a democratic state.

Cultural orientations of the US and China vary dramatically as well. As compared to the US, China scores high in power distance (implying acceptance of inequality among people), collectivism (i.e. 'we' takes precedence over 'I')

and long-term orientation (focus on thrift, saving, and investing). Further, China has a low score on uncertainty avoidance implying that ambiguity is more acceptable in China as compared to the US. From a theoretical lens, agency theory and institutional theory are the two key corporate governance theories which have guided this work. Agency theory is relevant because the directors are in an agency relationship with the shareholders. Agency theory has been widely applied in academic research. However, its prime concern is alignment of conflicting interests of agents and principals. Institutional theory is important as we compare US and China which are embedded in different institutional frameworks. According to the institutional theory, organisational structures are influenced by institutional rules and the attitudes prevailing in the society (O'Connell, et al., 2005; Meyer & Rowan, 1977). In this context, China is marked by a weak legal environment and weak formal governance structures (Jiang & Kim, 2015; Estrin & Prevezer, 2011). From the fraud theories, the framework of the fraud triangle has been applied in this research. Opportunity for financial statement fraud is argued to be presented by weak firm level and country level governance. Motivation for FSF can come from compensation, funding pressure, or level of debt. Rationalisation for financial statement fraud can take the form of cultural differences, income disparity, and education level.

On the compensation front too, the two countries have had historical differences in approach. In the US inequality in pay is widely accepted (Conyon & Murphy, 2000) whereas China traditionally followed an egalitarian approach of equitable pay (Chow, 1992; Adithipyangkul et al., 2011). Further, stock-based compensation is relatively a new phenomenon in China and was allowed only from 2005 whereas in the US, stock based compensation is often a part of the pay structure (Adithipyangkul et al., 2011; Firth et al., 2014).

7.4.2 Paper 1

The first research paper of this thesis investigates the linkages between directors' compensation and shareholding and FSF in China. Using a sample of 903 matched pairs, the results indicate that directors' shareholding has a significant positive impact on the likelihood of FSF and the shareholding of non-independent directors drives this positive association. Further, firm characteristics (such as leverage, ownership structure, and performance) and board characteristics (such as CEO duality and frequency of board meetings) are also significant determinants of the likelihood of FSF.

7.4.3 Paper2

The second research paper focuses on the incidence of FSF in the US and its linkages with directors' compensation and shareholding. Using a sample of 387 matched pairs, a significant positive association is reported between directors' stock-based compensation and FSF. Further, the key driver of this association is the stock-based compensation of the executive directors. However, it is

interesting to note that CEOs' compensation and shareholding is insignificant. Further, board characteristics (such as board size, frequency of board meetings, type of auditor) and firm characteristics (such as firm size) are also significant factors influencing the incidence of FSF in the US.

7.4.4 Paper 3

In the third research paper of this thesis, a comparative analysis of China and the US on the operationalised measures of the three prongs of the fraud triangle (TFT) framework, namely pressure, opportunity and rationalisation, is undertaken. The results indicate that the two countries vary significantly on all the measures of the TFT framework other than in the cases of external financial need and income disparity. Further, governance factors (such as percentage of independent directors, CEO duality, frequency of board meetings, type of auditor) and firm characteristics (such as leverage) are vital influencers impacting the incidence of FSF.

The results hold even after a series of robustness checks and other analysis.

7.5 The research questions

The table below provides the main findings with respect to the research questions.

S. No.	Research Question	Main Findings
1	Whether the quantum and structure of directors' compensation packages, under the two CG models, namely the US and Chinese models (2CGM) has a role to play in tempting the directors to either connive in or overlook FSF.	The structure of directors' compensation has definite impact on the incidence of financial statement fraud. Financial statement fraud is likely to increase with inclusion of stock and stock-option based compensation in directors' compensation/remuneration packages. Thus, it would be prudent to remunerate directors with stock-based compensation, cautiously.
2	Does the level of directors' stock ownership in the corporation influence FSF?	
3	Does the design of directors' compensation package such as the proportion of stock-based compensation affect FSF?	

S. No.	Research Question	Main Findings
4	Do BoD characteristics such as independence and diversity influence the incidence of FSF?	<p>BoD independence and diversity have not been found to have any significant influence on the incidence of financial statement fraud in case of China. However, in case of the US, directors' age has a significant negative association with the incidence of FSF.</p> <p>In the combined analysis of the US and China, the percentage of independent directors has been found to have a significant negative impact on the incidence of FSF.</p>
5	What role do CG and firm-specific factors play in influencing the incidence of FSF?	<p>Corporate governance and firm specific factors do have an influence on the incidence of financial statement fraud. However, the significant influence of these factors varies with the country under consideration. For instance: in case of China, firm performance (ROA), CEO duality, leverage, ownership structure, and frequency of board meetings have significant influence on the incidence of financial statement fraud. However, in case of the US, board size, frequency of board meetings, type of auditor, and firm size have significant influence on the incidence of financial statement fraud.</p> <p>In the combined analysis - leverage, percentage of independent directors, CEO duality, frequency of Board meetings, type of auditor and ROA have significant influence on the likelihood of FSF.</p>

S. No.	Research Question	Main Findings
6	Despite the overarching influence of culture & legal/institutional structures on the different CG systems, are there any best practices with respect to directors' compensation which can be adopted under the 2CGM to combat FSF? Also, is there an optimal structure of directors' compensation, or if not, what type of compensation is good enough?	Cultural, institutional, legal, and political structures vary significantly between the US and China. Even compensation practices between the two countries are different with US more amenable to stock and option based compensation as compared to China. However, the results of empirical analysis suggest that stock-based compensation is a significant provocateur of fraudulent behaviour among directors. Hence, stock-based compensation should be used cautiously.

7.6 Contribution and implications of the study

Prior research on directors' compensation (including Alkebsee et al., 2021; Archambeault et al., 2008; Bebchuk et al., 2010; Cullinan et al., 2008; Cullinan et al., 2010; Kim et al., 2013; Persons, 2012; and Ye, 2014) has either examined frauds other than FSF (bribery, embezzlement, option back-dating, and securities fraud) or have looked at earnings management, restatements, and opportunistic timing of option grants. Further, the evidence provided by these studies is divided on the impact of directors' compensation on fraud/earnings management/ restatements. For instance: Archambeault, et al. (2008), Bebchuk et al. (2010), Kim et al. (2013), Ye (2014) document a positive association whereas Alkebsee et al. (2021) document a negative association. On the other hand, Persons (2012) does not document any association between directors' compensation (cash and stock) and fraud.

This inconclusive evidence has created a gap in research and has necessitated that more empirical evidence be produced on this topic. The present thesis addresses this gap in research.

The most important contribution of this study is that it provides empirical evidence with respect to the best compensation practice in relation to the directors, which can be adopted under each of the 2CGM (with or without modifications) to combat/reduce the incidence of FSF. Further, this thesis is a comparative analysis of two very different countries with different corporate governance paradigms. This research provides empirical evidence on how fraud

firms in the US differ significantly from those in China on various parameters of good corporate governance. The results indicate that the fraud firms in China tend to be more leveraged, have lower incidence of CEO duality, have lower percentage of independent directors, have larger boards, greater frequency of board meetings, have lower institutional ownership, offer lower compensation & lower percentage of shareholding to the directors, and have smaller auditors as compared to the fraud firms in the US. Further, this research provides evidence to support the assertion that irrespective of the cultural, political, institutional, and governance make-up of a country, firm-level measures of governance measures vitally influence the incidence of financial statement fraud. The other contributions of this study are as follows:

7.6.1 Contribution to the literature

This thesis contributes to literature in the following ways. First, this research opens up the dialogue between the literature on agency theory, institutional theory, and on the theory of fraud while exploring the causal relationship between directors' compensation and financial statement fraud. It explores how these three theories supplement each other in case of financial statement fraud. This thesis documents that the agency relationship between the directors and the shareholders (wherein divergent interests are aligned using compensation) coupled with weak institutional framework and weak governance set the stage for financial statement fraud to occur. Second, the thesis also delves at length on the literature on different corporate governance systems and it also compares and contrasts two very different corporate governance paradigms/ philosophies. Third, this research complements prior literature in this domain (Kim et al., 2013; Cullinan et al., 2008) by using a larger sample, wider definition of financial statement fraud, and longer sample period. Further, it provides additional evidence on the subject as the results of the prior research remain inconclusive.

7.6.2 Contribution to theory

This thesis explores various theoretical approaches in the corporate governance and fraud literature and discusses how each of the theories in these fields informs research on financial statement fraud and directors compensation. The empirical chapters in this thesis specifically employ the agency theory, the theory of fraud triangle, and the institutional theory. The agency theory is relevant to this study as the directors are in an agency relationship with the shareholders. The theory of fraud triangle informs this research by providing insights into the motivation, opportunity, and rationalisation aspects of financial statement fraud. The institutional theory has relevance, as this thesis seeks to compare two countries namely the US and China which have very disparate institutional settings.

7.6.3 Contribution to practice

This thesis contributes to practice in the following ways. First, this research provides evidence on directors' compensation practice that could be adopted to avoid or reduce the incidence of financial statement fraud. According to the results of this study, stock-based compensation to the directors should be avoided in practice. Second, this research brings to light/ fore-front the importance internal governance mechanisms in controlling the incidence of FSF. The comparative analysis of the US and China suggests that governance mechanisms represented by avoidance of CEO duality, BoD independence, frequency of board meetings, and type of auditor are significant factors in controlling the incidence of FSF. Further, these factors hold fort irrespective of the cultural, institutional, legal, and political orientation of a country.

7.6.4 Contribution to policy

This study contributes to policy by providing additional evidence to regulators on the inefficacy of stock-based compensation to directors. The results of this research suggest that rather than aligning the divergent interests of directors (as agents) and shareholders (as principals), stock and option based compensation aggravates the agency problem. Thus, such compensation should be used with caution in case of the directors.

7.6.5 Contribution to methodology

This thesis also contributes to methodology by employing a wider source of data. Unlike prior research, which has predominantly used data from the SEC to identify fraud firms in the US, this study uses data from SCAC. Further, this study also uses a broader definition of FSF by including companies that have made misstatements in their offer documents (in case of the US).

7.6.6 Implications of the study

The results of this research project have implications for both theory and practice.

Theoretical implications

From a theoretical perspective, this study supplements research on corporate governance and on agency theory by examining the likely agency issues between directors (as agents) and shareholders (as principals) and the role of measures of good corporate governance in reducing the incidence of FSF. Thus,

it combines the agency perspective (represented by compensation and the agency relationship between directors and shareholders) with the corporate governance perspective (represented by governance variables), which are both significant in the context of accounting fraud. This research also adds to the existing literature on TFT and accounting fraud, by providing additional evidence on these two subjects. It provides additional evidence on agency theory with respect to effective monitoring by independent directors (Rashid, 2015) and negative impact of CEO duality (Davidson III et al., 1998).

Practical implications

From a practical perspective, this study provides additional evidence on the ongoing debate on the design and packaging of directors' compensation. The results from this research force one to look again at the efficacy of the share-based compensation and shareholding of directors. The results allude to the alternate view, which regards that share-based compensation can aggravate agency issues and hence such compensation should be used with caution or should be at best avoided.

In line with Dellaportas (2013), the results reconfirm the significance of curbing the opportunities for FSF, which is the most effective remedy to control the occurrence of FSF. Further, we find that due attention needs to be paid to internal governance mechanisms as they are more significant in limiting the opportunities for FSF. Our results also have repercussions for businesses seeking to expand into markets like the US and China by highlighting the significance of good governance practices (as exhibited in independent boards, good quality auditors, lower leverage, and avoidance of CEO duality) in establishing sustainable businesses.

Additionally, the results of this study can be extended to other developed and developing economies operating within the same corporate governance paradigms as that of China and the US. For instance, the results of the study on China could be relevant for other Asian countries with similar cultural, economic, and governance paradigms.

Thus, the results of this research are of relevance to academics, practitioners and policy makers.

7.7 Limitations and future research direction

7.7.1 Limitations of the study

This research is subject to several limitations which are listed below.

First, the focus of this research has been on examining the causal relationship between director's compensation and financial statement fraud. To achieve this objective and to answer the research questions, this study has relied on empirical analysis and analysis of existing literature in the fields for fraud, corporate governance, and compensation. Thus, the main criticism of this research is that it is an exploratory research based on empirical analysis and thus has paid little attention to development of theory. Second, this thesis focuses on the incidence of FSF in listed corporations. However, there may be a large pool of private corporations that may be ridden with financial statement fraud. It may be noted that unlisted companies could not be included in this study due to challenges in availability of data. Third, the focus of this research has been publicly reported or discovered cases of FSF and thus it ignores cases where FSF may have been committed but has not yet been discovered or brought to light or has not been discovered. Fourth, some fraud firms had to be excluded from the sample due to non-availability of suitable control firms. Fifth, this study relies on financial numbers as provided in the annual filings of corporations and in doing so it makes an implicit assumption that such reported numbers are true, correct, and not misleading. However, this assumption may be invalid in some cases. Sixth, this study uses two variables namely age and gender to measure BoD diversity. However, other variables such as nationality and level of education can also be included as additional measures of diversity. Seventh, this study uses the PSM to deal with endogeneity, however there is research to claim that PSM addresses endogeneity concerns arising out of model misspecification (Shipman, et al., 2017) and those arising from observed covariates. However, PSM may not be effective in addressing other forms of endogeneity such as endogeneity on account of unobserved factors. In this study directors' compensation is identified as an endogenous variable as it can also be a function of directors' ability which cannot be observed. Instrumental variable approach (Bascle, 2008) to deal with endogeneity of directors' compensation (endogenous variable) could not be used due to non-availability of appropriate instruments. For any instrument to be valid it has to satisfy two conditions. Firstly, it has to be relevant i.e. the partial correlation between the endogenous variable and the instrumental variable should be non-zero and the regression co-efficient of the endogenous variable should be non-zero. Secondly, the instrumental variable should meet the exclusion condition i.e. the instrumental variable should influence the dependent variable only through the former's effect on the endogenous variable (Roberts & Whited, 2013). Eighth, with respect to paper 1, China represents a unique institutional setting. Features such as 'guanxi' (informal relations) between the CEO and the directors (Zhang, et al., 2017) and politically connectedness of the directors (Kong, et al., 2019) may affect directors' fraudulent behaviour. Though in paper 1, directors' political connectedness has been controlled for, 'guanxi' is not part of this study. Further, appointment of friendly independent directors (Wintoki & and Xi, 2019) or co-opted directors (Zaman et al., 2021), may also adversely influence the monitoring effectiveness of the directors. However, these factors have not been covered in this research. Ninth, with respect to Paper 2, the initial sample of fraud firms for the US included 1,029 firms listed on NASDAQ

and NYSE. However, the data on directors' compensation and a number of other governance and demographic variables had to be hand collected from SEC filings as many of these firms were either delisted or were not covered by databases such as Boardex or Execucomp. For instance: with respect to the US, Boardex provides compensation data only for S&P500 and NASDAQ listed firms which are presently alive/listed. Similarly, Execucomp also has limited coverage of US corporations. Hence, the initial sample was randomised to include 500 fraud firms only. Out of these, compensation data was available for only 396 matched pairs. Thus, the sample size for the US paper was reduced considerably which might have affected the results. However, the sample was still larger than many of the existing studies on executive compensation and fraud. Tenth, in relation to Paper 3 (comparative study of the US and China), this paper uses the ANOVA and matched pairs research design for analysis. ANOVA is used to compare the fraud firms in the two countries while matched pairs design is used to examine the impact of compensation on the incidence of FSF in the two countries. Though the research design is robust, it may not be able to detect all the differences between the two countries on various aspects of corporate governance. For instance: the difference in approach with respect to corporate governance in the US and China (which is evident in US adopting a rule-like approach by stipulating mandatory corporate governance rules and on the other hand, China laying down just guiding principals with respect to corporate governance), cannot be detected under the present research design. This is so because all firms in China would take a constant value while all firms in the US would take another constant value thereby making the comparison unmeaningful.

7.7.2 Future research

Future research could be directed towards expanding the sample of countries used for comparison by either including countries with different governance structures such as Germany and Japan, or by including countries with a different approach to corporate governance such as to compare countries via a rule-based vs principal-based approach to corporate governance.

Extant research has focused on compensation (representing directors' self-interest) and fraud, an interesting extension to this line of research could be exploring whether incentive/ self-interest in form of director's reputation (Masulis & Mobbs, 2014) has any effect on containing/reducing the incidence of financial statement fraud.

8. References

- Abbott, L.J., Parker, S., and Peters, G.F. (2004) 'Audit committee characteristics and restatements', *Auditing: a journal of practice and theory*, 23(1), 69–87. doi: 10.2308/aud.2004.23.1.69.
- Aboody, D., and Kasznik, R. (2000) 'CEO stock option awards and the timing of corporate voluntary disclosures', *Journal of accounting and economics*, 29(1), 73–100.
- Abreu, R., David, F., and Crowther, D. (2005) 'Corporate social responsibility in Portugal: empirical evidence of corporate behaviour', *Corporate Governance (Bradford)*, 5(5), pp. 3–18. doi:10.1108/14720700510630013.
- Acharya, V.V., Myers, S.C., and Rajan, R.G. (2011) 'The internal governance of firms', *The journal of finance (New York)*, 66(3), pp. 689–720. doi:10.1111/j.1540-6261.2011.01649.x.
- Adams, R., Hermalin, B., and Weisbach, M. (2010) 'The role of boards of directors in corporate governance: a conceptual framework and survey', *Journal of economic literature*, 48(1), pp. 58-107.
- Adams, R.B., and Ferreira, D. (2009) 'Women in the boardroom and their impact on governance and performance', *Journal of financial economics*, 94(2), 291–309. doi: 10.1016/j.jfineco.2008.10.007.
- Adegbite, E. (2010) 'The determinants of good corporate governance: The case of Nigeria', *Doctoral thesis, Cass Business School, City, University of London*.
- Adegbite, E. (2012) 'Corporate governance regulation in Nigeria', *Corporate Governance: international journal of business in society*, 12 (2), pp. 257-276.
- Adegbite, E. (2015) 'Good corporate governance in Nigeria: Antecedents, propositions and peculiarities', *International business review*, 24(2), 319-330.
- Adegbite, E., Shrives, P., and Nichol, T. (2011) 'The role of government in corporate governance: perspectives from the UK', *Corporate ownership and control*, 9 (1). pp. 283-293.
- Adithipyangkul, P., Alon, I., and Zhang, T. (2011) 'Executive perks: compensation and corporate performance in china', *asia pacific journal of management*, 28(2), 401–425. doi: 10.1007/s10490-009-9162-3.
- Adithipyangkul, P., and Leung, T Y. (2018), 'Incentive pay for non-executive directors: the direct and interaction effects on firm performance', *Asia Pacific journal of management*, 35(4), pp. 943-964.
- Adithipyangkul, P., and Leung, T.Y., (2015) 'State ownership, legal institution, and independent director compensation: an exploratory study in China', *The Chinese economy*, 48(6), pp.430–448.

- Aggarwal, R., Erel, I., Stulz, R., and Williamson, R. (2010) 'Differences in governance practices between U.S. and foreign firms: measurement, causes, and consequences', *The review of financial studies*, 23(3), 3131–3169. doi: 10.1093/rfs/hhn107.ra.
- Agrawal, A., and Chadha, S. (2005) 'Corporate governance and accounting scandals', *The Journal of law and economics*, 48(2), 371-406.
- Aguilera, R., and Jackson, G. (2003) 'The cross-national diversity of corporate governance: dimensions and determinants', *Academy of management review*, 28(3), pp.447–465.
- Aguilera, R., Williams, C., Conley, J., and Rupp, D. (2006) 'Corporate governance and social responsibility: a comparative analysis of the UK and the US', *Corporate governance: an international review*, 14(3), pp. 147–158.
- Aguinis, H. (2014) 'Revisiting some "established facts" in the field of management', *BRQ business research quarterly*, 17(1), pp. 2–10. doi:10.1016/j.cede.2013.11.001.
- Aguinis, H., Gottfredson, R.K. and Joo, H. (2013) 'Best-Practice Recommendations for Defining, Identifying, and Handling Outliers', *Organizational research methods*, 16(2), pp. 270–301. doi:10.1177/1094428112470848.
- Aguir, I., Burns, N., Mansi, S.A., and Wald, J.K. (2014) 'Liability protection, director compensation, and incentives', *Journal of financial intermediation*, 23(4), pp. 570-589.
- Ahmad, S., and Omar, R. (2016) 'Basic corporate governance models: a systematic review', *International journal of law and management*, 58(1), pp. 73–107.
- Aidt, T., Dutta, J., and Sena, V. (2008) 'Governance regimes, corruption and growth: theory and evidence', *Journal of comparative economics*, 36(2), 195–220. doi: 10.1016/j.jce.2007.11.004.
- Albrecht, C., Albrecht, C.C., Dolan, S., and Malagueno, R. (2008) 'Financial statement fraud: learn from the mistakes of the U.S. or follow in the footsteps of its errors', *Internal auditing (Boston, Mass.)*, 23(2), 30-37.
- Albrecht, W.S., Albrecht, C.C. and Albrecht, C.O. (2004) 'Fraud and corporate executives: agency stewardship and broken trust', *Journal of forensic accounting*, 5, pp. 109-130.
- Alhadab, M., Clacher, I., and Keasey, K. (2015) 'Real and accrual earnings management and IPO failure risk', *Accounting and business research*, 45(1), 55–92. doi: 10.1080/00014788.2014.969187.

- Al-Jaifi, H. A. (2017), 'Ownership concentration, earnings management and stock market liquidity: evidence from Malaysia', *Corporate governance (Bradford)*, 17(3), pp. 490–510.
- Alkebsee, R., Tian, G., Garefalakis, A., Koutoupis, A., and Kyriakogkonas, P. (2021) 'Does Independent Director's Cash Compensation Matter? Evidence from Corporate Fraud', *Journal of business economics and management*. Available at SSRN: <https://ssrn.com/abstract=3953392> or <http://dx.doi.org/10.2139/ssrn.3953392>.
- Allen, F., Qian, J., and Qian, M. (2005) 'Law, finance, and economic growth in China', *Journal of financial economics*, 77(1), pp. 57–116. doi:10.1016/j.jfineco.2004.06.010.
- Almadi, M. and Lazic, P. (2016), 'CEO incentive compensation and earnings management', *Management decision*, 54(10), pp. 2447–2461.
- Al-Shaer, H., and Zaman, M. (2018) 'Credibility of sustainability reports: the contribution of audit committees', *Business strategy and the environment*, 27(7), 973-986.
- Altamuro, J., and Beatty, A. (2010) 'How does internal control regulation affect financial reporting?', *Journal of accounting and economics*, 49(1), 58-74.
- Anderson, R.C., Reeb, D.M, Upadhyay, A., and Zhao, W. (2011) 'The economics of director heterogeneity', *Financial management*, 40(1), 5–38. doi: 10.1111/j.1755-053X.2010.01133.x.
- Andreas, J., Rapp, M., and Wolff, M. (2012) 'Determinants of director compensation in two-tier systems: evidence from German panel data', *Review of managerial science*, 6(1), pp. 33-79.
- Archambeault, D.S., Dezoort, F.T., and Hermanson, D.R., (2008) 'Audit committee incentive compensation and accounting restatements', *Contemporary accounting research*, 25(4), p.965-992.
- Armitage, S., Hou, W., Sarkar, S., and Talaulicar, T. (2017) 'Corporate governance challenges in emerging economies', *Corporate governance: an international review*, 25(3), pp. 148-154.
- Armstrong, C.S., Jagolinzer, A.D., and Larcker, D.F. (2010a) 'Chief executive officer equity incentives and accounting irregularities', *Journal of accounting research*, 48(2), pp. 225-271.
- Armstrong, C.S., Guay, W.R., and Weber, J.P. (2010b) 'The role of information and financial reporting in corporate governance and debt contracting', *Journal of accounting & economics*, 50(2), pp. 179–234. doi:10.1016/j.jacceco.2010.10.001.

- Armstrong, C.S., Ittner, C.D., and Larcker, D.F. (2012) 'Corporate governance, compensation consultants, and CEO pay levels', *Review of accounting studies*, 17(2), 322–351. doi: 10.1007/s11142-012-9182-y.
- Arye Bebchuk, L., and Fried, J.M. (2003) 'Executive compensation as an agency problem', *The journal of economic perspectives*, 17(3), 71-92.
- Aubert, V. (1952) 'White-collar crime and social structure', *The American journal of sociology*, 58(3), 263–271. doi: 10.1086/221148.
- Aguilera, R.V., Judge, W.Q., and Terjesen, S.A. (2018) 'Corporate governance deviance', *The academy of management review*, 43(1), pp. 87–109. doi:10.5465/amr.2014.0394.
- Averett, S., Terrizzi, S., and Wang, Y. (2017) 'The effect of sorority membership on eating disorders, body weight, and disordered-eating behaviors', *Health economics*, 26(7), 875–891.
- Ayuso, S., Rodríguez, M.A., García-Castro, R., and Ariño M.A. (2014) 'Maximizing Stakeholders' Interests', *Business & society*, 53(3), pp. 414–439. doi:10.1177/0007650311433122.
- Bae, G., and Kim, H.-J. (2020) 'Relation between early e-WOM and average TV ratings', *Asia Pacific journal of marketing and logistics*, 32(1), pp. 135–148. doi:10.1108/APJML-10-2018-0402.
- Bai, Chong-En, Liu, Q., Lu, J., Song, F.M., and Zhang, J. (2004) 'Corporate governance and market valuation in China', *Journal of comparative economics*, 32(4), pp. 599-616.
- Bainbridge, S.M. (2012) 'Corporate Governance after the Financial Crisis', *Cary: Oxford University Press*. doi:10.1093/acprof:oso/9780199772421.001.0001.
- Ball, R. (2009) 'Market and political/regulatory perspectives on the recent accounting scandals', *Journal of accounting research*, 47(2), 277–323. doi: 10.1111/j.1475-679X.2009.00325.x.
- Balsam, S., Gifford, R.H., and Puthenpurackal, J. (2017), 'Related party transactions, corporate governance and CEO compensation', *Journal of business finance and accounting*, 44(5-6), pp. 854–894.
- Bhabra, H.S., Liu, T., and Tirtiroglu, D. (2008) 'Capital structure choice in a nascent market: evidence from listed firms in China', *Financial management*, 37(2), pp. 341–364. doi:10.1111/j.1755-053X.2008.00015.x.
- Barney, J.L. (2009) 'Corporate scandals, executive compensation, and international corporate governance convergence: a U.S. - Australia case study', *Temple international and comparative law journal*, 23(2), 231-267.
- Barton, J. (2001) 'Does the use of financial derivatives affect earnings management decisions?', *The accounting review*, 76(1), 1-26.

- Bartov, E., Gul, F.A., and Tsui, Judy S.L (2000) 'Discretionary-accruals models and audit qualifications', *Journal of accounting and economics*, 30(3), 421–452.
- Bascle, G. (2008) 'Controlling for endogeneity with instrumental variables in strategic management research', *Strategic organization*, 6(3), pp. 285–327. doi:10.1177/1476127008094339.
- Beasley, M.S. (1996) 'An empirical analysis of the relation between the board of director composition and financial statement fraud', *The accounting review*, 71 (4), pp. 443-465.
- Beasley, M.S. (1998) 'Boards of directors and fraud: certified public accountant', *The CPA journal*, 68 (4), 56-58.
- Beasley, M.S., Carcello, J.V., and Hermanson, D.R. (2001) 'Financial Reporting Fraud: could It Happen to You?', *The journal of corporate accounting & finance*, Vol 12 No, 4, pp. 3–9. doi:10.1002/jcaf.2402.
- Beasley, M.S., Carcello, J.V., Hermanson, D.R., and Lapedes, P.D. (2000) 'Fraudulent financial reporting: consideration of industry traits and corporate governance mechanisms', *Accounting horizons*, 14(4), 441–454. doi: 10.2308/acch.2000.14.4.441.
- Bebchuk, L.A., and Fried, J. (2003) 'Executive compensation as an agency problem', *Journal of economic perspectives*, 17, pp. 71–92.
- Bebchuk, L.A., and Fried, J. (2004) 'Pay without performance', *Harvard university press*, Cambridge, MA
- Bebchuk, L.A.A., Fried, J.M.M. and Walker, D.I.I. (2002) 'Managerial power and rent extraction in the design of executive compensation', *University of Chicago law review*, 69(3), pp. 751–846.
- Bebchuk, L.A., Grinstein, Y., and Peyer, U. (2010) 'Lucky CEOs and lucky directors', *Journal of finance*, 65(6), 2363-2401. <http://dx.doi.org/10.1111/j.1540-6261.2010.01618.x>
- Becker, G.S. (1968) 'Crime and punishment: an economic approach', *The journal of political economy*, 76(2), pp. 169–217. doi: 10.1086/259394
- Belhadji, E.B., Dionne, G., and Tarkhani, F. (2000) 'A Model for the Detection of Insurance Fraud', *Geneva papers on risk and insurance. Issues and practice*, 25(4), pp. 517–538. doi:10.1111/1468-0440.00080.
- Bell, T.B., and Carcello, J.V. (2000) 'A decision aid for assessing the likelihood of fraudulent financial reporting', *Auditing: a journal of practice and theory*, 19(1), 168–184. doi: 10.2308/aud.2000.19.1.169.
- Beneish, M.D. (1999) 'Incentives and penalties related to earnings overstatements that violate GAAP', *The accounting review*, 74(4), 425–457. doi: 10.2308/accr.1999.74.4.425.

- Benito, A., and Conyon, M. (1999) 'The governance of directors' pay: evidence from UK companies', *Journal of management & governance*, 3(2), p. 117-136.
- BenYoussef, N., and Khan, S. (2018), 'Timing of earnings restatements: CEO equity compensation and market reaction', *Accounting and finance (Parkville)*, 58(2), pp. 341–365.
- Berenguer-Rico, V., and Wilms, I. (2021) 'Heteroscedasticity testing after outlier removal', *Econometric reviews*, 40(1), pp. 51–85. doi:10.1080/07474938.2020.1735749.
- Bergstresser, D., and Philippon, T. (2006) 'CEO incentives and earnings management', *Journal of financial economics*, 80 (3), pp. 511-529.
- Bernile, G., Bhagwat, V., and Yonker, S. (2018) 'Board diversity, firm risk, and corporate policies', *Journal of financial economics*, 127(3), 588-612.
- Bertelli, A.M., and Sinclair, J.A. (2015) 'Mass Administrative Reorganization, Media Attention, and the Paradox of Information', *Public administration review*, 75(6), pp. 855–866. doi:10.1111/puar.12396.
- Bhagal, S., Bolton, B., and Romano, R. (2008) 'The promise and peril of corporate governance indices', *Columbia law review*, 108(8), pp. 1803–1882.
- Bhagal, S., and Bolton, B. (2008) 'Corporate governance and firm performance', *Journal of corporate finance*, 14(3), pp. 257–273.
- Bhagal, S., and Tookes, H. (2012) 'Voluntary and mandatory skin in the game: understanding outside directors' stock holdings', *The European journal of finance*, 18(3-4), pp. 191–207.
- Bik, O., and Hooghiemstra, R. (2018) 'Cultural differences in auditors' compliance with audit firm policy on fraud risk assessment procedures', *Auditing: a journal of practice and theory*, 37(4), 25–48. doi:10.2308/AJPT-51998.
- Boateng, A., Wang, Y., Ntim, C., and Glaister, K.W. (2021) 'National culture, corporate governance and corruption: a cross-country analysis', *International journal of finance and economics*. 26(3), 3852–3874. doi:10.1002/ijfe.1991.
- Bøhren, Ø., and Staubo, S. (2016), 'Mandatory gender balance and board independence', *European financial management: the journal of the european financial management Association*, 22(1), pp. 3–30.
- Bolton, B. (2014) 'Audit committee performance: ownership vs. independence - Did SOX get it wrong?', *Accounting and finance*, 54(1), pp. 83–112.
- Bonetti, P., Magnan, M.L., and Parbonetti, A. (2016). The influence of country- and firm-level governance on financial reporting quality: revisiting the evidence. *Journal of business finance & accounting*, 43(9-10), 1059–1094. doi:10.1111/jbfa.12220.

- Borghans, L., Golsteyn, B.H.H., Heckman, J.J., and Meijers, H. (2009), 'Gender differences in risk aversion and ambiguity aversion', *Journal of the European economic association*, 7(2/3), pp. 649–658.
- Borokhovich, K.A., Parrino, R., and Trapani, T. (1996), 'Outside directors and CEO selection', *Journal of financial and quantitative analysis*, 31(3), pp. 337–355.
- Bostock, R., and Stoney, C. (1997) 'Japanese corporate governance: Governance for the twenty-first century or a model in decline?', *Asia Pacific business review*, 4(1), 63–82.
- Boumosleh, A. (2009) 'Director compensation and the reliability of accounting information', *Financial review*, 44(4), pp. 525–539.
- Boyd, B.K. (1995). CEO Duality and firm performance: a contingency model. *Strategic management journal*, 16(4), 301–312.
- Bradley, M., Schipani, C., Sundaram, A., and Walsh, J. (1999) 'The purposes and accountability of the corporation in contemporary society: corporate governance at a crossroads', *Law and contemporary problems*, 62(3), pp. 9–86.
- Brandes, P., Dharwadkar, R., and Suh, S., (2016), 'I know something you don't know!: The role of linking pin directors in monitoring and incentive alignment', *Strategic management journal*, 37(5), pp. 964–981.
- Bravo, F., Reguera-Alvarado, N., and Del Pilar Pérez, M. (2018) 'The role of directors: unravelling the effects of boards on corporate outcomes,' *International journal of managerial finance*, 14(4), pp. 399–413.
- Brennan, N.M., and McGrath, M. (2007) 'Financial statement fraud: some lessons from US and European case studies', *Australian accounting review*, 17(42), 49–61. doi: 10.1111/j.1835-2561.2007.tb00443.x.
- Brickley, J.A., Bhagat, S., and Lease, R.C. (1985) 'The impact of long-range managerial compensation plans on shareholder wealth', *Journal of accounting and economics*, 7(1), pp. 115–129.
- Brickley, J.A., Smith, C.W., and Zimmerman, J.L. (2021) 'Managerial economics and organizational architecture', Seventh edition. McGraw Hill.
- Brickley, J.A., and Zimmerman, J.L. (2010) 'Corporate governance myths: Comments on Armstrong, Guay, and Weber', *Journal of accounting & economics*, 50(2), pp. 235–245. doi:10.1016/j.jacceco.2010.10.002.
- Brochet, F., Miller, G.S., Naranjo, P., and Yu, G. (2019) 'Managers' cultural background and disclosure attributes', *The accounting review*, 94(3), 57–86. doi: 10.2308/accr-52290.

- Brownen-Trinh, R. (2019) 'Effects of winsorization: The cases of forecasting non-GAAP and GAAP earnings', *Journal of business finance & accounting*, 46(1-2), pp. 105–135. doi:10.1111/jbfa.12365.
- Browning, J., and Zabriskie, N.B. (1983) 'How ethical are industrial buyers', *Industrial marketing management*, 12(4), 219–224. doi: 10.1016/S0019-8501(83)80001-7.
- Bruce, A., and Buck, T. (2005) 'Executive pay and UK corporation governance. In Keasey, K., Thompson, S. and Wright, M. (ed) *Corporate governance: accountability, enterprise and international comparisons* (pp. 117-135), John Wiley & Sons, Ltd
- Buchanan, J., Chai, D.H., and Deakin, S. (2014) 'Agency theory in practice: a qualitative study of hedge fund activism in Japan', *Corporate governance: an international review*, 22(4), pp. 296–311. doi:10.1111/corg.12047.
- Buck, T., and Shahrim, A. (2005) 'The translation of corporate governance changes across national cultures: the case of Germany', *Journal of international business studies*, 36 (1), pp. 42-61.
- Bueno-Garcia, M., Ortiz-Perez, A., and Mellado-Garcia, E. (2021) 'Shareholders' environmental profile and its impact on firm's environmental proactivity: an institutional approach', *Business strategy and the environment*, 30(1), pp. 374–387. doi:10.1002/bse.2626.
- Bugeja, M., Fohn, S., and Matolcsy, Z. (2016) 'Determinants of the levels and changes in non-executive director compensation', *Accounting & finance*, 56(3), pp. 627-667.
- Burgstahler, D., and Dichev, I. (1997) 'Earnings management to avoid earnings decreases and losses', *Journal of accounting & economics*, 24(1), pp. 99–126. doi:10.1016/S0165-4101(97)00017-7.
- Burns, N., and Kedia, S. (2006) 'The impact of performance-based compensation on misreporting', *Journal of financial economics*, 79(1), 35–67. doi: 10.1016/j.jfineco.2004.12.003.
- Bushman, R.M., and Smith, A.J. (2001) 'Financial accounting information and corporate governance', *Journal of accounting and economics*, 32(1), 237-333.
- Byard, D., and Li, Y. (2004) 'The impact of option-based compensation on director independence', Working Paper. Baruch College – CUNY. Available from: http://w4.stern.nyu.edu/accounting/docs/speaker_papers/fall2004/Byard_Oct8.pdf. Accessed on: 9 August 2019.
- Cadbury report (1992). Available from: <https://www.icaew.com/-/media/corporate/files/library/subjects/corporate-governance/financial-aspects-of-corporate-governance.ashx?la=en>. Accessed on 17th March, 2022.

- Calder, A. (2008) 'Corporate governance a practical guide to the legal frameworks and international codes of practice', London; Philadelphia: Kogan Page
- Capalbo, F., Frino, A., Lim, M.Y., Mollica, V., and Palumbo, R. (2018), 'The impact of CEO narcissism on earnings management', *Abacus (Sydney)*, 54(2), pp. 210–226. doi:10.1111/abac.12116.
- Carcello, J.V., Hermanson, D.R., and Raghunandan, K. (2005) 'Changes in internal auditing during the time of the major US accounting scandals', *International journal of auditing*, 9(2), pp. 117–127. doi:10.1111/j.1099-1123.2005.00273.x.
- Carcello, J.V., and Nagy, A.L. (2004a) 'Client size, auditor specialization and fraudulent financial reporting,' *Managerial auditing journal*, 19 (5), pp. 651-668.
- Carcello, J.V., and Nagy, A.L. (2004b) 'Audit firm tenure and fraudulent financial reporting', *Auditing: a journal of practice and theory*, 23(2), pp. 55–69. doi:10.2308/aud.2004.23.2.55.
- Carrasco, A., Francoeur, C., Labelle, R., Laffarga, J., and Ruiz-Barbadillo, E. (2015) 'Appointing women to boards: is there a cultural bias?', *Journal of business ethics*, 129(2), 429–444. doi: 10.1007/s10551-014-2166-z.
- Carter, D.A., D'Souza, F., Simkins, B.J., and Simpson, W.G. (2010) 'The gender and ethnic diversity of us boards and board committees and firm financial performance', *Corporate governance: an international review*, 18(5), 396–414. doi: 10.1111/j.1467-8683.2010.00809.x.
- Carter, D.A., Simkins, B.J., and Simpson, W.G. (2003) 'Corporate governance, board diversity, and firm value', *The financial review (Buffalo, N.Y.)*, 38(1), 33–53. doi: 10.1111/1540-6288.00034.
- Cernat, L. (2004) 'The emerging European corporate governance model: Anglo-American, Continental, or still the century of diversity?', *Journal of European public policy*, 11(1), pp. 147-166.
- Certo, S.T., Busenbark, J.R., Woo, H.-S., and Semadeni, M. (2016) 'Sample selection bias and Heckman models in strategic management research', *Strategic management journal*, 37(13), pp. 2639–2657. doi:10.1002/smj.2475.
- Chahine, S., Fang, Y., Hasan, I., and Mazboudi, M. (2021), 'CEO network centrality and the likelihood of financial reporting fraud', *Abacus (Sydney)*, 57(4), pp. 654–678. doi:10.1111/abac.12219.
- Chalmers, K., Naiker, V., and Navissi, F. (2012), 'Earnings quality and Rule 10b-5 securities class action lawsuits', *Journal of accounting and public policy*, 31(1), pp. 22–43.

- Chand, P., Cummings, L., and Patel, C. (2012) 'The effect of accounting education and national culture on accounting judgments: a comparative study of Anglo-Celtic and Chinese culture', *The European accounting review*, 21(1), 153–182. doi: 10.1080/09638180.2011.591524.
- Chandra, U., and Schneible, R. (2019) 'An investigation of stock price declines following corporate financing events: further evidence', *The European accounting review*, 28(2), pp. 249–274. doi: 10.1080/09638180.2018.1464398.
- Chang, K., Kang, E., and Li, Y. (2016) 'Effect of institutional ownership on dividends: an agency-theory-based analysis', *Journal of business research*, 69(7), pp. 2551–2559. doi:10.1016/j.jbusres.2015.10.088.
- Chatterjee, S., Harrison, J.S., and Bergh, D.D. (2003) 'Failed takeover attempts, corporate governance and refocusing', *Strategic management journal*, 24(1), pp. 87–96. doi:10.1002/smj.279.
- Chen, C. (2014) 'Are workers more likely to be deviant than managers? A cross-national analysis', *Journal of business ethics*, 123(2), 221–233. doi: 10.1007/s10551-013-1810-3.
- Chen, C. J.P., Li, Z., Su, X., and Sun, Z. (2011) 'Rent-seeking incentives, corporate political connections, and the control structure of private firms: Chinese evidence', *Journal of corporate finance (Amsterdam, Netherlands)*, 17(2), 229–243. doi:10.1016/j.jcorpfin.2010.09.009.
- Chen, D., Chen, Y., Li, O.Z., and Ni, C. (2018) 'Foreign residency rights and corporate fraud', *Journal of corporate finance (Amsterdam, Netherlands)*, 51, 142–16.
- Chen, G., Firth, M., Gao, D.N., and Rui, O.M. (2006) 'Ownership structure, corporate governance, and fraud: evidence from China', *Journal of corporate finance (Amsterdam, Netherlands)*, 12(3), 424–448. doi: 10.1016/j.jcorpfin.2005.09.002
- Chen, H., Chen, J.Z., Lobo, G.J., and Wang, Y. (2011a) 'Effects of audit quality on earnings management and cost of equity capital: evidence from China', *Contemporary accounting research*, 28(3), 892–925.
- Chen, J. (2015) 'A primer on corporate governance: China', / Jean Jinghan Chen. (First ed., Corporate governance collection), Business Expert Press, New York.
- Chen, J., Cumming, D., Hou, W., and Lee, E. (2016) 'Does the external monitoring effect of financial analysts deter corporate fraud in China?', *Journal of business ethics*, 134(4), 727–742. doi: 10.1007/s10551-014-2393-3.
- Chen, J.J. (2004) 'Determinants of capital structure of Chinese-listed companies', *Journal of business research*, 57(12), 1341–1351. doi: 10.1016/S0148-2963(03)00070-5.

- Chen, J.J., Liu, X., and Li, W. (2010) 'The effect of insider control and global benchmarks on Chinese executive compensation', *Corporate governance: an international review*, 18(2), pp. 107-123.
- Chen, L. (2016) 'Local institutions, audit quality, and corporate scandals of US-listed foreign firms', *Journal of business ethics*, 133(2), pp. 351–373. doi: 10.1007/s10551-014-2370-x.
- Chen, T., Harford, J., and Lin, C. (2015) 'Do analysts matter for governance? Evidence from natural experiments', *Journal of financial economics*, 115(2), pp. 383–410. doi:10.1016/j.jfineco.2014.10.002.
- Chen, Y., Che, L., Zheng, D., and You, H. (2020) 'Corruption culture and accounting quality', *Journal of accounting and public policy*, 39(2), 106698. doi:10.1016/j.jaccpubpol.2019.106698.
- Chen, Z., Keefe, M.O., and Watts, J.K. (2020) 'Board of director compensation in China: it pays to be connected', *Pacific basin finance journal*, 63, 101394. doi: 10.1016/j.pacfin.2020.101394
- Chen, Z.O., and Keefe, M.O.C., (2018) 'Board of director compensation in China: To pay or not to pay? How much to pay?', *Emerging markets review*, 37, pp. 66–82.
- Cheng, Louis T.W, Chan, Ricky Y.K, and Leung, T.Y. (2010) 'Management demography and corporate performance: evidence from China', *International business review*, 19(3), 261-275.
- Cheng, Q., and Warfield, T.D. (2005) 'Equity incentives and earnings management', *The accounting review*, 80 (2), pp. 441-476.
- Cheng, Q., and Farber, D.B. (2008), 'Earnings restatements, changes in CEO compensation, and firm performance', *The accounting review*, 83(5), pp. 1217–1250.
- Chhaochharia, V., Kumar, A., and Niessen-Ruenzi, A. (2012) 'Local investors and corporate governance', *Journal of accounting & economics*, 54(1), 42–67. doi: 10.1016/j.jacceco.2012.03.002.
- Chhillar, P., and Lellapalli, R. (2015) 'Divergence or convergence: paradoxes in corporate governance?', *Corporate governance*, 15(5), pp. 693-705.
- Chidambaran, N., Kedia, S., and Prabhala, N. (2010) 'CEO-director connections and corporate fraud', Fordham University schools of business research paper No. 2010-009. Available at SSRN: <https://ssrn.com/abstract=1681472> or <http://dx.doi.org/10.2139/ssrn.1681472>
- Chijoke-Mgbame, A.M., Boateng, A., and Mgbame, C.O. (2020) 'Board gender diversity, audit committee and financial performance: evidence from Nigeria', *Accounting forum*, 44(3), 262–286. doi: 10.1080/01559982.2020.1766280.

- China (2019) 'Corporate governance code', Available from: http://www.csrc.gov.cn/pub/csrc_en//laws/rfdm/DepartmentRules/201904/P020190415336431477120.pdf; Accessed on: 18 July 2019
- Chiu, R.K., Luk, V.W.-M., and Tang, T.L.-P. (2002) 'Retaining and motivating employees: compensation preferences in Hong Kong and China', *Personnel review*, 31(4), 402–431. doi: 10.1108/00483480210430346.
- Chizema, A., Liu, X., Lu, J., and Gao, L. (2015) 'Politically connected boards and top executive pay in Chinese listed firms', *Strategic management journal*, 36(6), pp. 890–906. doi:10.1002/smj.2253.
- Choi, I., Nisbett, R.E., and Norenzayan, A. (1999) 'Causal attribution across cultures. *Psychological bulletin*, 125(1), 47–63. doi: 10.1037/0033-2909.125.1.47.
- Choi, J.J., Li, Y., Shenkar, O., and Zhang, J. (2021), 'Internal governance and corporate fraud', *Journal of accounting, auditing and finance*, p. 148558.
- Choi, S.J., and Pritchard, A.C. (2016), 'SEC investigations and securities class actions: an empirical comparison', *Journal of empirical legal studies*, 13(1), pp. 27–49.
- Choo, F., and Tan, K. (2007) 'An "American Dream" theory of corporate executive fraud', *Accounting forum*, 31(2), 203–215. doi: 10.1016/j.accfor.2006.12.004.
- Chow, I. H.-S. (1992) 'Chinese workers attitudes towards compensation practices in the Peoples Republic of China', *Employee relations*, 14(3), 41–55. doi: 10.1108/01425459210013896.
- Cieslik, A., and Goczek, L. (2018) 'Control of corruption, international investment, and economic growth – evidence from panel data', *World development*, 103, pp. 323–335. doi:10.1016/j.worlddev.2017.10.028.
- Claessens, S., and Yurtoglu, B. (2012) 'Corporate governance and development - an update', Global corporate governance forum. Focus 10.
- Clarke, D.C. (2003) 'Corporate governance in China: an overview', *China economic review*, 14(4), pp.494–507.
- Clifford, C.P., Jordan, B.D., and Riley, T.B. (2014) 'Average funds versus average dollars: implications for mutual fund research', *Journal of empirical finance*, 28, pp. 249–260. doi:10.1016/j.jempfin.2014.07.005.
- Coenen, T. and ProQuest (2008) 'Essentials of corporate fraud', Hoboken, N.J.
- Collins G. Ntim, Sarah Lindop, Kofi A. Osei, and Dennis A. Thomas (2015) 'Executive compensation, corporate governance and corporate performance', *Managerial and decision economics*, 36(2), pp. 67–96

- Canyon, M.J., Hass, L.H., Vergauwe, S., and Zhang, Z. (2019) 'Foreign experience and CEO compensation', *Journal of corporate finance (Amsterdam, Netherlands)*, 57, pp. 102–121. doi:10.1016/j.jcorpfin.2017.12.016
- Canyon, M., and He, J. (2016) 'Executive compensation and corporate fraud in China', *Journal of business ethics*, 134(4), pp. 669–691.
- Canyon, M., and He, L. (2011) 'Executive compensation and corporate governance in China', *Journal of corporate finance*, 17(4), pp. 1158–1175.
- Canyon, M., and Peck, S. (1998) 'Board control, remuneration committees, and top management compensation', *Academy of management journal*, 41(2), pp. 146–157.
- Canyon, M. J., and Murphy, K. J. (2000) 'The prince and the pauper? CEO pay in the United States and United Kingdom', *The economic journal (London)*, 110(467), 640–671. doi: 10.1111/1468-0297.00577.
- Canyon, M., Fernandes, N., Ferreira, M., Pedro, M., and Murphy, K. (2013) 'The evolution of executive compensation: the US experience', In executive remuneration and employee performance-related pay. Oxford University Press, pp. Executive remuneration and employee performance-related pay, Chapter 4.
- Canyon, M.J. (1997) 'Corporate governance and executive compensation', *International journal of industrial organization*, 15(4), pp. 493–509.
- Canyon, M.J. (2014) 'Executive compensation and board governance in US firms', *Economic journal*, 124(574), pp. F60–F89.
- Canyon, Martin J, and He, L. (2012), 'CEO compensation and corporate governance in China', *Corporate governance: an international review*, 20(6), pp. 575-592.
- Cordeiro, J., Veliyath, R. and Erasmus, E. (2000) 'An empirical investigation of the determinants of outside director compensation', *Corporate governance: an international review*, 8(3), pp. 268-279.
- Core, J.E., Holthausen, R.W., and Larcker, D.F. (1999) 'Corporate governance, chief executive officer compensation, and firm performance', *Journal of financial economics*, 51(3), 371–406. doi: 10.1016/S0304-405X(98)00058-0.
- Cornett, M.M., Marcus, A.J., and Tehranian, H. (2008) 'Corporate governance and pay-for-performance: the impact of earnings management', *Journal of financial economics*, 87 (2), pp. 357-373.
- Corruption Perceptions Index (2020). Transparency International. Available from: <https://www.transparency.org/en/cpi/2020/index/nzl>. Accessed on 11 September 2021.

- Cox, A., Craig, R., and Tourish, D. (2018) 'Retraction statements and research malpractice in economics', *Research policy*, 47(5), pp. 924-935
- Cressey, D. R. (1986) 'Why managers commit fraud. Australian & New Zealand', *Journal of criminology*, 19(4), 195–209. doi: 10.1177/000486588601900402.
- Cressey, D.R. (1953) 'Other people's money: a study in the social psychology of embezzlement', Glencoe, Ill: Free Press.
- Croson, R., and Gneezy, U. (2009), 'Gender differences in preferences', *Journal of economic literature*, 47(2), pp. 448–474.
- Crutchley, C.E., and Minnick, K., (2012) 'Cash versus incentive compensation: lawsuits and director pay', *Journal of business research*, 65(7), pp. 907-913.
- Cullinan, C.P., Du, H., and Wright, G.B. (2008) 'Is there an association between director option compensation and the likelihood of misstatement?', *Advances in accounting, incorporating advances in international accounting*, 24(1), pp.16–23.
- Cullinan, C.P., Du, H., and Jiang, W. (2010) 'Is compensating audit committee members with stock options associated with the likelihood of internal control weaknesses?', *International journal of auditing*, 14(3), pp. 256–273. doi:10.1111/j.1099-1123.2010.00416.x.
- Daboub, A.J., Rasheed, Abdul M. A, Priem, R.L., and Gray, D. (1995) 'Top management team characteristics and corporate illegal activity', *The academy of management review*, 20(1), 138-170.
- Dahya, J., Garcia, L. G., and Van Bommel, J. (2009), 'One man two hats—what's all the commotion!', *Financial review*, 44(2), pp. 179-212.
- Daily, C.M., and Dalton, D.R. (2002) 'The problem with equity compensation', *Journal of business strategy*, 23(4), pp. 28-30.
- Daily, C.M., and Johnson, J.L. (1997) 'Sources of CEO power and firm financial performance: a longitudinal assessment', *Journal of management*, 23(2), pp. 97–117. doi:10.1016/S0149-2063(97)90039-8.
- Daily, C.M., Dalton, D.R., and Cannella Jr, A.A. (2003) 'Corporate governance: Decades of dialogue and data', *The academy of management review*, 28(3), pp. 371–382. doi:10.5465/AMR.2003.10196703.
- Dalton, D. R., Hitt, M. A., Certo, S. T., and Dalton, C. M. (2007) 'The fundamental agency problem and its mitigation: independence, equity, and the market for corporate control', *The academy of management annals*, 1, pp. 1-64.
- Dalton, D.R., and Daily, C.M., (2001), 'Director stock compensation: an invitation to a conspicuous conflict of interests?', *Business ethics quarterly*, 11(1), pp. 89-108.

- Daniel, S.J., Cieslewicz, J.K., and Pourjalali, H. (2012) 'The impact of national economic culture and country-level institutional environment on corporate governance practices: theory and empirical evidence', *Management international review*, 52(3), 365–394. doi: 10.1007/s11575-011-0108-x.
- Davidson III, W.N., Jiraporn, P., Kim, Y.S., and Nemec, C. (2004) 'Earnings management following duality-creating successions: ethnostatistics, impression management, and agency theory', *Academy of management journal*, 47(2), 267–275. doi: 10.2307/20159577.
- Davidson III, W.N., Worrell, D.L., and Nemec, C. (1998) 'CEO duality, succession-planning and agency theory: research agenda', *Strategic management journal*, 19(9), pp. 905–908. doi:10.1002/(SICI)1097-0266(199809)19:9<905::AID-SMJ3>3.0.CO;2-G.
- Davis, G.F., and Mizruchi, M.S., (1999) 'The money center cannot hold: commercial banks in the U.S. System of corporate governance', *Administrative science quarterly*, 44(2), pp. 215–239.
- Davis, J.H., Schoorman, F.D., and Donaldson, L. (1997) 'Toward a stewardship theory of management', *The academy of management review*, 22(1), pp. 20–47. doi:10.5465/AMR.1997.9707180258.
- Davis, J.R., and Welton, R.E. (1991) 'Professional ethics: business students' perceptions. *Journal of business ethics*, 10(6), 451–463. doi: 10.1007/BF00382829.
- Dechow, P.M., Ge, W., Larson, C.R., and Sloan, R.G. (2011) 'Predicting material accounting misstatements', *Contemporary accounting research*, 28(1), 17–82. doi: 10.1111/j.1911-3846.2010.01041.x.
- Dechow, P.M., Sloan, R.G., and Sweeney, A.P. (1996) 'Causes and consequences of earnings manipulation: an analysis of firms subject to enforcement actions by the SEC', *Contemporary accounting research*, 13(1), 1–36. doi: 10.1111/j.1911-3846.1996.tb00489.x.
- DeFond, M.L., Wong, T.J., and Li, S. (1999) 'The impact of improved auditor independence on audit market concentration in China', *Journal of accounting and economics*, 28(3), 269-305.
- DeGeorge, F., Patel, J., and Zeckhauser, R. (1999) 'Earnings management to exceed thresholds', The journal of business (Chicago, Ill.), 72(1), pp. 1–33. doi:10.1086/209601.
- Del Brio, E.B., Yoshikawa, T., Connelly, C.E., and Tan, W.L. (2013), 'The effects of CEO trustworthiness on directors' monitoring and resource provision', *Journal of business ethics*, 118(1), pp. 155–169.
- Dellaportas, S. (2013) 'Conversations with inmate accountants: motivation, opportunity and the fraud triangle', *Accounting forum*, 37(1), 29–39. doi: 10.1016/j.accfor.2012.09.003.

- Demb, A., and Neubauer, F.F. (1992) 'The corporate board: confronting the paradoxes', *Long range planning*, 25(3), pp. 9–20.
- Demirgüç-Kunt, A., and Maksimovic, V. (1998) 'Law, finance, and firm growth. *The journal of finance (New York)*, 53(6), 2107–2137. doi: 10.1111/0022-1082.00084.
- Denis, D.J., Hanouna, P., and Sarin, A. (2006) 'Is there a dark side to incentive compensation?', *Journal of corporate finance (Amsterdam, Netherlands)*, 12(3), pp. 467–488. doi:10.1016/j.jcorpfin.2005.08.006.
- Deutsch, Y., Keil, T., and Laamanen, T. (2007) 'Decision making in acquisitions: the effect of outside directors' compensation on acquisition patterns', *Journal of management*, 33(1), pp. 30–56.
- Deutsch, Y., Keil, T., and Laamanen, T. (2011) 'A dual agency view of board compensation: the joint effects of outside director and CEO stock options on firm risk', *Strategic management journal*, 32(2), pp. 212-227.
- Dicke, L.A. (2002) 'Ensuring accountability in human services contracting', *American review of public administration*, 32(4), pp. 455–470. doi:10.1177/027507402237870.
- Dietl, H.M., and Ebrary, Inc. (1998) 'Capital markets and corporate governance in Japan, Germany, and the United States: organizational response to market inefficiencies', Routledge; London; New York.
- DiMaggio, P.J., and Powell, W.W. (1983) 'The iron cage revisited: institutional isomorphism and collective rationality in organizational fields', *American sociological review*, 48(2), pp. 147–160. doi:10.2307/2095101.
- Ding, S., Jia, C., Li, Y., and Wu, Z. (2010) 'Reactivity and passivity after enforcement actions: better late than never', *Journal of business ethics*, 95(Suppl 2), pp. 337–359. doi:10.1007/s10551-011-0849-2.
- Dmytriiev, S.D., Freeman, R.E., and Hörisch, J. (2021) 'The relationship between stakeholder theory and corporate social responsibility: differences, similarities, and implications for social issues in management', *Journal of management studies*, 58(6), pp. 1441–1470. doi:10.1111/joms.12684.
- Doherty, A.M., Chen, X, and Alexander, N. (2014) 'The franchise relationship in China: agency and institutional theory perspectives', *European journal of marketing*, 48(9/10), 1664–1689.
- Doidge, C., Karolyi, G.A., and Stulz, R.M. (2007) 'Why do countries matter so much for corporate governance?', *Journal of financial economics*, 86 (1), pp. 1-39.
- Donelson, D.C., Jennings, R., and Mcinnis, J. (2017) 'Financial statement quality and debt contracting: evidence from a survey of commercial lenders',

Contemporary accounting research, 34(4), pp. 2051–2093. doi:10.1111/1911-3846.12345.

Dore, R. (2005) 'Deviant or different? Corporate governance in Japan and Germany', *Corporate governance: an international review*, 13(3), pp. 437–446.

Dorminey, J., Scott Fleming, A., Riley Jr., M., and Kranacher, R. (2012) 'The evolution of fraud theory', *Issues in accounting education*, 27(2), pp. 555–579.

Doupnik, T.S. (2008) 'Influence of culture on earnings management: a note', *Abacus (Sydney)*, 44(3), 317–340. doi:10.1111/j.1467-6281.2008.00265.x

Doyle, J.T., Ge, W., and McVay, S. (2007) 'Accruals quality and internal control over financial reporting', *The accounting review*, 82(5), 1141–1170.

Duong, L., and Evans, J. (2016), 'Gender differences in compensation and earnings management: evidence from Australian CFOs', *Pacific-basin finance journal*, 40, pp. 17–35.

Dyck, A., Morse, A., and Zingales, L. (2010), 'Who blows the whistle on corporate fraud?', *The journal of finance (New York)*, 65(6), pp. 2213–2253.

Easterlin, R.A., (2014) 'Life satisfaction in the transition from socialism to capitalism: Europe and China. In happiness and economic growth', Oxford University Press, pp. Happiness and economic growth, Chapter 1.

Eddleston, K.A., and Kellermanns, F.W. (2007) 'Destructive and productive family relationships: a stewardship theory perspective', *Journal of business venturing*, 22(4), pp. 545–565. doi:10.1016/j.jbusvent.2006.06.004.

Efendi, J., Srivastava, A., and Swanson, E.P. (2007) 'Why do corporate managers misstate financial statements? The role of option compensation and other factors', *Journal of financial economics*, 85(3), 667–708. doi: 10.1016/j.jfineco.2006.05.009.

Ehrlich, I. (1973) 'Participation in illegitimate activities: a theoretical and empirical investigation', *The journal of political economy*, 81(3), 521–565. doi: 10.1086/260058

Eisenhardt, K. (1989) 'Agency theory: an assessment and review', *The academy of management review*, 14(1), pp. 57–74.

Elston, J. A., Chen, S., and Weidinger, A. (2016) 'The role of informal capital on new venture formation and growth in China', *Small business economics*, 46(1), 79–91. doi: 10.1007/s11187-015-9674-9.

Enriques, L., and Volpin, P. (2007) 'Corporate Governance Reforms in Continental Europe', *The Journal of economic perspectives*, 21(1), pp. 117–140. doi:10.1257/jep.21.1.117.

- Erickson, M., Hanlon, M. and Maydew, E.L. (2006), 'Is there a link between executive equity incentives and accounting fraud?', *Journal of accounting research*, 44(1), pp. 113–143.
- Estrin, S., and Prevezer, M. (2011) 'The role of informal institutions in corporate governance: Brazil, Russia, India, and China compared', *Asia Pacific journal of management*, 28(1), 41-67.
- Evert, Robert E., Payne, G. Tyge, Moore, Curt B., and McLeod, Michael S., (2018) 'Top management team characteristics and organizational virtue orientation: An empirical examination of IPO firms', *Business ethics quarterly*, 28(4), 427–461. doi: 10.1017/beq.2018.3.
- Faleye, O. (2017), 'The downside to full board independence', *MIT Sloan management review*, 58(2), p. 87.
- Fama, E.F., and Jensen, M.C. (1983) 'Separation of ownership and control', *The journal of law & economics*, 26(2), 301–325. <https://doi.org/10.1086/467037>.
- Fama, E.F. (1980), 'Agency problems and the theory of the firm', *The journal of political economy*, 88(2), pp. 288-307.
- Fan, J.P., Wong, T., and Zhang, T. (2007) 'Politically connected CEOs, corporate governance, and Post-IPO performance of China's newly partially privatized firms', *Journal of financial economics*, 84(2), 330–357. doi:10.1016/j.jfineco.2006.03.008.
- Fan, J.P.H., Titman, S., and Twite, G. (2012) 'An international comparison of capital structure and debt maturity choices', *Journal of financial and quantitative analysis*, 47(1), 23–56. doi: 10.1017/S0022109011000597.
- Farber, D.B. (2005) 'Restoring trust after fraud: does corporate governance matter?', *The Accounting Review*, 80(2), pp. 539–561.
- Farrell, K.A., Friesen, G.C., and Hersch, P.L. (2008) 'How do firms adjust director compensation?', *Journal of corporate finance (Amsterdam, Netherlands)*, 14(2), pp. 153–162. doi: 10.1016/j.jcorpfin.2008.02.004.
- Fayezi, S., O'Loughlin, A., and Zutshi, A. (2012) 'Agency theory and supply chain management: a structured literature review', *Supply chain management*, 17(5), pp. 556–570. doi:10.1108/13598541211258618.
- Fedaseyeu, V., Linck, J.S., and Wagner, H.F. (2018) 'Do qualifications matter? New evidence on board functions and director compensation', *Journal of corporate finance*, 48, pp. 816-839.
- Feng, M., Ge, W., Luo, S., and Shevlin, T., (2011) 'Why do CFOs become involved in material accounting manipulations?', *Journal of accounting and economics*, 51(1), pp.21-36.

Fernandes, N., and Guedes, J. (2010), 'Keeping up with the joneses: a model and a test of collective accounting fraud', *European financial management*, 16(1), pp. 72–93.

Ferreira, M.A., Keswanib, A., Miguel, A.F., and Ramosc, S.B. (2012) 'The flow-performance relationship around the world', *Journal of banking & finance*, 36(6), pp. 1759–1780. doi:10.1016/j.jbankfin.2012.01.019.

Fich, E.M. and Shivdasani, A. (2006), 'Are busy boards effective monitors?', *The Journal of finance (New York)*, 61(2), pp. 689–724.

Fich, E.M., and Shivdasani, A., (2005) 'The impact of stock-option compensation for outside directors on firm value', *The Journal of business*, 78(6), pp. 2229–2254.

Fields, T.D., Lys, T.Z., and Vincent, L. (2001) 'Empirical research on accounting choice', *Journal of accounting & economics*, 31(1), pp. 255–307. doi:10.1016/S0165-4101(01)00028-3.

Filatotchev, I., and Wright, M. (2011) 'Agency perspectives on corporate governance of multinational enterprises', *Journal of management studies*, 48(2), pp. 471–486. doi:10.1111/j.1467-6486.2010.00921.x.

Finkelstein, S., and Daveni, R. (1994) 'CEO Duality as a double-edged sword: how board of directors balance entrenchment avoidance and unity of command', *Academy of management journal*, 37(5), pp. 1079–1108. doi:10.2307/256667.

Firth, M., Fung, Peter M.Y, and Rui, O.M. (2007a) 'How ownership and corporate governance influence chief executive pay in China's listed firms', *Journal of business research*, 60(7), 776-785.

Firth, M., Fung, Peter M.Y, and Rui, O.M. (2007b) 'Ownership, two-tier board structure, and the informativeness of earnings – evidence from China', *Journal of accounting and public policy*, 26(4), 463-496.

Firth, M., Jin, M., and Zhang, Y. (2014) 'Information-based stock trading and managerial incentives: evidence from China's stock market', *The European journal of finance*, 20(7-9), 637–656. doi: 10.1080/1351847X.2012.672441.

Firth, M., Mo, P., and Wong, R., (2005) 'Financial statement frauds and auditor sanctions: an analysis of enforcement actions in China', *Journal of business ethics*, 62(4), pp. 367–381.

Firth, M., Mo, Phyllis L. L., and Wong, Raymond M. K. (2005) 'Financial statement frauds and auditor sanctions: an analysis of enforcement actions in China', *Journal of business ethics*, 62(4), 367-381.

Firth, M., Rui, O.M., and Wu, W. (2011) 'Cooking the books: Recipes and costs of falsified financial statements in China', *Journal of corporate finance*

(Amsterdam, Netherlands), 17(2), pp. 371–390.
doi:10.1016/j.jcorpfin.2010.09.002.

Fleckner, A.M., Hopt, K.J., and ProQuest (2013) 'Comparative corporate governance a functional and international analysis', Cambridge: Cambridge University Press.

Fogel, E.M., and Geier, A.M. (2007) 'Strangers in the house: rethinking Sarbanes-Oxley and the independent board of directors', *The Delaware journal of corporate law*, 32(1), pp. 33-72.

Franke, G.R., and Richey, R.G. (2010) 'Improving generalizations from multi-country comparisons in international business research', *Journal of international business studies*, 41(8), 1275–1293. doi:10.1057/jibs.2010.21.

Freeman, R.E., and Reed, D.L., (1983) 'Stockholders and stakeholders: a new perspective on corporate governance', *California management review*, 25(3), pp. 88–106.

Freeman, R.E., (2010) 'Strategic management: a stakeholder approach', Cambridge, Cambridge University Press

Gao, Y., Kim, J.B., Tsang, D., and Wu, H. (2017) 'Go before the whistle blows: an empirical analysis of director turnover and financial fraud', *Review of accounting studies*, 22(1), 320–360. doi: 10.1007/s11142-016-9381-z.

García L., Juan M., García Osma, B., Mora, A., and Scapin, M. (2017), 'The monitoring role of female directors over accounting quality', *Journal of corporate finance (Amsterdam, Netherlands)*, 45, pp. 651–668.

García-Castro, R., Aguilera, R.V., and Ariño, M.A. (2013) 'Bundles of firm corporate governance practices: a fuzzy set analysis', *Corporate governance: an international review*, 21(4), 390–407. doi: 10.1111/corg.12024.

García-sánchez, I., Rodríguez-domínguez, L., and Frías-aceituno, J. (2015) 'Board of directors and ethics codes in different corporate governance systems', *Journal of business ethics*, 131(3), pp. 681-698.

Garel, A., Martin-Flores, J.M., Petit-Romec, A., and Scott, A. (2021), 'Institutional investor distraction and earnings management', *Journal of corporate finance (Amsterdam, Netherlands)*, 66, p. 101801.

Gerety, M., Hoi, C.K., and Robin, A. (2001) 'Do shareholders benefit from the adoption of incentive pay for directors?', *Financial management*, 30(4), pp. 45–61.

Available from:
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.876.6239&rep=rep1&type=pdf>. Accessed on: 9 August 2019

Getie Mihret, D. (2014) 'National culture and fraud risk: exploratory evidence', *Journal of financial reporting & accounting*, 12(2), 161–176. doi: 10.1108/JFRA-10-2012-0049.

- Ghafoor, A., Zainudin, R., and Mahdzan, N.S. (2019) 'Factors eliciting corporate fraud in emerging markets: case of firms subject to enforcement actions in Malaysia', *Journal of business ethics*, 160(2), 587–608. doi: 10.1007/s10551-018-3877-3.
- Ghazi-Tehrani, A.K., and Pontell, H.N. (2019) 'Corruption in the United States and China: codes of conduct vs. crackdowns', *Crime, law, and social change*, 73(1), 73–92. doi:10.1007/s10611-019-09848-3.
- Gilson, R., and Roe, M., (1993) 'Understanding the Japanese keiretsu - overlaps between corporate governance and industrial-organization', *Yale law journal*, 102(4), pp.871–906.
- Gladwin, T.N. (1981) 'Culture's consequences: international differences in work-related values HofstedeGeert. Culture's consequences: international differences in work-related values. Beverly Hills, Calif.: Sage Publications, 1980, 76 pp., \$29.95. *The academy of management review*, 6(4), 681–683. doi:10.5465/amr.1981.4285738.
- Glaeser, E., Scheinkman, J., and Shleifer, A. (2003) 'The injustice of inequality', *Journal of monetary economics*, 50(1), 199–222. doi: 10.1016/S0304-3932(02)00204-0.
- Goergen, M., Manjon, M., and Renneboog, L. (2008) 'Is the German system of corporate governance converging towards the Anglo-American model?', *Journal of management and governance*, 12(1), pp. 37-71.
- Goh, B.W. (2009) 'Audit committees, boards of directors, and remediation of material weaknesses in internal control', *Contemporary accounting research*, 26(2), pp. 549–579. doi:10.1506/car.26.2.9.
- Goh, B.W., Lee, J., Ng, J., and Ow Yong, K. (2016), 'The effect of board independence on information asymmetry', *The European accounting review*, 25(1), pp. 155–182.
- Goldman, E., and Slezak, S.L. (2006) 'An equilibrium model of incentive contracts in the presence of information manipulation', *Journal of financial economics*, 80(3), pp. 603–626. doi: 10.1016/j.jfineco.2005.05.007.
- Goodrick, D. (2014) 'Comparative case studies, methodological briefs: impact evaluation 9', *UNICEF Office of Research*, Florence.
- Gordon, J.N. (2007) 'The rise of independent directors in the united states, 1950-2005: of shareholder value and stock market prices', *Stanford law review*, 59(6), 1465–1568. doi:10.2139/ssrn.928100.
- Graham, J.R., Leary, M.T., and Roberts, M.R. (2015) 'A century of capital structure: The leveraging of corporate America', *Journal of financial economics*, 118(3), 658–683. doi: 10.1016/j.jfineco.2014.08.005.

- Graham, J.R., Li, S., and Qiu, J. (2008) 'Corporate misreporting and bank loan contracting', *Journal of financial economics*, 89(1), 44–61. doi: 10.1016/j.jfineco.2007.08.005.
- Grant, R.M., and Visconti, M. (2006) 'The strategic background to corporate accounting scandals', *Long range planning*, 39(4), pp. 361–383. doi:10.1016/j.lrp.2006.09.003.
- Gray, S.J. (1988) 'Towards a theory of cultural influence on the development of accounting systems internationally', *Abacus (Sydney)*, 24(1), 1–15. doi: 10.1111/j.1467-6281.1988.tb00200.x.
- Greenspan, A. (2002) 'Federal Reserve Board's semi-annual monetary policy report to the Congress. Before the Committee on banking, housing, and urban affairs, U.S. senate', Available from: <https://www.federalreserve.gov/boarddocs/hh/2002/july/testimony.htm>; Accessed on: 15 November 2018
- Greenberg, M. (2003) 'Fixing the legal system', *Chief executive*, (194), p. 44.
- Gregg, P., Machin, S., and Szymanski, S. (1993) 'The disappearing relationship between directors' pay and corporate performance', *British journal of industrial relations*, 31(1), pp. 1–9.
- Griffin, D., Guedhami, O., Kwok, C.C.Y., Li, K., and Shao, L. (2017) 'National culture: The missing country-level determinant of corporate governance', *Journal of international business studies*, 48(6), pp. 740–762. doi:10.1057/s41267-017-0069-9.
- Grosvold, J., and Brammer, S. (2011) 'National institutional systems as antecedents of female board representation: an empirical study', *Corporate governance: an international review*, 19(2), 116–135. doi: 10.1111/j.1467-8683.2010.00830.x.
- Gründler, K., and Potrafke, N. (2019) 'Corruption and economic growth: New empirical evidence', *European journal of political economy*, 60, p. 101810. doi:10.1016/j.ejpoleco.2019.08.001.
- Guangguo, S., Ruiqi, S., and Hezun, L. (2019), 'Does executive directors from controlling shareholders improve corporate governance?', *Nankai business review international*, 10(4), pp. 546–569.
- Gujarati, D.N., and Porter, D.C. (2009) 'Basic econometrics', 5th ed., International ed. Boston ; London: McGraw-Hill.
- Gul, F.A., Kim, Jeong-Bon, and Qiu, A.A. (2010) 'Ownership concentration, foreign shareholding, audit quality, and stock price synchronicity: evidence from China', *Journal of financial economics*, 95(3), 425–442.

Gul, F.A., Srinidhi, B., and Ng, A.C. (2011) 'Does board gender diversity improve the informativeness of stock prices?', *Journal of accounting and economics*, 51(3), 314–338. doi: 10.1016/j.jacceco.2011.01.005.

Guo, S., Fraser, M., and Chen, Q. (2020), Propensity score analysis: recent debate and discussion. *Journal of the society for social work and research*, 11(3), pp. 463-482. <https://doi.org/10.1086/711393>

Habib, A., and Jiang, H. (2015) 'Corporate governance and financial reporting quality in China: a survey of recent evidence', *Journal of international accounting, auditing & taxation*, 24, 29–45. doi:10.1016/j.intaccaudtax.2014.12.002.

Hadani, M., Goranova, M., and Khan, R. (2011), 'Institutional investors, shareholder activism, and earnings management', *Journal of business research*, 64(12), pp. 1352–1360.

Hambrick, D.C., and Jackson, E.M. (2000) 'Outside directors with a stake: the linchpin in improving governance', *California management review*, 42(4), pp. 108–127.

Hambrick, D.C., and Mason, P.A. (1984) 'Upper echelons: the organization as a reflection of its top managers. *The academy of management review*, 9(2), 193–206. doi: 10.2307/258434.

Hamdani, A., and Kraakman, R. (2007) 'Rewarding outside directors', *Michigan law review*, 105(8), pp. 1677–1711. doi:10.2139/ssrn.959210.

Hamilton, E.L., and Smith, J.L. (2021) 'Error or fraud? The effect of omissions on management's fraud strategies and auditors' evaluations of identified misstatements', *The accounting review*, 96(1), pp. 225–249. doi:10.2308/TAR-2017-0355.

Hanlon, M., Rajgopal, S., and Shevlin, T. (2003) 'Are executive stock options associated with future earnings?', *Journal of accounting and economics*, 36(1), pp. 3–43.

Harjoto, M.A., Laksmana, I., and Yang, Ya-wen. (2018) 'Board diversity and corporate investment oversight', *Journal of business research*, 90, 40-47.

Harris, J., and Bromiley, P. (2007) 'Incentives to cheat: the influence of executive compensation and firm performance on financial misrepresentation', *Organization science*, 18(3), pp. 350-367.

Harris, O.; Karl, J.B., and Lawrence, E. (2019) 'CEO compensation and earnings management: does gender really matter?', *Journal of business research*, 98, pp. 1–14.

Hart, O. (1995) 'Corporate governance: some theory and implications', *The economic journal (London)*, 105(430), pp. 678–689. doi:10.2307/2235027

Hass, L.H., Johan, S., and Schweizer, D. (2016a) 'Is corporate governance in china related to performance persistence?', *Journal of business ethics*, 134(4), pp. 575-592.

Hass, L.H., Tarsalewska, M., and Zhan, F. (2016b) 'Equity incentives and corporate fraud in China', *Journal of business ethics*, 138(4), pp. 723-742.

Hasselback, D. (2017) 'Sino-Forest and CEO Allen Chan defrauded investors, OSC rules', *Financial post*. Available from: <https://business.financialpost.com/news/osc-rules-sino-forest-and-ceo-allen-chan-defrauded-investors>; Accessed on: 27 July 2019.

Haxhi, I., and van Ees, H. (2010) 'Explaining diversity in the worldwide diffusion of codes of good governance', *Journal of international business studies*, 41(4), 710–726. doi: 10.1057/jibs.2009.39.

He, L. (2008), 'Do founders matter? A study of executive compensation, governance structure and firm performance', *Journal of business venturing*, 23(3), pp. 257–279.

Healy, P.M. (1985) 'The effect of bonus schemes on accounting decisions', *Journal of accounting and economics*, 7(1), pp. 85-107.

Hearn, B. (2013) 'The determinants of director remuneration in West Africa: The impact of state versus firm-level governance measures', *Emerging markets review*, 14(1), pp. 11-34.

Heath, J., and Norman, W. (2004) 'Stakeholder theory, corporate governance and public management: what can the history of state-run enterprises teach us in the post-Enron era?', *Journal of business ethics*, 53(3), pp. 247–265.

Hendry, J. (2001) 'Missing the target: normative stakeholder theory and the corporate governance debate', *Business ethics quarterly*, 11(1), pp. 159–176. doi:10.2307/3857875.

Herd, R., Koen, V., and Reutersward, A. (2010) 'China's labour market in transition: job creation, migration and regulation', *OECD economics department working papers*, No. 749, OECD Publishing, Paris, <https://doi-org.ezproxy.nottingham.ac.uk/10.1787/5kmlh5010gg7-en>.

Hirst, D.E. (1994) 'Auditor sensitivity to earnings management', *Contemporary accounting research*, 11(1), 405–422.

Hitt, G., and Schlesinger, J.M. (2002) 'Stock options come under fire in the wake of Enron's collapse', *The wall street journal*. Available from: <https://www.wsj.com/articles/SB1017093594617163160>; Accessed on 2nd June 2022

Ho, Simon S. M., Li, A.Y., Tam, K., and Zhang, F. (2015) 'CEO gender, ethical leadership, and accounting conservatism', *Journal of business ethics*, 127(2), 351–370. <https://doi.org/10.1007/s10551-013-2044-0>

Hofstede Insights (2021). Available from: <https://www.hofstede-insights.com/>. Accessed on: 28th January 2021.

Hofstede, G. (1993) 'Cultural constraints in management theories', *Executive (Ada, Ohio)*, 7(1), 81–94. doi:10.5465/AME.1993.9409142061.

Hogan, B., and Jonas, G.A. (2016) 'The association between executive pay structure and the transparency of restatement disclosures', *Accounting horizons*, 30(3), 307–323. doi: 10.2308/acch-51454.

Hogan, C., Rezaee, Z., Riley, R., and Velury, U. (2008) 'Financial statement fraud: insights from the academic literature', *Auditing*, 27(2), pp. 231-252.

Holderness, D.K., Huffman, A., and Lewis-Western, M. (2019), 'Rank and file equity compensation and earnings management: evidence from stock options', *Journal of business finance and accounting*, 46(9-10), pp. 1201–1236.

Hou, W., and Moore, G. (2010) 'Player and referee roles held jointly: the effect of state ownership on china's regulatory enforcement against fraud', *Journal of business ethics*, 95(S2), 317-335.

Hou, W., Lee, E., Stathopoulos, K., and Tong, Z. (2016) 'Executive compensation and the split share structure reform in China', *The European journal of finance*, 22(4-6), 506-528.

Hsieh, C., Ren, Y., and Lirely, R. (2016) 'Earnings management, executive compensation and layoffs', *Academy of accounting and financial studies journal*, 20(3), pp. 84-102.

Hu, G., Yuan, R., and Xiao, J.Z. (2017) 'Can independent directors improve internal control quality in China?', *The European journal of finance*, 23(7-9), 626-647.

Hwang, D.B., and Blair Staley, A. (2005) 'An analysis of recent accounting and auditing failures in the United States on US accounting and auditing in China', *Managerial auditing journal*, 20(3), pp. 227–234. doi:10.1108/02686900510585573.

Huang, H.H., Wang, W., and Zhou, J. (2013), 'Shareholder rights, insider ownership and earnings management', *Abacus (Sydney)*, 49(1), pp. 46–73. doi:10.1111/j.1467-6281.2012.00390.x.

Huang, W., and Boateng, A., (2017) 'Executive shareholding, compensation, and analyst forecast of Chinese firms', *Applied economics*, 49(15), pp. 1459–1472.

Huang, Y., Elkinawy, S., and Jain, P.K. (2013) 'Investor protection and cash holdings: evidence from US cross-listing', *Journal of banking & finance*, 37(3), 937–951. doi:10.1016/j.jbankfin.2012.10.021.

Hutter, S., Devlin, M. and Burkard, J. (2002) 'Corporate governance in Germany', *International financial law review*, pp. 105–112.

Isidro, H., and Sobral, M. (2015) 'The effects of women on corporate boards on firm value, financial performance, and ethical and social compliance', *Journal of business ethics*, 132(1), 1–19. doi: 10.1007/s10551-014-2302-9.

Jackling, B., and Johl, S. (2009) 'Board structure and firm performance: evidence from India's top companies', *Corporate governance: an international review*, 17(4), 492-509.

Japan's corporate governance code (2018). Available from: https://www.jpx.co.jp/english/news/1020/b5b4pj000000jvxr-att/20180602_en.pdf; Accessed on: 11 May 2019.

Jensen, M. (1993), 'The modern industrial revolution, exit, and the failure of internal control systems', *The journal of finance*, 48(3), pp. 831-880.

Jensen, M.C., and Murphy, K.J. (1990) 'Performance pay and top-management incentives', *Journal of political economy*, 98(2), pp. 225–264.

Jensen, M.C., and Meckling, W.H. (1976) 'Theory of the firm: managerial behavior, agency costs and ownership structure', *Journal of financial economics*, 3 (4), pp. 305-360.

Jensen, M.C., Murphy, K.J., and Wruck, E.G. (2004) 'Remuneration: where we've been, how we got to here, what are the problems, and how to fix them', *Harvard NOM Working Paper No. 04-28*; ECGI - Finance Working Paper No. 44/2004. Available at SSRN: <https://ssrn.com/abstract=561305> or <http://dx.doi.org/10.2139/ssrn.561305>

Iatridis, G. (2010) 'International financial reporting standards and the quality of financial statement information', *International review of financial analysis*, 19(3), pp. 193–204. doi:10.1016/j.irfa.2010.02.004.

Ji, J., Talavera, O., and Yin, S. (2020) 'Frequencies of board meetings on various topics and corporate governance: evidence from China. *Review of quantitative finance and accounting*, 54(1), 69–110. doi: 10.1007/s11156-018-00784-2.

Ji, L.-J., Nisbett, R.E., and Peng, K. (2000) 'Culture, control, and perception of relationships in the environment', *Journal of personality and social psychology*, 78(5), 943–955. doi: 10.1037/0022-3514.78.5.943.

Jiang, F., and Kim, K.A. (2015) 'Corporate governance in China: a modern perspective', *Journal of corporate finance (Amsterdam, Netherlands)*, 32, pp. 190-216.

Jiang, H., and Zhang, H. (2018) 'Regulatory restriction on executive compensation, corporate governance and firm performance', *Asian review of accounting*, 26(1), 131-152.

Jiang, J., Petroni, K.R., and Yanyan Wang, I. (2010) 'CFOs and CEOs: Who have the most influence on earnings management?', *Journal of financial economics*, 96(3), pp. 513–526.

Jiang, L., Kling, G., Bo, H., and Driver, C. (2017) 'Why do firms adopt stock options and who benefits? A natural experiment in China', *Pacific-basin finance journal*, 46, 124–140. doi:10.1016/j.pacfin.2017.09.007.

Jiang, W., Wan, H., and Zhao, S. (2016) 'Reputation concerns of independent directors: evidence from individual director voting', *The review of financial studies*, 29(3), 655–696.

Jin, J.Y., Kanagaretnam, K., and Lobo, G.J. (2011), 'Ability of accounting and audit quality variables to predict bank failure during the financial crisis', *Journal of banking and finance*, 35(11), pp. 2811–2819.

Jiraporn, P., Miller, G.A., Yoon, S.S., and Kim, Y.S. (2008) 'Is earnings management opportunistic or beneficial? An agency theory perspective', *International review of financial analysis*, 17(3), pp. 622–634. doi:10.1016/j.irfa.2006.10.005.

Jiu, L., Hu, S., and Liu, Y. (2021) 'Does financial statement comparability mitigate corporate frauds in an emerging market? Evidence from China', *Asia-Pacific journal of accounting & economics*, ahead-of-print(ahead-of-print), pp. 1–18. doi:10.1080/16081625.2021.1976229.

John, K., and Senbet, L.W. (1998) 'Corporate governance and board effectiveness', *Journal of banking and finance*, 22(4), pp. 371–403.

Johnson, S., Ryan, H., and Tian, Y. (2009) 'Managerial incentives and corporate fraud: the sources of incentives matter', *Review of finance*, 13(1), pp. 115–145.

Jung, S.M., and Vijverberg, C.-P.C. (2019) 'Financial development and income inequality in china – a spatial data analysis', *The North American journal of economics and finance*, 48, 295–320. <https://doi.org/10.1016/j.najef.2019.03.001>

Kaminski, K.A., Sterling Wetzel, T., and Guan, L. (2004) 'Can financial ratios detect fraudulent financial reporting?', *Managerial auditing journal*, 19(1), pp. 15–28. doi:10.1108/02686900410509802.

Karpoff, J.M., Lee, D.S., and Martin, G.S. (2008), 'The cost to firms of cooking the books', *Journal of financial and quantitative analysis*, 43(3), pp. 581–611.

Katmon, N., and Farooque, O.A. (2017) 'Exploring the impact of internal corporate governance on the relation between disclosure quality and earnings management in the UK listed companies', *Journal of business ethics*, 142(2), pp. 345–367. doi:10.1007/s10551-015-2752-8.

Kato, T., and Long, C., (2006) 'Executive compensation, firm performance, and corporate governance in china: evidence from firms listed in the shanghai and shenzhen stock exchanges', *Economic development and cultural change*, 54(4), 945-983.

- Kaufman, A., and Englander, E. (2011) 'Behavioral economics, federalism, and the triumph of stakeholder theory', *Journal of business ethics*, 102(3), pp. 421–438. doi:10.1007/s10551-011-0822-0.
- Kawamura, A. (2015) 'Corporate governance', 2nd edition. Thomson Reuters.
- Ke, B., and Zhang, X. (2021) 'Does public enforcement work in weak investor protection countries? Evidence from China', *Contemporary accounting research*, 38(2), 1231–1273. doi:10.1111/1911-3846.12652.
- Kerwin, R. (1995) 'Financial statement fraud', *The secured lender*, 51(2), p.36.
- Keyton, K. and Reifman, A. (2010) 'Winsorize', Encyclopedia of Research Design.
- Khanna, V., Kim, E.H., and Lu, Y. (2015) 'CEO connectedness and corporate fraud', *The journal of finance (New York)*, 70(3), 1203-1252.
- Kiel, G.C. and Nicholson, G.J. (2003) 'Board composition and corporate performance: how the Australian experience informs contrasting theories of corporate governance', *Corporate governance: an international review*, 11(3), pp. 189–205.
- Kim, H.T., Kwak, B., Lee, J., and Suk, I. (2019), 'CEO and outside director equity compensation: substitutes or complements for management earnings forecasts?', *The European accounting review*, 28(2), pp. 371–393.
- Kim, I., Miller, S., Wan, H., and Wang, B. (2016) 'Drivers behind the monitoring effectiveness of global institutional investors: evidence from earnings management', *Journal of corporate finance (Amsterdam, Netherlands)*, 40, pp. 24–46.
- Kim, J.Y., Roden, D.M., and Cox, S.R. (2013), 'The composition and compensation of the board of directors as predictors of corporate fraud', *Accounting and finance research*, 2(3), pp. 142-154
- Kirkbride, J., Letza, S., and Smallman, C. (2009), 'Minority shareholders and corporate governance: reflections on the derivative action in the UK, the USA and in China', *International journal of law and management*, 51(4), 206–219.
- Kke, J., and Renneboog, L., (2005) 'Do corporate control and product market competition lead to stronger productivity growth? Evidence from market-oriented and blockholder-based governance regimes', *The journal of law and economics*, 48(2), pp. 475–516.
- Knack, S., and Keefer, P. (1997) 'Does social capital have an economic payoff? a cross-country investigation', *The quarterly journal of economics*, 112(4), 1251–1288. doi: 10.1162/003355300555475.
- Kong, D., Xiang, J., Zhang, J., and Lu, Y. (2019) 'Politically connected independent directors and corporate fraud in China', *Accounting and finance (Parkville)*, 58(5), pp. 1347–1383. doi:10.1111/acfi.12449.

- Kosnik, R.D. (1987) 'Greenmail: a study of board performance in corporate governance', *Administrative science quarterly*, 32(2), pp. 163–185.
- Kosnik, R.D. (1990) 'Effects of board demography and directors' incentives on corporate greenmail decisions', *The academy of management journal*, 33(1), pp. 129–150.
- Krenn, M. (2016) 'Convergence and divergence in corporate governance: an integrative institutional theory perspective', *Management research review*, 39(11), pp. 1447–1471. doi:10.1108/MRR-05-2014-0103.
- Kuang, Y.F., and Lee, G. (2017) 'Corporate fraud and external social connectedness of independent directors', *Journal of corporate finance (Amsterdam, Netherlands)*, 45, 401–427. doi: 10.1016/j.jcorpfin.2017.05.014.
- Kubo, K. (2005) 'Executive compensation policy and company performance in Japan', *Corporate governance: an international review*, 13(3), pp. 429-436.
- La Porta, R., Lopez-de-Silanes, F., and Shleifer, A. (2008) 'The economic consequences of legal origins', *Journal of economic literature*, 46(2), 285–332. doi: 10.1257/jel.46.2.285.
- La Porta, R., Lopez-De-Silanes, F., and Shleifer, A. (1999) 'Corporate ownership around the world', *The Journal of finance (New York)*, 54(2), pp. 471–517. doi:10.1111/0022-1082.00115.
- Lai, L., and Tam, H. (2017) 'Corporate governance, ownership structure and managing earnings to meet critical thresholds among Chinese listed firms', *Review of quantitative finance and accounting*, 48(3), pp. 789-818.
- Lalwani, A.K., Shavitt, S., and Johnson, T. (2006) 'What Is the relation between cultural orientation and socially desirable responding?', *Journal of personality and social psychology*, 90(1), 165–178. doi:10.1037/0022-3514.90.1.165.
- Lane, C. (2003) 'Changes in corporate governance of german corporations: convergence to the Anglo-American model?', *Competition and change*, 7(2-3), pp. 79–100.
- Larcker, D.F., Richardson, S.A., and Tuna, I. (2007) 'Corporate governance, accounting outcomes, and organizational performance', *The accounting review*, 82(4), pp. 963–1008. doi:10.2308/accr.2007.82.4.963.
- Laux, C., and Laux, V. (2009) 'Board committees, CEO compensation, and earnings management', *The accounting review*, 84(3), pp. 869–891.
- Lazar, C., Metzner, Y., Rapp, M., and Wolff, M. (2014) 'Remuneration of non-executive directors in German listed firms: an empirical analysis from a practitioners' perspective', *Accounting, economics, and law*, 4(1), pp. 1-16.
- Lee, C.-J., Wang, R., Lee, C.-Y., and Hung, C.C.W. (2018) 'Board structure and directors' role in preventing corporate misconduct in the construction

industry', *Journal of management in engineering*, 34(2), p. 4017067. doi:10.1061/(ASCE)ME.1943-5479.0000593

Lee, S., and Isa, M. (2015) 'Directors' remuneration, governance and performance: The case of Malaysian banks', *Managerial finance*, 41(1), pp. 26-44.

Lel, U. (2018) 'The role of foreign institutional investors in restraining earnings management activities across countries', *Journal of international business studies*, 50(6), 895-922.

Lenard, M.J., Yu, B., York, E.A., and Wu, S. (2017), 'Female business leaders and the incidence of fraud litigation', *Managerial finance*, 43(1), pp. 59-75.

Lennox, C., and Pittman, J. A. (2010) 'Big five audits and accounting fraud', *Contemporary accounting research*, 27(1), 209-247. doi: 10.1111/j.1911-3846.2010.01007.x.

Leone, A.J., Minutti-Meza, M., and Wasley, C.E. (2019) 'Influential observations and inference in accounting research', *The Accounting review*, 94(6), pp. 337-364. doi:10.2308/accr-52396.

Leuz, C., Nanda, D., and Wysocki, P.D. (2003) 'Earnings management and investor protection: an international comparison', *Journal of financial economics*, 69(3), 505-527. doi: 10.1016/S0304-405X(03)00121-1.

Levene, L.P. (2003) 'Litigious culture saps U.S. enterprise. (another perspective)', *National Underwriter*. Property & casualty/risk & benefits management ed., 107(18), p. 33.

Lewellen, J. (2011), 'Institutional investors and the limits of arbitrage', *Journal of financial economics*, 102(1), pp. 62-80.

Lewellen, W., Loderer, C., and Rosenfeld, A. (1989) 'Mergers, executive risk reduction, and stockholder wealth', *Journal of financial and quantitative analysis*, 24(4), pp. 459-472.

Lewellyn, K.B., and Bao, S. 'Rosey' (2017) 'The role of national culture and corruption on managing earnings around the world', *Journal of world business: JWB*, 52(6), 798-808. doi:10.1016/j.jwb.2017.07.002.

Li, D., Moshirian, F., Nguyen, P., and Tan, L. (2007) 'Corporate governance or globalization: what determines CEO compensation in China?', *Research in international business and finance*, 21(1), 32-49.

Li, M. (2013) 'Using the propensity score method to estimate causal effects', *Organizational research methods*, 16(2), 188-226.

Li, X., Kim, J.-Bon., Wu, H., and Yu, Y. (2021a) 'Corporate social responsibility and financial fraud: the moderating effects of governance and religiosity', *Journal of business ethics*, 170(3), 557-576. doi: 10.1007/s10551-019-04378-3.

- Li, Y., Liu, J., Tian, G.G., and Wang, Xi. (2021b) 'Courtesy calls for reciprocity: appointment of uncertificated independent directors in China', *Corporate governance: an international review*, 29(4), 352–380. doi:10.1111/corg.12366.
- Liang, Q., Xu, P., and Jiraporn, P. (2013) 'Board characteristics and Chinese bank performance', *Journal of banking and finance*, 37(8), 2953-2968.
- Liao, J., Smith, D., and Liu, X. (2019) 'Female CFOs and accounting fraud: evidence from China', *Pacific-basin finance journal*, 53, 449-463.
- Liao, M. (2018) 'US cross-listings and director compensation: a cross-country analysis', *Managerial finance*, 44(9), pp. 1083-1100.
- Lim, S., Matolcsy, Z., and Chow, D. (2007), 'The association between board composition and different types of voluntary disclosure', *The European accounting review*, 16(3), pp. 555–583.
- Lin, C., Ma, Y., Malatesta, P., and Xuan, Y. (2013) 'Corporate ownership structure and the choice between bank debt and public debt', *Journal of financial economics*, 109(2), 517–534.
- Lin, Y.F., Liao, Y.C., and Chang, K.C. (2011) 'Firm performance, corporate governance and executive compensation in high-tech businesses', *Total quality management & business excellence*, 22(2), pp. 159–172.
- Lin, Y.-M., You, S.-J., and Lin, F.-J. (2008) 'The effects of pre-issue information releases on seasoned equity offerings', *Journal of business finance & accounting*. Paper received November 2005, revised version accepted June 2008, 35(9-10), pp. 1138–1163. doi:10.1111/j.1468-5957.2008.02106.x.
- Linck, J.S., Netter, J., and Shu, T. (2013) 'Can managers use discretionary accruals to ease financial constraints? Evidence from discretionary accruals prior to investment', *The accounting review*, 88(6), 2117–2143. doi: 10.2308/accr-50537.
- Linn, S.C., and Park, D. (2005) 'Outside director compensation policy and the investment opportunity set', *Journal of corporate finance*, 11(4), pp. 680-715.
- Lisic, L.L., Silveri, S.D., Song, Y., and Wang, K. (2015) 'Accounting fraud, auditing, and the role of government sanctions in China', *Journal of business research*, 68(6), pp. 1186–1195. doi: 10.1016/j.jbusres.2014.11.013.
- Liu, X. (2016) 'Corruption culture and corporate misconduct', *Journal of financial economics*, 122(2), 307–327. doi: 10.1016/j.jfineco.2016.06.005.
- Liu, Y., Padgett, C., and Varotto, S. (2017) 'Corporate governance, bank mergers and executive compensation', *International journal of finance and economics*, 22(1), 12–29. doi: 10.1002/ijfe.1565.

- Liu, Y., Wei, Z., and Xie, F. (2016) 'CFO gender and earnings management: evidence from China', *Review of quantitative finance and accounting*, 46(4), pp. 881-905.
- Loebbecke, J., Eining, M.M., and Willingham, J. (1989) 'Auditors experience with material irregularities - frequency, nature, and detectability', *Auditing - a journal of practice & theory*, 9(1), pp. 1-28.
- Longo, M., Mura, M., and Bonoli, A. (2005) 'Corporate social responsibility and corporate performance: the case of Italian SMEs', *Corporate governance (Bradford)*, 5(4), pp. 28-42. doi:10.1108/14720700510616578.
- Lovett, S., Simmons, L.C., and Kali, R. (1999) 'Guanxi versus the market: ethics and efficiency', *Journal of international business studies*, 30(2), 231-247. doi:10.1057/palgrave.jibs.8490068.
- Low, M., Davey, H., and Hooper, K. (2008) 'Accounting scandals, ethical dilemmas and educational challenges', *Critical perspectives on accounting*, 19(2), 222-254. doi: 10.1016/j.cpa.2006.05.010.
- Lu, Y., and Cao, Y. (2018) 'The individual characteristics of board members and internal control weakness: evidence from China', *Pacific-basin finance journal*, 51, pp. 75-94. doi:10.1016/j.pacfin.2018.05.013.
- Lubatkin, M.H., Lane, P.J., Collin, S.O., and Very, P. (2005), 'Origins of corporate governance in the USA, Sweden and France', *Organization studies*, 26(6), pp. 867-888.
- Luo, J., and Wang, L. (2022) 'Does managerial foreign experience deter corporate fraud', *Emerging markets finance & trade*, 58(2), pp. 342-364. doi:10.1080/1540496X.2021.1973424.
- Luo, X., Chung, C.N., and Sobczak, M. (2008) 'How do corporate governance model differences affect foreign direct investment in emerging economies?', *Journal of international business studies*, 40(3), pp. 444-467.
- Ma, R., Anderson, H.D., and Marshall, B.R. (2018) 'Stock market liquidity and trading activity: is china different?', *International review of financial analysis*, 56, pp. 32-51. doi:10.1016/j.irfa.2017.12.010.
- Magilke, M., Mayhew, B., and Pike, J. (2009) 'Are independent audit committee members objective? Experimental evidence', *The accounting review*, 84(6), pp. 1959-1981.
- Mallin, C., Melis, A., and Gaia, S. (2015) 'The remuneration of independent directors in the UK and Italy: an empirical analysis based on agency theory', *International business review*, 24(2), pp. 175-186.
- Mansournia, M.A., Nazemipour, M., Naimi, A.I., Collins, G.S., and Campbell, M.J. (2021) 'Reflection on modern methods: demystifying robust standard errors for

epidemiologists', *International journal of epidemiology*, 50(1), pp. 346–351. doi:10.1093/ije/dyaa260.

Marashdeh, Z., Saidat, Z., Alkhodary, D., and Al-Haddad, L. (2021) 'Agency theory and the Jordanian corporate environment: why a single theory is not enough', *Academy of accounting and financial studies journal*, 25(5), pp. 1–15.

Margret, J., and Peck, G. (2015), 'Fraud in financial statements', *Routledge*, London.

Margret, J.E., and Peck, G. (2014) 'Fraud in financial statements', *Routledge*, London.

Markelevich, A., and Rosner, R.L. (2013) 'Auditor fees and fraud firms', *Contemporary accounting research*, 30(4), pp. 1590–1625. doi: 10.1111/1911-3846.12013.

Martin, G.P., Wiseman, R.M., and Gomez-Mejia, L.R. (2019) 'The ethical dimension of equity incentives: a behavioral agency examination of executive compensation and pension funding', *Journal of business ethics*, 166(3), 595.

Masulis, R.W. and Mobbs, S. (2014) 'Independent director incentives: where do talented directors spend their limited time and energy?', *Journal of financial economics*, 111(2), pp. 406–429. doi:10.1016/j.jfineco.2013.10.011.

Mateos de Cabo, R., Gimeno, R., and Nieto, M.J. (2012) 'Gender diversity on European banks' boards of directors', *Journal of business ethics*, 109(2), 145–162. doi: 10.1007/s10551-011-1112-6.

McConvill, J. (2006) 'Executive compensation and corporate governance: rising above the pay-for-performance principle', *American business law journal*, 43(2), pp. 413–438.

McDonnell, T., and Doyle, O. (2019) 'Maternal employment and childcare during infancy and childhood overweight', *Social science and medicine*, 243, 112639-112639.

McGuinness, P.B., Lam, Kevin C. K, and Vieito, J.P. (2015) 'Gender and other major board characteristics in China: explaining corporate dividend policy and governance', *Asia Pacific journal of management*, 32(4), 989-1038.

McMillan, K.P. (2004) 'Trust and the virtues: a solution to the accounting scandals?', *Critical perspectives on accounting*, 15(6), pp. 943–953. doi:10.1016/j.cpa.2002.11.001.

Mcmullen, D., and Raghunandan, K. (1996) 'Enhancing audit committee effectiveness', *Journal of accountancy*, 182(2), p.79.

McSweeney, B. (2002) 'Hofstede's model of national cultural differences and their consequences: a triumph of faith - a failure of analysis', *Human relations (New York)*, 55(1), 89–118. doi: 10.1177/0018726702551004.

Mensi-Klarbach, H., Leixnering, S., and Schiffinger, M. (2021) 'The carrot or the stick: self-regulation for gender-diverse boards via codes of good governance', *Journal of business ethics*, 170(3), 577–593. doi: 10.1007/s10551-019-04336-z.

Meyer, J.W. (1977) 'The effects of education as an institution', *The American journal of sociology*, 83(1), 55–77. doi: 10.1086/226506.

Meyer, J.W., and Rowan, B. (1977) 'Institutionalized organizations: formal structure as myth and ceremony', *The American journal of sociology*, 83(2), 340-363.

Mihalyi, P., and Szelenyi, I. (2021) 'Kornai on the affinity of systems: is China today an illiberal capitalist system or a communist dictatorship?', *Public choice*, 187(1-2), 197–216. doi: 10.1007/s11127-020-00835-0.

Mills, D., Bradley, L., and Keast, R. (2021) 'NPG and stewardship theory: remedies for nrm privatization prescriptions', *Public management review*, 23(4), 501-522.

Minnick, K., and Zhao, M., (2009) 'Backdating and director incentives: money or reputation?', *Journal of financial research*, 32(4), pp. 449–477.

Mo, P. H. (2001) 'Corruption and economic growth', *Journal of comparative economics*, 29(1), 66–79. doi: 10.1006/jcec.2000.1703.

Murphy, K.J. (1985) 'Corporate performance and managerial remuneration: an empirical analysis', *Journal of accounting and economics*, 7(1), pp. 11–42.

Mukhlisin, M. (2018) 'Auditor tenure and auditor industry specialization as a signal to detect fraudulent financial reporting', *Academy of accounting and financial studies journal*, 22(5), pp. 1-10.

Mutlu, C., Van Essen, M., Peng, M.W., Saleh, S.F., and Duran, P. (2018) 'Corporate governance in China: a meta-analysis. *Journal of management studies*, 55(6), 943-979.

Nahar Abdullah, S. (2006) 'Directors' remuneration, firm's performance and corporate governance in Malaysia among distressed companies', *Corporate governance: the international journal of business in society*, 6(2), pp. 162–174.

NASDAQ equity rules (2019). Available from: http://nasdaq.cchwallstreet.com/NASDAQTools/PlatformViewer.asp?selectednode=chp_1_1_1_1&manual=%2Fnasdaq%2Fmain%2Fnasdaq-equityrules%2F. Accessed on 9 July 2019.

National commission on fraudulent financial reporting (1987) 'Report of the national commission on fraudulent financial reporting', Available from: <https://www.coso.org/Documents/NCFFR.pdf>; Accessed on: 30 January 2019.

- Nayar, V., Kampouris, I., and Sivitos, S. (2017) 'Outliers: the dangers of not being one of the pack', *Journal of investing*, 26(4), pp. 165–179. doi:10.3905/joi.2017.26.4.165.
- Ndofor, H.A., Wesley, C., and Priem, R. L. (2015) 'Providing CEOs with opportunities to cheat', *Journal of management*, 41(6), pp. 1774–1797.
- Nee, V., Opper, S., and Wong, S., (2007) 'Developmental state and corporate governance in China', *Management and organization review*, 3(1), pp.19–53.
- Neville, F., Byron, K., Post, C., and Ward, A. (2019), 'Board independence and corporate misconduct: a cross-national meta-analysis', *Journal of management*, 45(6), pp. 2538–2569.
- Nguyen, N. (2014) 'On the compensation and activity of corporate boards', *Journal of corporate finance*, 29, pp. 1-19.
- Nguyen, T. (2021) 'The effectiveness of white-collar crime enforcement: evidence from the war on terror', *Journal of accounting research*, 59(1), pp. 5–58. doi:10.1111/1475-679X.12343.
- Nicholson, G.J., and Kiel, G.C. (2007) 'Can Directors Impact Performance? A case-based test of three theories of corporate governance', *Corporate governance : an international review*, 15(4), pp. 585–608. doi:10.1111/j.1467-8683.2007.00590.
- Ndofor, H.A., Wesley, C., and Priem, R.L. (2015) 'Providing CEOs with opportunities to cheat', *Journal of management*, 41(6), pp. 1774–1797. doi:10.1177/0149206312471395.
- Ntim, C.G., Lindop, S., Osei, K.A., and Thomas, D.A. (2015) 'Executive compensation, corporate governance and corporate performance: a simultaneous equation approach', *Managerial and decision economics*, 36(2), pp. 67–96. doi:10.1002/mde.2653.
- NYSE Listed Company Manual (2019). Available from: <http://wallstreet.cch.com/LCMTools/PlatformViewer.asp?selectednode=chp%5F1%5F4&manual=%2F1cm%2Fsections%2F1cm%2Dsections%2F>. Accessed on: 9 July 2019.
- O'Connell, B., Webb, L., and Schwarzbach, H.R. (2005) 'Batten down the hatches! U.S. accounting scandals and lessons for Australia', *Australian accounting review*, 15(36), pp. 52–67. doi:10.1111/j.1835-2561.2005.tb00293.x.
- O'Connor, J.P., Priem, R.L., Coombs, J.E., and Gilley, K.M. (2006), 'Do CEO stock options prevent or promote fraudulent financial reporting?', *Academy of management journal*, 49(3), pp. 483-500.

- O’Riordan, L., and Fairbrass, J. (2008) ‘Corporate social responsibility (CSR): models and theories in stakeholder dialogue’, *Journal of business ethics*, 83(4), pp. 745–758. doi:10.1007/s10551-008-9662-y
- O’Connor, J., Priem, R., Coombs, J., and Gilley, K. (2006) ‘Do CEO stock options prevent or promote fraudulent financial reporting?’, *Academy of management journal*, 49 (3), pp. 483-500.
- OECD Corporate Governance Fact Book (2017), Available from: <https://www.oecd.org/daf/ca/Corporate-Governance-Factbook.pdf>; Accessed on: 16 January 2019.
- OECD Corporate Governance Fact Book (2019), Available from: <https://www.oecd.org/corporate/Corporate-Governance-Factbook.pdf>; Accessed on: 05 July 2019.
- O’Gara, J., and Ebrary, Inc. (2004) ‘Corporate fraud: case studies in detection and prevention’, Hoboken, N.J.
- O’Sullivan, M. (2001), ‘Contests for corporate control: corporate governance and economic performance in the United States and Germany’, *Oxford university press*. <https://doi.org/10.1093/0199244863.001.0001>
- Oswald, S.L., and Jahera, J.S. (1991) ‘The influence of ownership on performance: an empirical study’, *Strategic management journal*, 12(4), pp. 321–326.
- Pagano, M., and Immordino, G. (2012), ‘Corporate fraud, governance, and auditing’, *The review of corporate finance studies*, 1(1), pp. 109–133.
- Palmrose, Z.-V., Richardson, V.J., and Scholz, S. (2004), ‘Determinants of market reactions to restatement announcements’, *Journal of accounting & economics*, 37(1), pp. 59–89.
- Parsons, C.A., Sulaeman, J., and Titman, S. (2018) ‘The geography of financial misconduct’, *The journal of finance (New York)*, 73(5), 2087–2137. doi: 10.1111/jofi.12704.
- Patterson, E.R., Smith, J.R. and Tiras, S.L. (2019) ‘The effects of auditor tenure on fraud and its detection’, *The accounting review*, 94(5), pp. 297–318. doi:10.2308/accr-52370.
- Payne, A. (2006), ‘Corporate governance in the USA and Europe: they are closer than you might think’, *Corporate governance (Bradford)*, 6(1), 69–71.
- Peasnell, K., Pope, P., and Young, S. (2005), ‘Board monitoring and earnings management: do outside directors influence abnormal accruals?’, *Journal of business finance and accounting*, 32(7-8), pp. 1311–1346.
- Peng, L., and Röell, A. (2008), ‘Executive pay and shareholder litigation’, *Review of finance*, 12(1), pp. 141-184.

Peni, E., and Vähämaa, S. (2010), 'Female executives and earnings management', *Managerial finance*, 36(7), pp. 629-645.

Penman, S.H. (2003) 'The quality of financial statements: perspectives from the recent stock market bubble', *Accounting horizons*, 17, p. 77. doi:10.2139/ssrn.319262.

Pepper, A., and Gore, J. (2015) 'Behavioral agency theory', *Journal of management*, 41(4), pp. 1045–1068. doi:10.1177/0149206312461054.

Pereira, I.N. (2015) 'Top executive compensation in less developed capital markets', *Corporate governance*, 15 (1), pp. 122-133.

Perols, J.L., and Lougee, B.A. (2011) 'The relation between earnings management and financial statement fraud', *Advances in accounting, incorporating advances in international accounting*, 27(1), pp. 39–53.

Perry, T. (2000) 'Incentive compensation for outside directors and CEO turnover. Presented at Tuck-JFE *Contemporary corporate governance conference*', Available from: <https://ssrn.com/abstract=236033> or <http://dx.doi.org/10.2139/ssrn.236033>. Accessed on 12 August 2019.

Persons, O. S. (2012) 'Stock option and cash compensation of independent directors and likelihood of fraudulent financial reporting', *Journal of business & economic studies*, 18(1), 54-74.

Petrou, A.P., and Procopiou, A. (2016) 'CEO shareholdings and earnings manipulation: a behavioral explanation', *European management review*, 13, pp. 137-148. doi: 10.1111/emre.12073.

Pinto, A. (2010), 'An overview of United States corporate governance in publicly traded corporations', *The American journal of comparative law*, 58(1), 257–283.

Post, C., and Byron, K., (2015) 'Women on boards and firm financial performance: a meta-analysis', *Academy of management journal*, 58(5), pp. 1546–1571.

Price, M., Harvey, C., Maclean, M., and Campbell, D. (2018) 'From Cadbury to Kay: discourse, intertextuality and the evolution of UK corporate governance', *Accounting, auditing & accountability journal*, 31(5), pp. 1542-1562.

Pyzoza, J.S., and Jenkins, J.G., (2019) 'The influence of auditor quality and executive compensation structure on financial reporting executives' restatement decisions in a clawback environment', *Current issues in auditing*, 13(1), P28–P36.

Qian, X., and Smyth, R. (2008) 'Measuring regional inequality of education in China', *Journal of international development*, 20(2), 132–144. doi:10.1002/jid.1396

- Rajgopal, S., and Shevlin, T. (2002) 'Empirical evidence on the relation between stock option compensation and risk taking', *Journal of accounting and economics*, 33(2), pp. 145–171.
- Ralston, D.A, Terpstra-Tong, J., Terpstra, R.H., Wang, X., and Egri, C. (2006) 'Today's state-owned enterprises of China: are they dying dinosaurs or dynamic dynamos?', *Strategic management journal*, 27(9), pp. 825–843. doi:10.1002/smj.545.
- Rashid, A. (2015) 'Revisiting agency theory: evidence of board independence and agency cost from Bangladesh', *Journal of business ethics*, 130(1), pp. 181–198. doi:10.1007/s10551-014-2211-y.
- Reeb, D., Sakakibara, M., and Mahmood, I.P. (2012) 'From the editors: endogeneity in international business research', *Journal of international business studies*, 43(3), pp. 211–218. doi:10.1057/jibs.2011.60.
- Reeb, D.M., and Zhao, W. (2013) 'Director capital and corporate disclosure quality', *Journal of accounting and public policy*, 32(4), 191–212. doi: 10.1016/j.jaccpubpol.2012.11.003.
- Rest, J.R., and Thoma, S.J. (1985) 'Relation of moral judgment development to formal education', *Developmental psychology*, 21(4), 709–714. doi: 10.1037/0012-1649.21.4.709.
- Rezaee, Z. (2005) 'Causes, consequences, and deterrence of financial statement fraud', *Critical perspectives on accounting*, 16(3), pp. 277–298. doi:10.1016/S1045-2354(03)00072-8.
- Roberts, J. (2010) 'Designing incentives in organizations', *Journal of institutional economics*, 6(1), pp. 125–132. doi:10.1017/S1744137409990221.
- Roberts, M.R., and Whited, T.M. (2013) 'Chapter 7 - Endogeneity in Empirical Corporate Finance' in George M. Constantinides, Milton Harris, Rene M. Stulz (eds). *Handbook of the economics of finance*, Elsevier, pp. 493-572. ISSN 1574-0102, ISBN 9780444535948, <https://doi.org/10.1016/B978-0-44-453594-8.00007-0>.
- Romano, G. and Guerrini, A. (2012) 'Corporate governance and accounting enforcement actions in Italy', *Managerial auditing journal*, 27 (7), pp. 622-638.
- Rose, J.M., Mazza, C.R., Norman, C.S., and Rose, A.M. (2013) 'The influence of director stock ownership and board discussion transparency on financial reporting quality', *Accounting, organizations and society*, 38(5), pp. 397–405.
- Rosenbaum, P.R., and Rubin, D.B. (1983) 'The central role of the propensity score in observational studies for causal effects', *Biometrika*, 70(1), pp. 41–55. doi:10.1093/biomet/70.1.41.
- Rosen, S. (1990) 'Contracts and the Market for Executives', *NBER working paper series*, p. 3542.

- Rosner, R. (2003) 'Earnings manipulation in failing firms', *Contemporary accounting research*, 20(2), pp. 361-408.
- Rouault, J., and Albertini, E. (2022) 'Reconciling the social sector with external accountability requirements: lessons from stewardship theory', *Journal of business research*, 142, pp. 485–498. doi:10.1016/j.jbusres.2021.12.082.
- Roz, C. (2004) 'UK firms caught in the net as US tightens corporate regulation law', *Personnel today*, p. 1.
- Rubach, M.J., and Seborá, T.C. (1998) 'Comparative corporate governance: competitive implications of an emerging convergence', *Journal of world business*, 33(2), pp.167–184.
- Ryan, H.E., and Wiggins, R.A. (2004) 'Who is in whose pocket? Director compensation, board independence, and barriers to effective monitoring', *Journal of financial economics*, 73 (3), pp. 497-524.
- Ryan, H.E., and Wiggins, R.A. (2001), 'The influence of firm- and manager-specific characteristics on the structure of executive compensation', *Journal of corporate finance (Amsterdam, Netherlands)*, 7(2), 101-123.
- Saeed, A., Belghitar, Y., and Yousaf, A. (2016) 'Firm-level determinants of gender diversity in the boardrooms: evidence from some emerging markets', *International business review*, 25(5), 1076–1088. doi: 10.1016/j.ibusrev.2016.01.002
- Saith, A. (2011) 'Inequality, imbalance, instability: reflections on a structural crisis. *Development and Change*, 42(1), 70–86. doi:10.1111/j.1467-7660.2011.01705.x.
- Sakawa, H., Moriyama, K., and Watanabel, N. (2012) 'Relation between top executive compensation structure and corporate governance: evidence from Japanese public disclosed data', *Corporate governance: an international review*, 20(6), pp. 593-608.
- Saunders, M., Lewis, P., and Thornhill, A. (2015) 'Research Methods for Business Students PDF', Harlow: Pearson Education, Limited.
- Saunders, M.N.K., Lewis, P., and Thornhill, A. (2019) 'Research methods for business students', Eighth edition. Pearson.
- Schillemans, T., and Bjurstrøm, K.H. (2020) 'Trust and verification: balancing agency and stewardship theory in the governance of agencies', *International public management journal*, 23(5), pp. 650–676. doi:10.1080/10967494.2018.1553807.
- Schilling, F. (2001) 'Corporate governance in Germany: the move to shareholder value', *Corporate governance: an international review*, 9(3), pp. 148-151.

Scott, W.R. (1987) 'The adolescence of institutional theory', *Administrative science quarterly*, 32(4), 493-511.

Seamer, M., and Melia, A. (2015) 'Remunerating non-executive directors with stock options: who is ignoring the regulator?', *Accounting research journal*, 28 (3), pp. 251-267.

SEC (2002a) 'SEC charges fastow, former Enron CFO, with fraud', Available from: <https://www.sec.gov/news/press/2002-143.htm>; Accessed on 29 May 2022.

SEC (2002b) 'SEC Charges Adelphia and Rigas family with massive financial fraud', Available from: <https://www.sec.gov/news/press/2002-110.htm>; Accessed on 29 May 2022.

SEC (2002c) 'XEROX settles SEC enforcement action charging company with fraud; XEROX to pay largest financial fraud penalty ever against public company', Available from: <https://www.sec.gov/news/press/2002-52.txt>; Accessed on 29 May 2022.

SEC (2002d) 'Waste Management founder and five other former top officers sued for massive fraud; Defendants inflated profits by \$1.7 billion to meet earnings targets; Defendants reap millions in ill-gotten gains while defrauded investors lose more than \$6 billion', Available from: <https://www.sec.gov/news/press/2002-44.txt>; Accessed on 29 May 2022.

SEC (2006) 'AIG to pay \$800 million to settle securities fraud charges by SEC', Available from: <https://www.sec.gov/news/press/2006-19.htm>; Accessed on 1 February 2019.

SEC (2020) 'Luckin Coffee agrees to pay \$180 million penalty to settle accounting fraud charges'. Available from: <https://www.sec.gov/news/press-release/2020-319>; Accessed on 29 May 2022.

Shapiro, S.P. (2005) 'Agency theory', *Annual review of sociology*, 31(1), pp. 263–284. doi:10.1146/annurev.soc.31.041304.122159.

Sharma, V.D. (2004) 'Board of director characteristics, institutional ownership, and fraud: evidence from Australia', *Auditing: a journal of practice and theory*, 23(2), pp. 105–117. doi:10.2308/aud.2004.23.2.105

Shi, W., Aguilera, R., and Wang, K., (2020) 'State ownership and securities fraud: a political governance perspective' *Corporate governance: an international review*, 28(2), 157–176.

Shi, W., Connelly, B.L., and Hoskisson, R.E. (2017) 'External corporate governance and financial fraud: cognitive evaluation theory insights on agency theory prescriptions', *Strategic management journal*, 38(6), 1268–1286. doi: 10.1002/smj.2560.

- Shieh, G., and Jan, S.-L. (2014) 'Optimal sample size allocation for Welch's test in one-way heteroscedastic ANOVA', *Behavior research methods*, 47(2), 374–383. doi:10.3758/s13428-014-0477-8.
- Shipman, J.E., Swanquist, Q.T., and Whited, R.L. (2017) 'Propensity score matching in accounting research', *The accounting review*, 92(1), pp. 213–244. doi:10.2308/accr-51449.
- Shivdasani, A., and Yermack, D. (1999) 'CEO involvement in the selection of new board members: an empirical analysis', *The Journal of finance (New York)*, 54(5), pp. 1829–1853. doi:10.1111/0022-1082.00168.
- Shleifer, A., and Vishny, R. W. (1997) 'A survey of corporate governance', *The journal of finance*, 52, pp. 737–783.
- Shleifer, A., and Vishny, R.W. (1991) 'Takeovers in the '60s and the '80s: evidence and implications', *Strategic management journal*, 12(S2), pp. 51–59. doi:10.1002/smj.4250121005.
- Shyu, Y.W., and Lee, C.I. (2009) 'Excess control rights and debt maturity structure in family-controlled firms', *Corporate governance: an international review*, 17(5), 611–628.
- Siepel, J., and Nightingale, P. (2014) 'Anglo-American governance: similarities, difference and outcomes in a financialised world', *Critical perspectives on accounting*, 25(1), pp. 27-35.
- Sivakumar, K., and Nakata, C. (2001) 'The stampede toward Hofstede's framework: avoiding the sample design pit in cross-cultural research. *Journal of international business studies*, 32(3), 555–574. doi: 10.1057/palgrave.jibs.8490984
- Smith, C.W., and Stulz, R.M. (1985) 'The determinants of firms' hedging policies', *The journal of financial and quantitative analysis*, 20(4), pp. 391–405.
- Smith, P.B. (2006) 'When elephants fight, the grass gets trampled: the globe and Hofstede projects. *Journal of international business studies*, 37(6), 915–921. doi: 10.1057/palgrave.jibs.8400235.
- Snippert, T., Witteveen, W., Boes, H., and Voordijk, H. (2015) 'Barriers to realizing a stewardship relation between client and vendor: the best value approach', *Construction management and economics*, 33(7), 569-586.
- Solomon, S.J., Bendickson, J.S., Marvel, M.R., McDowell, W.C., and Mahto, R. (2021) 'Agency theory and entrepreneurship: a cross-country analysis', *Journal of business research*, 122, pp.466-476
- Song, G., Liu, J., Qiao, W., Chen, Y., Sun, L., and Ren.W. (2016) 'Regression equations of Z score and echocardiographic nomograms for coronary sinus in healthy children', *International journal of cardiovascular imaging*, 32(12), pp. 1687–1695. doi:10.1007/s10554-016-0960-7

- Song, S., Van Hoof, H.B., and Park, S. (2017) 'The impact of board composition on firm performance in the restaurant industry: a stewardship theory perspective', *International journal of contemporary hospitality management*, 29(8), pp. 2121–2138. doi:10.1108/IJCHM-05-2016-0283.
- Sorensen, D.P., and Miller, S.E. (2017), 'Financial accounting scandals and the reform of corporate governance in the United States and in Italy', *Corporate governance (Bradford)*, 17(1), pp. 77–88.
- Spathis, C.T. (2002) 'Detecting false financial statements using published data: some evidence from Greece', *Managerial auditing journal*, 17(4), 179–191. doi: 10.1108/02686900210424321.
- Srinidhi, B., Gul, F., and Tsui, J. (2011)', 'Female directors and earnings quality', *Contemporary accounting research*, 28, pp. 1610–1644.
- Statista (2021), 'Largest stock exchange operators worldwide as of August 2021, by market capitalization of listed companies', Available from: <https://www.statista.com/statistics/270126/largest-stock-exchange-operators-by-market-capitalization-of-listed-companies/#:~:text=The%20New%20York%20Stock%20Exchange,Exchange%20and%20Hong%20Kong%20Exchanges>. Accessed on 26 August 2021.
- Stuart, T., and Wang, Y. (2016) 'Who cooks the books in China, and does it pay? Evidence from private, high-technology firms', *Strategic management journal*, 37(13), pp. 2658–2676. doi:10.1002/smj.2466.
- Summers, S.L., and Sweeney, J.T. (1998) 'Fraudulently misstated financial statements and insider trading: an empirical analysis', *The accounting review*, 73(1), pp. 131–146.
- Sun, J., Qi, B., Kent, P., and Wang, J., (2017) 'Chief financial officer demographic characteristics and fraudulent financial reporting in China', *Accounting and finance*, pp. 1-30.
- Sundaramurthy, C., and Lewis, M. (2003) 'Control and collaboration: paradoxes of governance', *The academy of management review*, 28(3), 397-415.
- Sutherland, E.H. (1949) 'White collar crime', Dryden Press.
- Sweeney, A.P. (1994) 'Debt-covenant violations and managers' accounting responses', *Journal of accounting & economics*, 17(3), 281–308. doi: 10.1016/0165-4101(94)90030-2.
- Talha, M., Sallehuddin, A., and Masuod, M. S. (2009) 'Corporate governance and directors' remuneration in selected ASEAN countries', *Journal of applied business research (JABR)*, 25(2), pp. 31-40.
- Tam, O. (2002) 'Ethical issues in the evolution of corporate governance in China', *Journal of business ethics*, 37(3), pp.303–320.

- Tang, N.-S., Tang, M.-L., and Chan, I.S.F. (2003) 'On tests of equivalence via non-unity relative risk for matched-pair design', *Statistics in medicine*, 22(8), pp. 1217–1233. doi:10.1002/sim.1213.
- Tang, X., Du, J., and Hou, Q. (2013) 'The effectiveness of the mandatory disclosure of independence directors' opinions: empirical evidence from China', *Journal of accounting and public policy*, 32 (3), 89–125.
- Teoh, S. H., Welch, I., and Wong, T. (1998) 'Earnings management and the underperformance of seasoned equity offerings', *Journal of financial economics*, 50(1), 63–99. doi: 10.1016/S0304-405X(98)00032-4.
- Terjesen, S., Sealy, R., and Singh, V. (2009) 'Women directors on corporate boards: a review and research agenda', *Corporate governance: an international review*, 17(3), 320–337. doi: 10.1111/j.1467-8683.2009.00742.x.
- Tolbert, P.S., David, R.J., and Sine, W.D. (2011) 'Studying choice and change: the intersection of institutional theory and entrepreneurship research', *Organization science (Providence, R.I.)*, 22(5), pp. 1332–1344. doi:10.1287/orsc.1100.0601.
- Tosi, H., Werner, S., Katz, J., and Gomez-Mejia, L. (2000) 'How much does performance matter? a meta-analysis of ceo pay studies', *Journal of management*, 26(2), pp. 301–339. doi:10.1177/014920630002600207.
- Tosun, O.K., and Senbet, L.W. (2019) 'Does internal board monitoring affect debt maturity?', *Review of quantitative finance and accounting*, 54(1), pp. 205–245. doi:10.1007/s11156-018-00787-z.
- Treisman, D. (2000) 'The causes of corruption: a cross-national study', *Journal of public economics*, 76(3), 399–457. doi: 10.1016/S0047-2727(99)00092-4.
- Trompeter, G., Carpenter, T., Jones, K., and Riley, R. (2014) 'Insights for research and practice: what we learn about fraud from other disciplines', *Accounting horizons*, 28(4), pp. 769-804.
- Trowbridge, A.B. (1989) 'Arbitration in our litigious society', *Dispute resolution journal*, 44(3), p. 58.
- Troy, C., Smith, K.G., and Domino, M.A. (2011) 'CEO demographics and accounting fraud: who is more likely to rationalize illegal acts', *Strategic organization*, 9(4), 259–282. doi: 10.1177/1476127011421534.
- Tuliao, K.V., and Chen, C. (2019) 'Economy and supervisors' ethical values: exploring the mediating role of noneconomic institutions in a cross-national test of institutional anomie theory. *Journal of business ethics*, 156(3), 823–838. doi: 10.1007/s10551-017-3620-5.
- Tuschke, A., and Sanders, G. (2003) 'Antecedents and consequences of corporate governance reform: The case of Germany', *Strategic management journal*, 24 (7), pp. 631–649.

- Uhlaner, L.M., van Goor-Balk, H.J.M., and Masurel, E. (2004) 'Family business and corporate social responsibility in a sample of Dutch firms', *Journal of small business and enterprise development*, 11(2), pp. 186–194. doi:10.1108/14626000410537128.
- Ullah, S., Ahmad, S., Akbar, S., and Kodwani, D. (2019) 'International evidence on the determinants of organizational ethical vulnerability', *British journal of management*, 30(3), pp. 668–691.
- Upadhyay, A., and Zeng, H. (2014) 'Gender and ethnic diversity on boards and corporate information environment', *Journal of business research*, 67(11), 2456–2463. doi: 10.1016/j.jbusres.2014.03.005.
- Uzun, H., Szewczyk, S.H., and Varma, R. (2004), 'Board composition and corporate fraud', *Financial analysts journal*, 60(3), pp. 33–43.
- Van Der Zahn, J-L. W. M., Singh, I., and Brown, A. (2005) 'Intellectual capital performance and cash-based incentive payments for executive directors: Impact of remuneration committee and corporate governance features', *Corporate board: role*, 1(3), pp. 29–45.
- Vilanova, L. (2007) 'Neither shareholder nor stakeholder management: what happens when firms are run for their short-term salient stakeholder?', *European management journal*, 25(2), pp. 146–162. doi:10.1016/j.emj.2007.01.002.
- Von Rosen, R. (2007) 'Corporate governance in Germany', *Journal of financial regulation and compliance*, 15(1), pp. 30–41.
- Wahid, A.S. (2019) 'The effects and the mechanisms of board gender diversity: evidence from financial manipulation', *Journal of business ethics*, 159(3), pp. 705–725.
- Wang, G., DeGhetto, K., Ellen, B.P., and Lamont, B.T. (2019) 'Board antecedents of ceo duality and the moderating role of country-level managerial discretion: a meta-analytic investigation', *Journal of management studies*, 56(1), pp. 172–202. doi:10.1111/joms.12408.
- Wang, J., and Song, H. (2019) 'Sino-US trade war, the principle of competitive neutrality and the reform of China's state-owned enterprises', *Transnational corporations review*, 11(4), pp. 298–309. doi:10.1080/19186444.2019.1694809.
- Wang, L. (2015) 'Protection or expropriation: politically connected independent directors in China', *Journal of banking & finance*, 55, pp. 92–106. doi:10.1016/j.jbankfin.2015.02.015.
- Wang, P., Kuah, A.T.H., Qinye, L., Caroline, W., Thirumaran, K., Adegbite, E., and Kendall, W. (2021) 'The impact of value perceptions on purchase intention of sustainable luxury brands in China and the UK', *The journal of brand management*, 28(3), pp. 325–346. doi:10.1057/s41262-020-00228-0

- Wang, T.Y. (2013), 'Corporate securities fraud: insights from a new empirical framework', *Journal of Law, Economics, & Organization*, 29(3), pp. 535–568.
- Wang, Y., Ashton, J.K., and Jaafar, A. (2019) 'Does mutual fund investment influence accounting fraud?', *Emerging markets review*, 38, pp. 142–158. doi:10.1016/j.ememar.2018.12.005.
- Wang, Y., Yu, M., and Gao, S. (2022) 'Gender diversity and financial statement fraud', *Journal of accounting and public policy*, 41(2), p. 106903. doi:10.1016/j.jaccpubpol.2021.106903.
- Wang, Z., Chen, M.- H., Chin, C.L., and Zheng, Q. (2017) 'Managerial ability, political connections, and fraudulent financial reporting in China', *Journal of accounting and public policy*, 36(2), pp. 141–162. doi:10.1016/j.jaccpubpol.2017.02.004.
- Warne, R.T., Lazo, M., Ramos, T., and Ritter, N. (2012) 'Statistical methods used in gifted education journals, 2006-2010', *The gifted child quarterly*, 56(3), pp. 134–149. doi:10.1177/0016986212444122.
- Weisbach, M.S. (1988) 'Outside directors and CEO turnover', *Journal of financial economics*, 20(C), pp. 431–460.
- Wintoki, M.B., and Xi, Y. (2019) 'Friendly directors and the cost of regulatory compliance', *Journal of corporate finance (Amsterdam, Netherlands)*, 58, pp. 112–141. doi:10.1016/j.jcorpfin.2019.04.011.
- Wong-On-Wing, B., and Lui, G. (2007) 'Culture, implicit theories, and the attribution of morality', *Behavioral research in accounting*, 19(1), 231–246. doi: 10.2308/bria.2007.19.1.231.
- World Bank (2020). Available from: <https://data.worldbank.org/indicator>. Accessed on March 31, 2020.
- Wright, M. (1995) 'Can moral judgement and ethical behaviour be learned? A review of the literature', *Management decision*, 33(10), 17–28. doi: 10.1108/00251749510100212.
- Wright, P., Kroll, M., and Elenkov, D., (2002) 'Acquisition returns, increase in firm size, and chief executive officer compensation: the moderating role of monitoring', *The academy of management journal*, 45(3), pp.599–608.
- Wu, H.-L. (2008) 'When does internal governance make firms innovative?', *Journal of business research*, 61(2), pp. 141–153. doi:10.1016/j.jbusres.2007.06.010.
- Wu, W., Johan, S.A., and Rui, O.M. (2016) 'Institutional investors, political connections, and the incidence of regulatory enforcement against corporate fraud', *Journal of business ethics*, 134(4), 709-726.

- Wu, W., Wu, C., Zhou, C., and Wu, J. (2012) 'Political connections, tax benefits and firm performance: evidence from China', *Journal of accounting and public policy*, 31(3), 277–300. doi:10.1016/j.jaccpubpol.2011.10.005.
- Xu, C. (2011) 'The fundamental institutions of China's reforms and development. *Journal of economic literature*, 49(4), 1076–1151. doi:10.1257/jel.49.4.1076.
- Xu, Y., Zhang, L., and Chen, H. (2018) 'Board age and corporate financial fraud: an interactionist view', *Long range planning*, 51(6), pp. 815–830.
- Yang, J., Huang, X., and Liu, X. (2014) 'An analysis of education inequality in China', *International journal of educational development*, 37, 2–10. <https://doi.org/10.1016/j.ijedudev.2014.03.002>
- Yang, R., and Yang, J. (2009) 'Why has top executive compensation increased so much in china: a explanation of peer-effects', *Pacific economic review*, 14(5), 705–716
- Ye, K. (2014) 'Independent director cash compensation and earnings management,' *Journal of accounting and public policy*, 33(4), pp.391–400.
- Yermack, D. (1997) 'Good timing: CEO stock option awards and company news announcements,' *Journal of finance*, 52(2), pp. 449–476.
- Yermack, D. (2004), 'Remuneration, retention, and reputation incentives for outside directors', *Journal of finance*, 59(5), pp. 2281–2308.
- Ying, T., Wright, B., and Huang, W. (2017) 'Ownership structure and tax aggressiveness of Chinese listed companies', *International journal of accounting and information management*, 25(3), 313–332.
- You, J.-S., and Khagram, S. (2005) 'A comparative study of inequality and corruption. *American sociological review*, 70(1), 136–157. doi: 10.1177/000312240507000107.
- Young, M.N., Peng, M.W., Ahlstrom, D., Bruton, G.D., and Jiang, Y. (2008) 'Corporate governance in emerging economies: a review of the principal-principal perspective. *Journal of management studies*, 45(1), 196–220.
- Yu, F. (2018) 'China's financial-fraud problem. Epoch times', Available from: https://www.theepochtimes.com/chinas-financial-fraud-problem_2655466.html. Accessed on 25 July 2019.
- Yu, X., Zhang, P., and & Zheng, Y. (2015) 'Corporate governance, political connections, and intra-industry effects: evidence from corporate scandals in China', *Financial management*, 44(1), 49–80.
- Yuan, R., and Wen, W. (2018) 'Managerial foreign experience and corporate innovation', *Journal of corporate finance (Amsterdam, Netherlands)*, 48, pp. 752–770. doi:10.1016/j.jcorpfin.2017.12.015.

- Zalewska, A. (2014) 'Challenges of corporate governance: Twenty years after Cadbury, ten years after Sarbanes–Oxley', *Journal of empirical finance*, 27(C), pp. 1–9.
- Zaman, R., Atawnah, N., Baghdadi, G.A., and Liu, J. (2021) 'Fiduciary duty or loyalty? Evidence from co-opted boards and corporate misconduct', *Journal of corporate finance (Amsterdam, Netherlands)*, 70, p. 102066. doi:10.1016/j.jcorpfin.2021.102066.
- Zhang, L., Zhang, Z., Jia, M., and Ren, Y. (2017) 'Do outside directors matter? the impact of prestigious CEOs on firm performance', *Chinese management studies*, 11(2), pp. 284–302. doi:10.1108/CMS-10-2016-0199.
- Zhang, M., Gao, S., Guan, X., and Jiang, F. (2014) 'Controlling shareholder-manager collusion and tunneling: evidence from China', *Corporate governance: an international review*, 22(6), 440-459.
- Zhang, X., Bartol, K.M., Smith, K.G., Pfarrer, M.D., and Khanin, D.M. (2008) 'CEOs on the edge: earnings manipulation and stock-based incentive misalignment. *The academy of management journal*, 51(2), pp. 241-258.
- Zhizhong, H., Juan, Z., Yanzhi, S., and Wenli, X. (2011) 'Does corporate governance affect restatement of financial reporting? Evidence from China', *Nankai business review international*, 2(3), 289-302.
- Zhou, F., Zhang, Z., Yang, J., Su, Y., and An, Y. (2018) 'Delisting pressure, executive compensation, and corporate fraud: evidence from China', *Pacific-basin finance journal*, 48, 17-34.