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# Essays on Accounting Information Quality in China

## Abstract

This research contributes to provide a better understanding of the nature of accounting information reliability by measuring the relation between the informativeness of earnings and corporate governance based on the Chinese context with its unique political, social, cultural and economic environment and large sample size. In particular, mainland China has a distinct two-tier board structure comprising a supervisor board including employee representatives and board of directors of whom at least one third are independent directors. The objective of this thesis is to investigate accounting information reliability and corporate governance by addressing three predominant empirical research questions in three studies. The first study examines the impact of board composition and independence on earnings management in mainland China through investigating whether independent directors and supervisors are effective at restraining earnings management. To fully capture the earnings attributes, the second study investigates the quality of reported earnings in China from the perspective of both accounting-based (including accrual quality, persistence, predictability and smoothness) and market-based earnings attributes (including value relevance, timeliness, and conservatism and earnings response coefficient). A two-way test has been conducted to compare the difference in earnings quality between State-Owned and Non-State-Owned enterprises. According to financial distress theory, the incentives for Non-SOEs to manipulate earnings are stronger than in SOEs, since SOEs have the advantage to receive financial subsidies from government while Non-SOEs face more financing constraints. The agency theory, however, argues that state ownership in SOEs creates incentives and regulatory backing for self-serving purposes, thus motivating SOEs to manipulate accounting numbers. The political cost hypothesis complements the agency theory and illustrates that SOEs' managers would manipulate accounting numbers in response to government intervention (report conservatively to disguise the profits or report aggressively to meet specific thresholds). In addition, it tests whether analysts' forecasts are more accurate than forecasts based on time-series predicted statistics with random walk. Finally, the third empirical study detects whether managers intend to manipulate earnings via discretionary accruals in order to just meet or beat consensus analyst forecasts on the basis of earnings surprise (analyst forecast error).

The key findings of the first study in this thesis suggest that the distinct Chinese two-tier board structure comprising independent directors and supervisory directors fails to mitigate earnings management. The second study documents that Chinese SOEs overall exhibit a lower earnings quality than Non-SOEs, supporting the agency theory. Government ownership might create incentives and regulatory backing for self-serving purposes that negatively influence the listed firms' financial reporting. Moreover, SOEs manipulate downwards the earnings much more than Non-SOEs, manifesting the government generally expropriate the benefits of SOEs, according to the political cost hypothesis. One interesting finding in second study is that predicted earnings based on the time-series statistical model with drift are more accurate than the consensus analyst forecast. This result conflicts with findings from developed country studies, indicating the malfunction of financial analysts in mainland China. In the third empirical study, the findings suggest an optimistic bias in analysts' forecasts exists in Chinese listed companies but fail to provide any evidence supporting that discretionary accrual measures are positively associated with just meeting or beating the analysts' forecast benchmark. It challenges the 'benchmark beating' incentive in most prior literature based on western developed countries, such as the US and the UK.

# **Essays on Accounting Information Quality in China**

*by*

LIJUAN XIAO

*A thesis submitted for the degree of Doctor of Philosophy*

*Supervisors*

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September, 2015

仅以此文献给我深爱的父母和丈夫以及我挚爱的女儿

*I dedicate this work to my great parents and my beloved husband and daughter.*

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## List of Acronyms

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CSRC	: China Securities Regulatory Commission
EMH	: The Efficient Market Hypothesis
EPS	: Earnings Per Share
ERC	: Earnings Response Coefficient
IFRS	: International Financial Reporting Standards
FASB	: The Financial Accounting Standards Board
GAAP	: The Generally Accepted Accounting Principles
IASB	: The International Accounting Standards Board
IASC	: International Accounting Standards Committee
IPO	: Initial Public Offering(s)
SAMB	: State Assets Management Bureau
SASAC	: State-owned Assets Supervision and Administration Commission
SOEs	: State-owned Enterprises
SSE	: Shanghai Stock Exchange
SZSE	: Shenzhen Stock Exchange
MOF	: Ministry of Finance
Non-SOEs	: Non-state-owned Enterprises

## **Declaration**

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I declare that this thesis is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person, except where due acknowledgement has been made in the text. I confirm that no part of the material presented in this thesis has previously been submitted by me or any other person for a degree in this or any other institution.

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*Lijuan Xiao, September 2015. Durham, UK.*

# Acknowledgement

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# **Chapter 1 Introduction**

# Chapter 1

## Introduction

### 1.1. Background and Context

#### 1.1.1. Accounting Information Reliability

Information has the quality of reliability when it is free from material error and bias and can be depended upon by users to be a faithful representation (The Conceptual Framework, 1989). Ronen and Yaari (2008) generalize the value of accounting information as ‘informativeness’ (from investors’ demand) and ‘stewardship’ (from management and shareholders’ demand). Reported earnings are valuable when they convey useful information and generate economic consequences. The relevance of economic constructs and measurement attributes represented by accounting information is a prerequisite for reliability (Maines and Wahlen, 2006). Thus, reliability is a necessary but not sufficient condition for accounting information to be useful. Financial transparency and adequate information disclosure are crucial to developing countries. Sufficient, accurate and timely information regarding the firm’s operations, its financial status and the external environment is important, enabling shareholders to monitor the firm, to make investment decisions affecting the firm, and to exercise control over the firm through other means (Bushman and Smith, 2001). From the perspective of information economics, financial reporting plays a vital role in an efficient capital market. The primary accounting standard setting bodies such as the Financial Accounting Standards Board (FASB) and the International Accounting Standards Committee (IASC) have adopted this investor oriented information usefulness perspective and specifically state that the main purpose of accounting information is to meet the requirements of capital markets (FASB, 1978; IASC, 1994). Consequently, the primary target of Chinese accounting reform is to improve the reliability of financial reporting to meet the demands from the stock market (Winkle et al., 1994; Xiang, 1998; Chen et al., 1999). Since fluctuations in stock prices generally are caused by information, a critical aspect of a capital market’s maturity is the question of transparency. The globalization of capital markets increases the demand for transparent and comparable financial accounting information around the world. Bushman et al. (2001) define *corporate transparency* as the widespread availability of relevant, reliable information about the periodic performance, financial position, investment opportunities, governance, value, and risk of publicly listed firms.

Black et al. (2000) propose that corporate governance structures serve to ensure that minority shareholders receive reliable information about firm value and that a company's managers and majority shareholders do not cheat them out of the value of their investments, and to motivate managers to maximize firm value rather than pursuing their private objectives. Financial accounting information is the product of corporate accounting and external reporting systems that measure and routinely disclose audited, quantitative data regarding the financial position and performance of publicly held firms. Hence, the credibility of financial accounting information is a key component of the corporate governance process. A complex set of institutions and rules have evolved to facilitate the financial reporting process, and the information provided by this process is an important input to major governance mechanisms. Timely and conservative accounting, for example, can mitigate the agency problems stemming from information asymmetry between firms and investors (Ball et al., 2000). Even when there is no agency conflict between managers and investors, high-quality accounting information will enhance efficiency by enabling managers and investors to identify value creation opportunities with less error. This leads directly to more accurate allocation of capital; further helps reduce the cost of capital and contribute to economic performance. Ball (2001) argues that timely incorporation of economic losses in the published financial statements (that is, conservatism) increases the effectiveness of corporate governance.

Reported earnings (Income) are composed of accruals and cash flows. The reliability of accounting information depends critically on the credibility of accruals, which is one of the focal points of the extensive literature on earnings management because the reported earnings are always the object to be managed or manipulated. Understanding the reason why earnings are managed is vitally important to both analytical and empirical research. Total accruals are generally separated into a discretionary component and a non-discretionary component. Xie (2001) indicates that discretionary accruals are less persistent than non-discretionary accruals. Dechow and Dichev (1995) decompose accruals into good accruals and bad accruals. They argue that 'good' accruals are those that match past, present, or future cash flows and 'bad' accruals are the result of estimation error or corrections of previous estimation errors. Accrual accounting creates the opportunity for earnings management because they require managers to make forecasts, estimates, and judgments. It implies that the greater the degree of discretion in the accruals, the greater the opportunity for earnings management. For instance, short-run income smoothing leads to future restatements and write-downs (e.g., Enron). Earnings quality can be improved when accruals smooth out value-irrelevant changes in cash



flows, but reduced when accruals are used to hide value-relevant changes in cash flows. The ‘smoothing effect’ of accruals moves earnings closer to or farther from permanent earnings (Dechow and Schrand, 2004).

The explicit objective of International Accounting Standard Board (IASB) is to develop a set of ‘high quality’ accounting standards. Penman and Zhang (2002) deem high-quality earnings as sustainable earnings and regard it as a good indicator of future earnings. A high-quality earnings number (referring to it as persistent and permanent earnings), as defined in Dechow and Schrand (2004), will accurately reflect the fundamental intrinsic value of firms; will reflect current operating performance; and will be a good indicator of future operating performance. Ball and Shivakumar (2008) propose that high-quality earnings are conservative, while low-quality earnings are upwardly managed earnings. Consistent with Ronen and Yaari (2008), Chaney et al. (2011) also document that when the reported earnings convey useful information, they are considered as a primary indicator of information quality. Adapted from the Statement of Financial Accounting Concepts No. 1 (SFAC No. 1), Dechow et al. (2010, p.344) identify that ‘Higher quality earnings provide more information about the features of a firm’s financial performance that are relevant to a specific decision made by a specific decision-maker.’ It implies that the quality of reported earnings is a function of both the ability of the accounting system to evaluate the firm’s fundamental financial performance and how the accounting system is implemented.

Reliability in conjunction with relevance is an essential characteristic for accounting information to be useful for decision making to investors, creditors, and other financial statement users. It represents the extent to which the information is unbiased, free from error, and representationally faithful (FASB, 1980). Despite the critical role of reliability, it is a complex and elusive construct of accounting information. It is difficult to investigate accounting information reliability directly in accounting practice. Multiple benefits are anticipated from a better understanding of the empirical literature on accounting information reliability: it should assist standard setters and regulators in establishing financial reporting standards, preparers and auditors in implementing standards, and financial statement users in evaluating accounting information reliability (Maines and Wahlen, 2006). The FASB’s Conceptual Framework (1980) emphasizes two characteristics of reliability: representational faithfulness (‘the correspondence or agreement between a measure or description and the phenomenon it purports to represent’) and verifiability (‘the ability through consensus among

measurers to ensure that information represents what it purports to represent or that the chosen method of measurement has been used without error or bias'). A reliable number is one that is verifiable and reasonably free of error or bias, involving little estimation or judgment. A relevant number is one that is timely and has predictive value for valuation. Theoretically, a number that is relevant for valuation will not be useful if it is not reliable.

Furthermore, Maines and Wahlen (2006, p.403) define 'reliability' as the degree to which a piece of accounting information (1) uses an accounting construct that objectively represents the underlying economic construct it purports to represent, and (2) measures that construct without bias or error using the measurement attribute it purports to use. It suggests that reliability is a matter of degree, rather than an all-or-none concept. Reliability is inherent in the information itself, and not in the use of the information. Hence, the relevance of economic constructs and measurement attributes represented by accounting information is a prerequisite for reliability to matter. Thus, reliability is a necessary but not sufficient condition for accounting information to be useful. Accounting information reliability depends on how well accounting standards require and enable firms to represent economic constructs with appropriately informative accounting classifications and measurements. It also depends on how well preparers use their private information to identify, classify, describe, and measure relevant firm-specific economic constructs. It can be impaired by biases or intentional or unintentional errors that arise from preparers' incentives, lack of knowledge or data, decision processes, or personal traits.

Financial reporting and disclosure are potentially important means for management to communicate firm performance and governance with outside investors. Corporate disclosure is critical for the functioning of an efficient capital market, providing disclosure through regulated financial reports, including the financial statements, footnotes, management discussion and analysis, and other regulatory filings. Regulated financial reports are informative to investors, and the degree of informativeness varies systematically with the characteristics of the firm and economy. In addition, some firms engage in voluntary communication, such as management forecasts, analysts' presentations and conference calls, press releases, internet sites, and other corporate reports. Finally, there are disclosures about firms by information intermediaries, such as financial analysts, industry experts, and the financial press.

Previous studies examine the effects of preparers' incentives on the behaviour of specific accruals (such as loss provisions) or aggregate accruals to test for potential unreliable reporting of earnings, components of earnings, balance sheet numbers, and footnote amounts. These studies find evidence of accruals-based earnings management resulting from various incentives, including incentives created by preparer opportunism (bonus plans, insider trading), corporate control activities (management buyouts, proxy contests, initial public offerings, seasoned equity offerings, mergers and acquisitions), political/economic objectives, earnings expectations (management's forecasts or analysts' forecasts), debt covenants and potential distress, tax strategies, pressure to meet regulatory requirements and so on. However, they simply show those incentives trigger less reliable reporting without examining how firms impair reliability of accounting information; they provide little specific evidence upon which standard setters and those involved in the financial reporting process can act to improve reliability.

Recent studies adopt more specific approaches to examine which components of earnings firms manage to strategically increase or decrease reported earnings numbers, providing more specific implications regarding reliability. To illustrate, Plummer and Mest (2001) examine discontinuities in the distribution of earnings components and discover that firms appear to manage revenues upward and accrued operating expenses downward to meet earnings targets. Beatty et al. (2002) and Beaver et al. (2003) find that financial institutions meet earnings targets by exercising discretion over loss provision estimates and the timing of realized security gains. Phillips et al. (2003) find that preparers exercise discretion with respect to the deferred tax expense to avoid reporting an earnings decline. To summarize, it suggests that reliable accounting information depends on the interaction between accounting standards and the preparers who implement the standards. Some preparers will undermine the objective of reliable reporting by biasing their judgments and estimates to circumvent the intentions of the standards, particularly when preparers need to exercise significant judgment, as in the case of accrual estimates. Accounting standards can enhance the reliability of accounting information by requiring preparers to make judgments and estimates that more closely match the underlying economic constructs that the standards portray. Thus, accounting standards can (1) provide preparers and auditors with a more complete specification of the underlying economic constructs associated with a new standard and guidance for making appropriate choices within each new standard, and (2) require firms to make their judgments and choices

more transparent to external stakeholders by providing disclosures on the underlying economic assumptions on which they are based.

A relatively direct route to test the reliability relation within the accounting relation is to examine the association between firms' reported accounting information and observable economic benchmarks as proxies for firms' underlying economic constructs. One implication from these studies is that disclosures of benchmark data related to underlying economic constructs may help financial statement users to assess the reliability of accounting information. Value-relevance studies employ stock returns to infer whether capital market participants consider accounting information to be sufficiently relevant and reliable to be useful for making investment decisions. These types of studies implement an approach consistent with the user expectation relation, in which share prices are proxies for the present value of the capital markets' expectations of all future net cash flows to the firm. Studies in this line of research commonly deduce the reliability of accounting information by examining the strength of association between accounting numbers and share prices. Because these studies rely on share prices as proxies for expected future cash flows, they provide indirect evidence on accounting information reliability. Maines and Wahlen (2006) argue that value-relevance studies are joint tests of: (1) the capital markets' perception of relevance of a specific piece of accounting information for the future cash flows of the firm; (2) the capital market's perception of the reliability of that accounting information; (3) the asset-pricing model that the researcher uses to control for all the other factors that explain share prices, such as risk; and (4) market efficiency.

### **1.1.2. Conceptual Framework for Financial Reporting**

The Conceptual Framework (1989) explains that reliable information is free from material error and bias and can be depended upon by users to represent faithfully that which it either purports to represent or could reasonably be expected to represent. To provide the best foundation for developing principle-based standards, the Boards (the IASB and US FASB) undertook a joint project to establish an improved Conceptual Framework (the revised Framework) in 2010. The revised Framework is based on fundamental economic concepts rather than a collection of arbitrary conventions. It will eventually replace the existing IASB and FASB Frameworks and result in a common basis for both standard setters, which will eliminate the risk of reaching different conclusions about similar or even identical issues and events. The revised Framework is applicable to all preparers of IFRS and US GAAP general

purpose financial statements. The revised Framework distinguishes between two types of qualitative characteristics that are necessary to provide useful financial information: (1) Fundamental Qualitative Characteristics including *relevance and faithful representation* and (2) Enhancing Qualitative Characteristics containing *comparability, timeliness, verifiability and understandability*.

#### **1.1.2.1. Fundamental Qualitative Characteristics**

Transparency, high quality, internal consistency, true and fair view or fair presentation, and credibility have been suggested as desirable qualitative characteristics of financial information. However, transparency, high quality, internal consistency, true and fair view or fair presentation are different words to describe information that has the qualitative characteristics of relevance and representational faithfulness enhanced by comparability, verifiability, timeliness, and understand-ability. Credibility is similar but also implies trustworthiness of a reporting entity's management. Under SFAC No. 5 (FASB, 1984), accounting information is regarded as relevant if it is capable of making a difference for financial statement users when making decisions; accounting information is deemed as reliable if it represents what it purports to represent. SFAC No. 5 indicates that there are several dimensions of relevance and reliability. Dimensions of relevance incorporate feedback value, predictive value, and timeliness. Dimensions of reliability include representational faithfulness, verifiability, and neutrality. Value relevance is an empirical operationalization of these criteria because an accounting amount will be value relevant, i.e., have a predicted significant relation with stock prices, only if the amount reflects information relevant to investors in evaluating the firm and is measured reliably enough to be reflected in share prices. Value relevance tests generally are joint tests of relevance and reliability.

In the revised Framework (2010), the fundamental qualitative characteristics are relevance and faithful representation. Relevant financial information is capable of making a difference to the decision made by users. The revised Framework carries forward the notion of materiality as an element of 'relevance'. However, the Boards (the IASB and US FASB) have clarified that materiality is an entity-specific aspect of relevance based on the nature or magnitude of items to which the information relates. Information may be capable of making a difference in a decision even if some users choose not to take advantage of it or already are aware of it from other sources. Financial information is capable of making a difference in decisions if it has predictive value, confirmatory value, or both. Financial information has

predictive value if it can be used as an input to processes employed by users to predict future outcomes. Financial information need not be a prediction or forecast to have predictive value. Financial information with predictive value is employed by users in making their own predictions. It is self-evident that financial information is only useful for making a decision if it is capable of making a difference in that decision. Relevance is the term used in the Conceptual Framework to describe that capability. It is a fundamental qualitative characteristic of useful financial information.

Faithful representation replaces the previously used terminology ‘reliability’ (described in The Conceptual Framework, 1989), since the Boards determine that there is a lack of consensus in the understanding of reliability. Financial information faithfully represents economic phenomena with three characteristics: complete, neutral and free from error. The revised Framework acknowledges limitations in achieving a faithful representation, for instance, due to inherent uncertainties, estimates and assumptions. Correspondingly, financial information might not always be entirely free from error. Free from error means there are no errors or omissions in the description of the phenomenon, and the process used to produce the reported information has been selected and applied with no errors in the process. In this context, free from error does not mean perfectly accurate in all respects.

Information must be both relevant and faithfully represented if it is to be useful. Neither a faithful representation of an irrelevant phenomenon, nor an unfaithful representation of a relevant phenomenon, helps users make good decisions. Substance over form, prudence (conservatism) and verifiability, which were aspects of reliability in Concepts Statement 2 or the Framework (1989), are not considered aspects of faithful representation. Empirical accounting researchers have accumulated considerable evidence supporting relevant and faithfully represented financial information through correlation with changes in the market prices of entities’ equity or debt instruments. However, such studies have not provided techniques for empirically measuring faithful representation apart from relevance. Relevant and faithfully represented financial information is assumed to result in more efficient functioning of financial markets and reduces the cost of capital for the reporting entity. However, the quality of information disclosed can be influenced by the sophistication of the managers, in understanding their own operations, and having the ability to manipulate disclosed information, from earnings smoothing to misrepresentation.

Most studies document that earnings, book values, and other required financial statement information is 'value relevant'. The evidence suggests that regulated financial information provides valuable information to investors (Healy and Palepu, 2001). In the capital markets research, studies examine the relation between accounting information and stock prices or returns as a measure of value relevance. This research is extensively reviewed by Kothari (2001). The most significant conclusion is that regulated financial reports provide new and relevant information to investors.

#### **1.1.2.2. Enhancing Qualitative Characteristics**

Comparability, verifiability, timeliness, and understand-ability are directed to enhance the usefulness of information that is both relevant and faithfully represented. These enhancing qualitative characteristics should be maximized both individually and in combination. (1) Comparability enables users to identify similarities and differences among items, both between different periods within a set of financial statements and across different reporting entities. Consistent application of methods and policies to prepare financial statements helps to achieve comparability. (2) Verifiability is a new concept in the revised Framework (2010). Financial Information is verifiable when it enables knowledgeable and independent observers to reach a consensus on whether a particular depiction of an event or transaction is faithful representation. (3) Timeliness of financial information is a qualitative characteristic under the existing framework. However, rather than stressing the balance between timely reporting and reliable information, the revised Framework (2010) refers more broadly to timeliness as being able to influence decision makers. The Framework (1989) discussed timeliness as a constraint that could rob information of relevance. Timeliness is very desirable, but it is not as critical as relevance and faithful representation. Timely information is useful only if it is relevant and faithfully represented. In contrast, relevant and faithfully represented information may still be useful (especially for confirmatory purposes) even if it is not reported in as timely a manner as would be desirable. Timeliness means having information available to decision makers in time to be capable of influencing their decisions. Generally, the older the information is, the less useful it is. However, some information may continue to be timely long after the end of a reporting period because, for example, some users may need to identify and assess trends. (4) Understandability has been carried forward from the existing Framework. Financial information that is classified, characterized and presented in a clear and concise way is understandable.

The reliability of accounting information is assessed by auditors, users, and regulators. This includes inferring the degree of reliability from the relation between accounting information and proxies for underlying economic constructs and/or future cash flows; both experimental and archival research also infers reliability from aspects of the financial reporting process or from characteristics of financial reporting outcomes. Studies in this area consistently highlight the importance of disclosures designed to reveal reliability. Accounting standards that require firms to provide more complete disclosures related to the underlying economic constructs represented by accounting information can help users better assess accounting information reliability. Maines and Wahlen (2006) summarize that in some cases reliability can be assessed directly using relation to evaluate representational faithfulness through comparing accounting information to various economic benchmarks, including empirical proxies for economic constructs, simulated economic constructs, future cash flows, and forward-looking accounting measures. In addition, research also generates insights about assessing reliability by analysing the characteristics of firms for which the accounting data have been revealed to be unreliable through subsequent restatements. Meanwhile, reliability can be assessed indirectly using relation by comparing current period accounting information to the future cash flows that the accounting information purports to represent (see details in [Figure 1.1](#))

Maines and Wahlen (2006) depict three distinct relations in their framework as in following [Figure 1.1](#): (a) *the economic relation* between economic constructs arising from current-period commercial arrangements, transactions, and events and future-period cash flows. This relation describes the link between current economic constructs and future cash flows, which refers to ‘economic relevance’ of the economic constructs. The degree of economic relevance is influenced by two factors: the stakeholder’s decision context and the likelihood that unexpected future events will affect future cash flows; (b) *the accounting relation* between current-period economic constructs and current-period accounting information representing and measuring those constructs. Accounting information represents and summarizes a firm’s current commercial arrangements, transactions, and events (economic constructs) within a set of financial statements and related notes. The left half (2a) of the accounting relation in [Figure 1.1](#) describes the relevance of accounting information as a function of the subset of economic constructs disclosed in the financial statements and notes and the measurement attributes (e.g., historical cost, fair value) used to measure these economic constructs. The right half (2b) of the accounting relation in [Figure 1.1](#) depicts the reliability of accounting



information, which relies on the choice of an accounting construct and the choice of a measured value. Accounting reliability is inherent in the accounting information itself, not in the use of the information; and (c) *the predictive relation and users' expectation formation* indicate the relation between current-period accounting information and future-period cash flows. The predictive relation (3a) in Figure 1.1 represents the association between a firm's current accounting information and future cash flows. The predictive relation encompasses both the economic relation and the accounting relation and implies that the usefulness of accounting information depends on the degree to which it provides a reliable representation of the relevant economic constructs that have a direct impact on the future cash flows to the firm. In practice, the predictive relation depends on users' collection and analysis and transformation of accounting information into cash flow expectations. Users' expectation formation is reflected as relation (3b) in Figure 1.1 representing the ability of users to appropriately use accounting information to form expectations of future cash flows.

### 1.1.3. Chinese Context

Emerging markets have very distinctive characteristics and are structurally different from both developed markets and each other. Bekaert et al. (1998) found that the returns distributions of emerging markets are significantly non-normal, with significant (usually positive) skewness and excess kurtosis that vary through time. These characteristics may become less pronounced as a market's economy comes to more closely resemble a developed market through increased openness and liberalization. Regarding to earnings management, mainland China (excluding Hong Kong, Macau and Taiwan) is a special case to be studied for its unique political, social, cultural and economic environment. The People's Republic of China was established as a socialist country in 1949, the new government led by the Chinese Communist Party. Since the Economic Reform<sup>1</sup> in 1978, China has transferred from a centrally planned economy to a market economic system with socialist characteristics. The only form of economic entity before Economic Reform was state-owned enterprise (SOE)<sup>2</sup>.

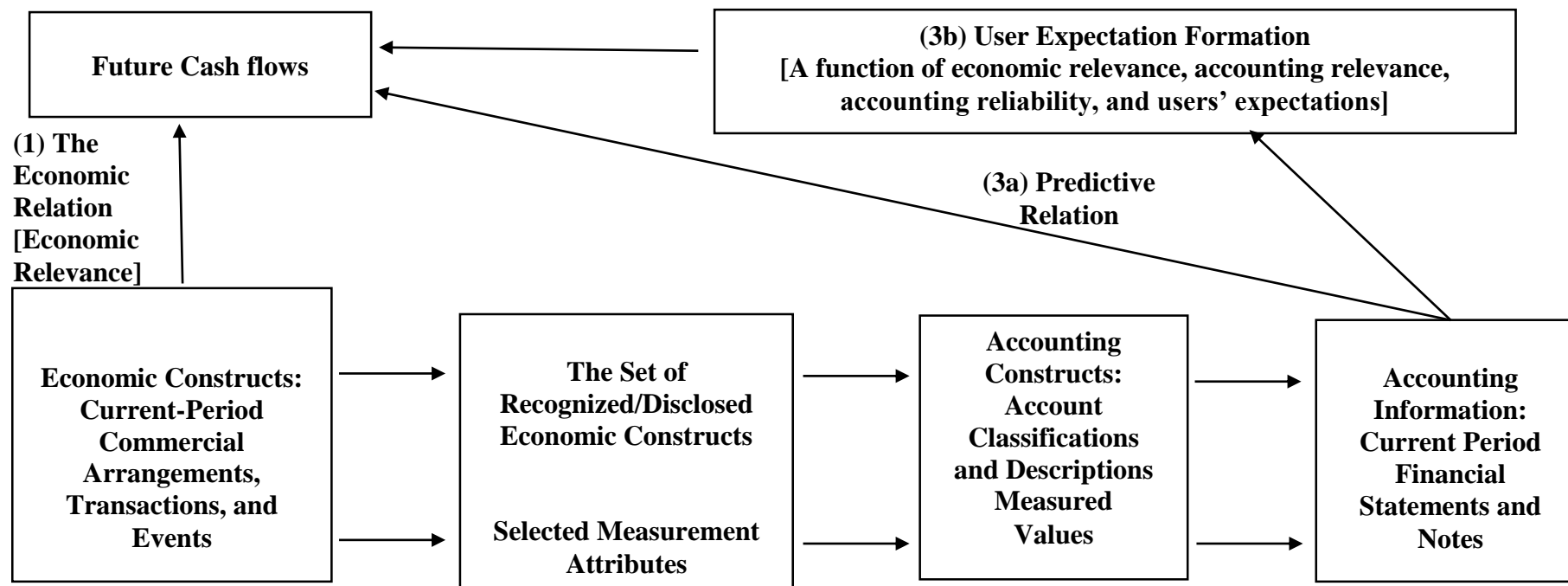
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<sup>1</sup> It is commonly accepted that one of the main goals of China's market-oriented reforms is to establish a corporate governance system that could provide incentives for investment, adequately restrain and monitor management, and promote the optimal use of resources for wealth creation. (Ronen, J. and V. Yaari, 2008)

<sup>2</sup> 'SOE employees benefited from housing, medical care, and schooling for their children, with the government providing benefits for maternity, injury, disability, and old age. Many SOEs were heavily subsidized and the government gave them access to bank financing, partly to pay for the social welfare needs of the workers.' (Tricker, 2009, p.192)

Figure 1.1 Representation of the Accounting Information Framework

(Source: Maines and Wahlen, 2006, *Accounting Horizons*, p.402)



(2) The Accounting Relation

[A function of accounting standards, preparers' recognition, disclosure, and measurement decisions, and auditor/regulator oversight]

(2a) Accounting Relevance

(2b) Accounting Reliability

China started to corporatize and privatize the SOEs in the early 1990s, because the government found that the ownership structure of SOEs hinders enterprises' economic efficiency (Tan and Wang, 2004; Chen, 2005). In the past ten years, China has been the largest developing country with average annual growth at around 10 per cent and GDP quadrupled, which attracts considerable attention from researchers and potential investors all over the world (Ding et al., 2007). Both institutional and individual investors are seeking investment opportunities in the Chinese financial market<sup>3</sup>. However, the Chinese stock market has been criticized for its high speculation and extensive insider dealings (Hu et al., 2010). Furthermore, China is an interesting case to be studied; while it has adopted many of the corporate governance mechanisms applied in the developed countries, it also has its sui generis characteristics. It has a distinct two-tier board structure comprising a supervisory board including employee representatives and board of directors with at least one third independent directors.

Research on earnings management in mainland China has flourished in recent years. Wang *et al.* (2008) express that earning management studies in emerging countries are especially important because higher demand for capital in these emerging capital markets can be met only if investors are protected from accounting frauds. Extant studies have documented that a rampant earnings management phenomenon does exist in China driven by the stringent China Securities Regulatory Commission (CSRC) regulations<sup>4</sup> and ineffective monitoring on the board of directors and supervisory board (Aharony et al., 2000; Chen and Yuan, 2004; Haw et al., 2005; Ding et al., 2007; Chen et al., 2008). Effective monitoring on boards is very crucial to ensure reliable and integrated financial reports. The failure of gatekeepers (such as independent directors and financial analysts) to prevent harmful earnings management has been attributed mainly to the conflicts between their own interests and monitoring responsibilities. Earnings management will mislead the users of financial reports by providing them with the falsification of accounting information.

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3 The ratio of China's stock market capitalization to GDP rose from 4% in 1992 to about 100% in 2007.

4 See [Table 1.1](#) CSRC Profitability Requirement for Rights Issue and [Table 1.2](#) CSRC Profitability Requirement for Delisting for details

The incidences of accounting scandals in China, such as Yin Guang Xia, Lantian, and Zhengzhou Baiwen, in which the interests of minority shareholders are exploited by controlling shareholders via related party transactions and falsifications of financial reports (Hu et al., 2010). Ding *et al.* (2007) claim that ‘the conflict of interests between controlling shareholders (the State) and minority shareholders is the root cause of earnings management in China.’ Even worse, the State plays dual roles as both controlling shareholder and regulator (Clarke, 2003; Chen et al., 2006; Liu and Lu, 2007). Evidence in prior literature shows that the practice of earnings management in China tends to ascend both in frequency and magnitude after 2000 (Chen et al., 2008; 2010). As stated by Chen *et al.* (2008), earnings management is an indicator of the corporate governance quality and investor protection standard, suggesting the effectiveness of market regulation and policy enforcement.

Table 1.1 CSRC Profitability Requirement for Rights Issue

Year	Profitability Requirement for Rights Issue
1993	Rights offering companies must make profits for two successive years to be qualified for rights issue.
1994	Rights offering companies have to make profits for three consecutive years with an average return on equity (ROE) of 10%.
1996	More stringent, the criteria requires a 10% ROE in each of the three previous year (resulted in the outbreak of earnings manipulation).
1999	CSRC reduced the minimum ROE to 6% for three consecutive years and the average ROE within the three years must be no less than 10%.
2001	ROE policy has changed to ‘average ROE should be more than 6% in the past three years, and the principle of ROE calculation is that you must choose the lower value after non-operating gains or losses are deducted’ (Wang et al., 2008, p.729).
2002	ROE criteria required an average of 10% for three consecutive years and the ROE of the latest year must be no less than 10%.

Table 1.2 CSRC Profitability Requirement for Delisting

Type	Profitability Requirement for delisting
<b>ST</b> <b>(Special Treatment)</b>	If a listed company reports a net loss for two successive years it will be labeled as 'ST', which stands for 'Special Treatment'. 'ST' stocks can only be traded within 5 percent price volatility limit each day versus 10 per cent for normal stocks.
<b>PT</b> <b>(Particular Transfer)</b>	If a 'ST' company can't make profits in the third year, it will be labeled as 'PT', which stands for 'Particular Transfer'. 'PT' stocks can only be traded on Fridays with a maximum 5 per cent upper limit, but no restriction on the lower limit. The 'PT' firms will face delisting if it can't turn losses into gains in the next three years (Chen et al., 2008; Ding et al., 2007).

### 1.1.3.1. Overview of Corporate Governance in China

China introduced the OECD corporate governance practices in 2001. After 2003, Chinese firms were required by law to follow several OECD practices. Recent developments of corporate governance in China have been remarkable (Liu, 2006; Cheung et al., 2010). In 2001, the *Code of Corporate Governance for listed companies*<sup>5</sup> promulgated by CSRC and State Economic and Trade Commission, sets forth the basic principles for corporate governance of Chinese listed companies, the means for the protection of investors' interests and rights, the basic behavior rules and moral standards for directors, supervisors, managers and other senior management members. Since the enactment of the *1994 Company Law*, a two-tier Board structure for Chinese companies was introduced and a Supervisory Board is mandatory for a joint stock limited company. The amended *2006 Company Law*<sup>6</sup> influences the Board monitoring in three aspects: (1) a significant enhancement of the effectiveness of the Supervisory Board; (2) a modest strengthening of participation by workers, and (3) the independent director system for listed companies is codified (Article 123.2) (Xi 2006).

5 See [http://www.csrc.gov.cn/pub/csrc\\_en/newsfacts/release/200708/t20070810\\_69223.htm](http://www.csrc.gov.cn/pub/csrc_en/newsfacts/release/200708/t20070810_69223.htm)

6 See [http://www.npc.gov.cn/englishnpc/Law/2007-12/12/content\\_1383787.htm](http://www.npc.gov.cn/englishnpc/Law/2007-12/12/content_1383787.htm)

The current corporate governance system in China mixes the features of the Anglo-American model with the German model while having its sui generis characteristics. Prima facie, the mechanism is identical with the two-tier system in Germany and Japan, in which firms are governed by a board of directors and a supervisory board. However, there is a substantial difference. There is no hierarchical relationship between the board and supervisory board in China, which are both appointed by and report to shareholders' general meetings. Under the German model, the supervisory board is superior to the board of directors. The Chinese Security Regulation Commission (CSRC) began to emphasize the importance of independent directors after 1999. For those companies listed on domestic, the definition of independent directors was first introduced in the Guidelines on Company Chapter of Listed Companies by CSRC as an optional article in 1997. Until 2001, an official and comprehensive guideline on independent directors was enacted, which required domestically listed companies to appoint at least one third independent directors on their board of directors by 30<sup>th</sup> June, 2003 (CSRC, 2001). From this perspective, Chinese corporate governance system is closer to the Anglo-Saxon one-tier structure (Chen and Al-Najjar, 2012). The State Assets Management Bureau (SAMB) was elevated to ministerial level as the State-owned Assets Supervision and Administration Commission (SASAC)<sup>7</sup> in 2003 (Wang 2010). SASAC has considerable power over SOEs in China, including the appointment and dismissal of directors and top executives of the supervised enterprises. The SASAC holds Chinese Government's shareholding<sup>8</sup> in all Chinese listed companies except the financial institutions.

### **1.1.3.2. Split Share Structure Reform**

The reform which started in 2005 symbolizes a dramatic change in the institutional setting of the Chinese stock market. Split Share Structure Reform in China abolishes the trading restriction on shares mainly owned by state shareholders. Hence, state shareholders' wealth is more sensitive to share price movements and decreases their conflict of interests with private shareholders. This change is expected to strengthen the corporate governance incentives of state shareholders and reduce the information asymmetry in Chinese listed firms. Prior to

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<sup>7</sup> The SASAC, authorized by the State Council in accordance with the Company Law and other administrative regulations, performs investor's responsibilities, supervises and manages the State-owned assets of the enterprises under the supervision of the Central Government (excluding financial enterprises), and enhances the management of the State-owned assets. SASAC guides and pushes forward the reform and restructuring of state-owned enterprises, advances the establishment of modern enterprise system in SOEs, improves corporate governance.'

<sup>8</sup> At the end of 2008, the total assets held by SASAC amounted to RMB5.56 trillion.  
<http://xxgk.sasac.gov.cn/gips/contentSearch?id=7379976>

split share structure reform, state shareholders mainly held restricted shares that could not be freely traded in the stock market in the same way as shares held by private shareholders. A conflict of interest between state and private shareholders is generated because share price movements in the capital market did not affect the wealth of the former. Following the Split Share Structure Reform, the increased share price informativeness reflects a corporate governance improvement. This unique split share structure can lead to divergent interests and incentive conflicts between tradable and non-tradable shareholders and has long been recognized as the source of many corporate governance problems in China (Chen, Firth, Gao and Rui, 2006; Chen, Firth, Xin and Xu, 2008). They examine the role of government shareholders (controlling shareholders) and mutual funds (institutional shareholders) play in the split share structure reform in China.

To carry out the reform, the non-tradable shareholders have to negotiate with the tradable shareholders on a suitable compensation plan for converting non-tradable shares to tradable shares. The roles of the state shareholders and mutual funds in this reform are particularly interesting. The state is the largest non-tradable shareholder, while mutual funds are the largest type of institutional investor in tradable shares in Chinese capital market. The non-tradable shareholders need to offer compensation to tradable shareholders (including mutual funds) in order for the latter to agree to the reform. In theory, the interests of mutual funds should align with the interests of the private investors in tradable shares. Individual investors can therefore free ride on the efforts of mutual funds in the belief that the funds will look after their interests (Davis and Kim, 2007).

Fully realizing the problems with the split share structure, the Chinese government began to reduce the proportion of state ownership by selling (non-tradable) state-owned shares into the market in June 2001. In light of the strong adverse reaction from tradable A-shareholders, the government withdrew the plan in October 2002, and this marked the initial, albeit unsuccessful, attempt at share ownership reform. The chronic governance problems persisted, investors lost more confidence in the listed companies, and the stock market crashed. During this period, the Shanghai Composite Index plunged from its peak of about 2,245 points to around 998 points at the end of May 2005, with market fundraising activities shrinking significantly. With the intention to improve corporate governance, the State shares and Legal Person Shares have been gradually allowed to be tradable on the stock exchanges by the government since the start of the split share structure reform in 2005 (Cheung et al., 2008).

The share segmentation reform commenced from 2005 and finished at the end of 2006. In essence, the reform approved non-negotiable state and legal person shares to be gradually negotiable after two years. Consequently, at the end of 2009, about 80% of non-negotiable shares became negotiable. However, only a small fraction of these were traded in the market, as the CSRC only allows them enter into the market gradually. To help stabilize the stock markets and strengthen corporate governance, the Chinese government made a strategic decision in 2000 to develop securities mutual funds as institutional investors in tradable shares (CSRC, 2000). Since then, the growth of the mutual fund industry has become remarkable. The number of fund management companies increased from 6 in 1998 to 57 in 2006, while the number of mutual funds increased from 5 in 1998 to 323 in 2006.

### **1.1.3.3. Accounting and Financial Reporting Standards**

As stated in Healy and Palepu (2001), accounting standards define the reporting choices available to managers in presenting the firm's financial statements, which potentially reduces processing costs for financial statement users by providing a commonly accepted language that managers can use to communicate with investors. The globalization of capital markets has been accompanied by calls for globalization of financial reporting.

Ball et al. (2000) extends Nobes (1998) by showing that political factors have strongly influenced the nature of the accounting system in a developing economy. Further, because of both self-motivation and external pressure, the Chinese government has been active in developing accounting standards in harmony with IAS (Weetman, 2004). In China, firms have to announce their earnings within four months of their fiscal year end. Recent scandals over the last decade have made people believe that a rules-based financial reporting regime is not sufficiently robust for stakeholder needs. Whereas a rules-driven approach would make it easier for investors to make comparisons between companies, another view was that under principles-based standards users would better understand the 'language of accounting'. The adoption of International Financial Reporting Standards (IFRS) by the Chinese government as the foundation for its new principles-based regime was thus welcomed by a number of parties. Principles-based accounting is thought to provide the most 'authentic presentation' of financial information and represent economic reality with a focus on economic substance over legal form.



### 1.1.3.3.1 Authorities in Chinese Accounting System

Unlike in the West, the authority for formulating, promulgating and administering accounting standards is not the Accounting Society of China (ASC) or the Chinese Institute of Certified Public Accountants (CICPA), the Ministry of Finance (MOF) is the authoritative standards setting body which undertakes the task of formulating, promulgating accounting standards and overseeing all financial and accounting affairs in China (Peng et al, 2008). In the United States, the SEC, under the oversight of the U.S. Congress, is responsible for maintaining and regulating the required accounting and disclosure rules that firms must follow. These rules are produced both by the SEC itself and through SEC oversight of private standards-setting bodies such as the Financial Accounting Standards Board. Table 1.3 illustrates the relevant authorities in China's accounting system as follows.

Table 1.3 Relevant Authorities in China's accounting system

<b>Authority</b>	<b>Role</b>
Ministry of Finance (MOF) Under State Council	Formulating, Promulgating and administering all accounting standards; No direct involvement with enterprises.
State Administration for Taxation (SAT)	Tax collection, official invoice supplier, accounting audits; Most important authority related to tax & accounting
State Administration for Industry and Commerce(SAIC)	Issue business licenses, reviews financial statements of enterprises on an annual basis
External Audit Firm (CPA)	Conducts compulsory annual audit by third party

(Source: InterChina Consulting, 2009)

### 1.1.3.3.2 The evolution of China Accounting Regulatory Framework

The rapid growth and marketization of the economy, the influx of foreign investment, accession to the WTO, as well as the increasing maturity and importance of China's securities market, have all highlighted the need for a sound, reliable, and transparent accounting system in China. To meet this need, a series of regulations have been issued over the past several years, including *the Accounting Law (1999)*, *the Standard Rules for*

*Enterprise Accounting (2000), the Accounting Standards for Business Enterprises (2001), and the Accounting Standards for Business Enterprises - updated (2006).*

The introduction of the Enterprise Accounting System is part of a continuous regulatory response to ‘an accounting information crisis’ (Li, 2001). Extensive false reporting and earnings management by companies have discredited accounting information and hampered the development of the capital market. To tackle this issue, the Accounting Law was amended in 1999 to stress the importance of ‘true and complete’ accounting information. In 2000, the State Council issued an Enterprise Financial Reporting Regulation, redefining the elements of financial statements in line with the conceptual framework of the IASC and stipulating responsibilities and liabilities for parties involved in accounting, auditing and reporting. The Enterprise Accounting System has three parts: part one defines basic concepts, elements of financial statements, recognition and measurement principles, permissible accounting methods, structures and content of the main financial statements; part two prescribes a chart of accounts and financial statements; and part three demonstrates accounting treatments of the main elements of financial statements.

The present Chinese accounting regulations and practices have evolved from a Soviet-style macro-economy oriented accounting system adopted by China in the 1950s. Beginning in the late 1970s, China’s economic reforms aimed at rebuilding a market economy have introduced fundamental changes to its accounting system. During the 1990s, a set of accounting standards, in line with International Accounting Standards (IAS), has been promulgated for Chinese listed companies. The Chinese accounting profession was revived in 1980 when the first regulation on practicing accountants took effect to meet the urgent need for direct foreign investments. The first Chinese CPA firm was established in Shanghai in January 1981. All listed companies are required by the Ministry of Finance (MOF) to have their annual reports audited by independent CPAs. Listed companies in China are subject to special accounting and disclosure regulations issued by the Ministry of Finance and CSRC. A summarized version of the audited annual report is required to be published in selected securities newspapers on or before April 30 following the year-end. Companies issuing B-shares are required to publish summarized financial statements that are based on both Chinese GAAP and IAS. The required financial statements include a balance sheet, an income statement, a cash flows statement, attached schedules and footnotes.

Listed companies' periodical financial reports disclosure duties include those of the annual report, interim report and quarterly report. Any information having major impact on the investors' decisions must be disclosed. Annual report shall be prepared and disclosed within 4 months since the end of the fiscal year; Interim report shall be prepared and disclosed within 2 months since the end of the first half of the fiscal year; quarterly report shall be prepared and disclosed within 1 month since the end of the 3rd and 9th month of the fiscal year. Any forecasted operational losses or big fluctuations shall be disclosed in form of earnings forecast (*Regulations on Information Disclosure of Listed Companies, 2011*).

The following [Table 1.4](#) displays the development of China Accounting Regulatory Framework. *The first stage* of the Accounting Regulatory Framework development was from 1992 to 1997. The 1992 Chinese GAAP was a milestone in the history of Chinese accounting standards and regulations because it represented a remarkable change from providing the accounting information for a central government-planned economy to a socialist market economy (Peng et al, 2008). *The second stage* was from 1998 to 2000. The 1998 Chinese GAAP replaced the previous one. The implementation of the Accounting System for Joint Stock Limited Enterprises set by the MOF in 1998 was in order to eliminate the discrepancies between Chinese GAAP and IFRS in the 1992 regulation. During this period, the listed A-share companies were required to conform to Chinese Accounting Standards (CAS) and Accounting Law of the People's Republic of China (Peng et al, 2008). *The third stage* was from 2001 to 2006. The 1998 Chinese GAAP was substituted by the Accounting System for Business Enterprises issued by the MOF (the 2001 Chinese GAAP). The 2001 GAAP moves Chinese accounting standards further towards convergence with IFRS (Pacter and Yuen, 2001). *The fourth stage* of China's regulatory development started from 2007. It is represented by the revised Chinese GAAP which was issued in February 2006 but effective in January 2007. The 2006 Chinese GAAP promulgated by the MOF and China Accounting Standards Committee is introduced in an attempt to further improve the standardization process and narrow the existing gap, covering a new Basic Standard and 38 Specific ASBEs. The new ASBEs include nearly all of the topics under the current International Financial Reporting Standards (IFRS).

Table 1.4 China Accounting Regulatory Framework Development

	<b>Stage 1</b>	<b>Stage 2</b>
Period	1992.1.1--1997.12.31	1998.1.1--2000.12.31
Accounting regulations in effect throughout the stage	Experimental Accounting System for Joint Stock Limited Enterprises	Accounting System for Joint Stock Limited Enterprises
	ASBE	ASBE
	Form and Content of Information for Disclosure by Companies with Securities Issued to the Public	Form and Content of Information for Disclosure by Companies with Securities Issued to the Public
		Chinese Accounting Standard
		Accounting Law of the People's Republic of China
Referred to	<b>1992 GAAP</b>	<b>1998 GAAP</b>
	<b>Stage 3</b>	<b>Stage 4</b>
Period	2001.1.1--2006.12.31	from 2007.1.1 to date
Accounting regulations in effect throughout the stage	Accounting System for Business Enterprises	Accounting System for Business Enterprises
	ASBE	ASBE
	Form and Content of Information for Disclosure by Companies with Securities Issued to the Public	Form and Content of Information for Disclosure by Companies with Securities Issued to the Public
	Chinese Accounting Standard	Chinese Accounting Standard
	Accounting Law of the People's Republic of China	Accounting Law of the People's Republic of China
Referred to	<b>2001 GAAP</b>	<b>2006 GAAP</b>

Notes: ASBE: Accounting Standard for Business Enterprises

“Accounting Law of the People’s Republic of China” revised by the State Council of China

In February 2006, the Ministry of Finance announced the introduction of 39 new Chinese Accounting Standards explicitly based on IFRS. In this research, the term “new Chinese Accounting Standards” refers to the Basic Standard and the 38 specific Accounting Standards for Business Enterprises (ASBEs) issued by the Chinese Ministry of Finance. Although not complying fully with International Financial Reporting Standards (IFRS), the new Chinese Accounting Standards nonetheless adopt the principles contained in IFRS and are therefore considered to be substantially converged with IFRS. Furthermore, in December 2008, the European Commission decided to permit Chinese issuers to use Chinese Accounting Standards in the European Community for a transitional period of up to three years. A final decision on the equivalence of Chinese Accounting Standards to IFRS will be taken at a later date. The new Chinese Accounting Standards were adopted by all listed companies from 1<sup>st</sup> January, 2007 and are being phased in over time for other companies and enterprises. Chinese Accounting Standards will continue to be updated in line with IFRS developments.

The introduction of these new accounting standards represents a remarkable achievement. The former standards in mainland China had been highly prescriptive and rules-based. In addition, the previous standards were industry-specific and as each set of industry-based standards was so different in nature, from a technical point of view, it would have been difficult for diversified groups of companies to produce meaningful consolidated accounts. In part, the transition to new Chinese Accounting Standards was significantly challenging because it had taken place during China’s fast-moving reform from a planned to a market economy and a relative lack of education and experience of IFRS accounting. As is well known, the Chinese economy is dominated by State-Owned Enterprises and indeed, prior to 1999, many accounting firms were themselves government owned. IFRS is usually as a proxy for a principles-based system. The experience of implementation of IFRS in China is particularly interesting as Chinese standards are moving from a ‘rules-based’<sup>9</sup> to a more ‘principles-based’<sup>10</sup> regime. The introduction to the new Chinese Accounting Standards marked a watershed moment not only for China but also in the development of accounting

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<sup>9</sup> *The ICAS definition of a rule:* A rule is a means of establishing an unambiguous decision-making method. There can be no doubt about when and how it is to be applied. (ICAS, 2006, p. 4)

<sup>10</sup> *The ICAS definition of a principle:* A principle is a general statement, with widespread support, which is intended to support truth and fairness and acts as a guide to action. Principles-based accounting standards are based on a conceptual framework, consist of a clear hierarchy of over-riding principles and contain no “bright-line” or anti-abuse provisions. Such an approach requires the use of judgment by preparers, auditors and regulators. (ICAS, 2006, p. 1-2)

standards more widely. For China, the new standards represented a radically different approach at a time of fast-moving reform in the economy. The magnitude of this step cannot be overstated. But the explicit recognition of IFRS by China marks a significant step on the road towards a single, global accounting language.

The most challenging aspect of operating in a principles-based environment is the need to apply professional judgment effectively, consistently and fairly. However, the degree of support within China, and the determination across all stakeholders to make the new IFRS-based Chinese Accounting Standards effective, is very impressive. Where problems or issues have been encountered, these appear to have been resolved quickly and diligently. To support such an environment, accounting professionals have to be trained, ethics have to be upheld and additional guidance must be provided to make principles operational. Furthermore, all stakeholders need to recognize their responsibility for making and accepting judgments. The implementation effort has been remarkable through official support and commitment to principles-based accounting led by the Ministry of Finance (*Chinese accounting reform*, 2010). Strong support throughout Government circles, led by the Ministry of Finance, was expressed for principles-based standards based on IFRS, but it was thought unlikely that China would simply give up its sovereignty in this area by adopting IFRS in their entirety in the near future. Further, the previous cultural background was not one which allowed or encouraged judgment and this has shaped people's current perspectives. Preparers of accounts tend to be risk averse and to favor reliance on a definitive source as justification for a particular accounting treatment.

The same set of accounting standards will yield different accounting outcomes when different preparer incentives are offered. The application of accounting standards involves the use of judgment and discretion by corporate insiders through the use of reported earnings to provide more information about a firm's economic performance or to serve other less benign interests (Burgstahler et al., 2006; Leuz et al., 2003). For this reason, the reporting incentives and the forces shaping them are likely to determine earnings quality. Watts and Zimmerman (1978, 1986) hypothesize that political cost is one of the important incentives that drive managers' accounting choices and reporting practices. Healy and Wahlen (1999) identify political cost as one of the incentives for earnings management. This research will examine how government ownership shapes a firm's incentives to influence the accounting earnings that reflect economic performance.

#### 1.1.3.4. Emerging Chinese Capital market

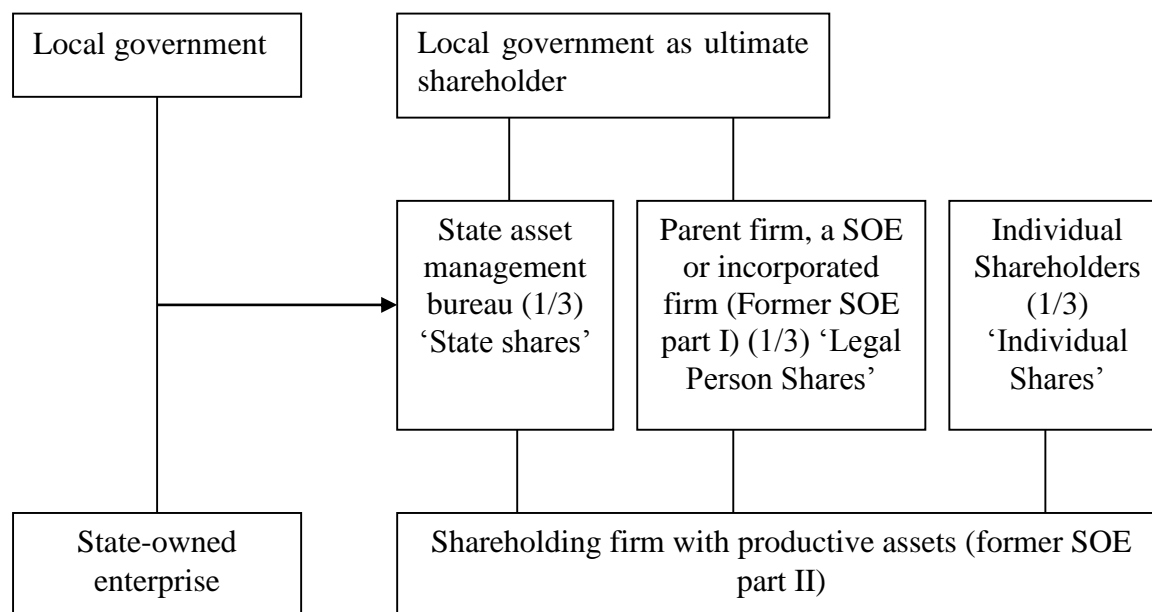
China is the largest developing country and its impressive growth astonished the world and has attracted considerable attention from researchers and potential investors all over the world in last ten years. China started the Economic Reform in a context where most important elements characterizing a sound institutional infrastructure (e.g. well-structured legal system, rigorous law enforcement and well-functioning capital markets) were absent. Since the Economic Reform in 1978, China has transferred from a centrally government owned economy to a free market economy with its sui generis characteristics. Before the Reform, the only form of economic entity was state owned enterprise (SOE)<sup>11</sup>. During the transition, the government started to partially privatize the state-owned firms and listed them on the stock market to enhance the economic efficiency (Tan and Wang 2004; Chen 2005). With the sustainable growth of Chinese capital markets, it has witnessed remarkable improvements in corporate governance, transparency, and investor protection (Chen et al., 2011).

In order to help SOEs raise capital and improve their economic efficiency, Chinese stock market was established with the opening of Shanghai Stock Exchange (SHSE) in 1990 and the Shenzhen Stock Exchange (SZSE) in 1991. Establishing and developing a well-functioning capital market is an important element of China's overall reform strategy. Most listed firms are transformed from SOEs. Prior to an IPO, SOEs must go through a restructuring process in which an SOE is split in two parts: a subsidiary (state-owned listed firm) that goes IPO and a parent company that remains an SOE. The subsidiary takes the productive assets and efficient employees. The parent company takes the non-productive assets and undertakes the responsibility for existing liabilities. The listed firm with the productive assets needs to be profitable for at least one year before IPO. The parent company owns about one third of the listed firm's shares which is called 'legal person shares' and not supposed to be traded in the stock market. Another one third of the shares are owned by the government in the form of non-tradable 'state shares.' A state-owned listed firm usually has only one third of its total shares as tradable and sells to individual investors. [Figure 1.2](#) presents the ownership structure of a typical Chinese state-owned listed firm.

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<sup>11</sup> 'SOE employees benefited from housing, medical care, and schooling for their children, with the government providing benefits for maternity, injury, disability, and old age. Many SOEs were heavily subsidized and the government gave them access to bank financing, partly to pay for the social welfare needs of the workers.' (Tricker, 2009, p.192)

Figure 1.2 The restructuring process from a typical SOE to a listed firm



(Source: *The Chinese Stock Market-Possibilities and Pitfalls*. Trade Council of Denmark-China, 2006)

During the development of capital market in China, there are five types of shares: A-Shares, B-Shares, H-Shares, N-Shares, L-Shares (for details see [Table 1.5](#)).

Table 1.5 Types of shares in China

Types of Shares	Definition
<b>A-Shares</b>	Initially, only A-shares were issued and shares are only available to Chinese domestic investors are denominated in Chinese currency RMB
<b>B-Shares</b>	In 1992, the issuance of B-shares started the trading of Chinese securities for foreign investors. Prior to 2001, B shares could only be traded by foreign investors. After March 2001, domestic investors are also permitted to trade B shares. B shares are denominated in foreign currencies (U.S. dollars for the Shanghai Stock Exchange and Hong Kong dollars for the Shenzhen Stock Exchange).
<b>H-Shares</b>	Shares of China based companies listed on the Hong Kong Stock Exchange
<b>N-Shares</b>	Shares of China based companies listed on the New York Stock Exchange
<b>L-Shares</b>	Shares of China based companies listed on the London Stock Exchange



Both institutional and individual investors are seeking for investment opportunities in the Chinese capital market<sup>12</sup>. Foreigners are permitted to invest in A-shares via QFII<sup>13</sup> (the qualified foreign institutional investors) system regulated by China Securities Regulatory Commission (CSRC) and the People's Bank of China. Listed firms in the A-shares market, which are required to report under a common set of standards—the Chinese GAAP. The A-shares market is deemed not as efficient as the U.S. stock market (Morck et al., 2000; Wang et al., 2009). There has been a '10 per cent price limit' on daily stock price fluctuation imposed by the Chinese government since December of 1996 (Lin and Swanson 2008). Wang and Xu (2005) believe that the floating ratio, i.e. the proportion of tradable shares, captures a firm's corporate governance level. In terms of the data from the CSRC, tradable shares on average accounted for 33 percent of total shares in the year of 2000. The floating ratio has increased slightly since then, but is still below 40 percent. B shares, H shares, overseas shares, and firms that are dual-listed are excluded from this study because they are subject to either different accounting standards or different listing regulations. This thesis focuses on the A-shares market only because the small sample sizes in either the B-shares market or the H-shares market does not allow for a reasonably powerful test.

The Chinese stock market has been criticized for high speculation and extensive insider dealings (Hu, Tam et al. 2010). Because the Chinese government<sup>14</sup> plays the roles of both controlling owner and regulator, its social purpose is deemed to cause major conflict of interests between the controlling shareholders and the minority shareholders. Although listed private enterprises (non-SOEs) are increasing in number rapidly and the private sector has stimulated China's economic development in the last two decades (Allen et al., 2005), the listed SOEs still dominate the Chinese capital market. Compared with the private sector, government policies have been favoring the state sector. The government intervention in SOEs through majority state ownership or the appointment of connected managers makes the Chinese context particularly interesting and special. However, government intervention in business activities is not unique to China (Chen et al., 2011).

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12 The ratio of China's stock market capitalization to GDP rose from 4% in 1992 to about 100% in 2007, further declined to 44.9%.

13 The first approved QFII traded in A-shares on 9<sup>th</sup> July, 2003.

14 China's government administration has five levels: (1) central; (2) provincial; (3) prefecture; (4) county; and (5) township.(Chen et al., 2008)

Despite the fact that China is the largest emerging economy with the fastest growing stock market and increasing global importance, it has some unique institutional features. Firstly, most listed firms in China came into being due to partial privatization, and the Chinese government is usually the largest co-investor or controlling shareholder in these firms (Sun and Tong, 2003). Secondly, the government ownership is represented by various entities such as government agencies (the state asset management bureau at various levels), state asset holding/management companies, and state-owned enterprises (SOEs) (Chen et al., 2009). Thirdly, the shares of Chinese listed firms are separated into two categories as negotiable and non-negotiable shares (Li et al., 2009). The former shares were tradable on the stock market and were mainly held by individual investors, while the latter were not allowed to trade and mainly held by the government (state shares) and other legal entities (legal person shares). Legal persons are often related to the government in various ways. Negotiable shareholders were usually minority shareholders in a firm and could not play an effective role in monitoring management. The controlling shareholders who hold non-negotiable shares are usually connected to the government (Huang et al., 2011).

A distinct feature of the Chinese capital market is almost all listed companies were transformed from state-owned enterprises (SOEs) and that state-owned assets thus dominate the firms' capital structures. Either evaluated by the number of listed firms, GDP or market capitalization, or liquidity and fund-raising capability, the Chinese stock market has outperformed other emerging markets in the year 2012 as demonstrated in [Table 1.6](#). According to the statistics released by the CSRC, at the end of June, 2015 there were 2798 companies listed on the two stock exchanges (1071 companies listed on Shanghai Stock Exchange and 1721 listed on Shenzhen Stock Exchange), with a total market capitalization of *RMB ¥62746.55 billion* (Data Source: CSRC<sup>15</sup>; Shanghai Stock Exchange<sup>16</sup>; and Shenzhen Stock Exchange<sup>17</sup>, June, 2015). Although Chinese capital market has achieved astonished development and attracted global attention, it is still regarded as immature, which is characterized by weak equity outsiders, strong market speculation, weak form efficiency, rampant earnings management and deceptive financial reporting, and extensive market manipulation (Weetman et al., 2004).

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<sup>15</sup> [http://www.csrc.gov.cn/pub/zjhpublic/G00306204/zqscyby/201507/t20150716\\_281094.htm](http://www.csrc.gov.cn/pub/zjhpublic/G00306204/zqscyby/201507/t20150716_281094.htm)

<sup>16</sup> <http://english.sse.com.cn/>

<sup>17</sup> <http://www.szse.cn/main/en/>

Although the capital market has played an important role in accounting standard setting in China, its continued structural weaknesses and significant imperfections have seriously restricted the supply of, and demand for, decision-useful accounting information and IAS-type accounting standards (Weetman et al., 2004). Financial accounting systems support the informational role played by stock price. Black (2000) and Ball (2001) argue that a strong financial accounting regime focused on credibility and accountability is a prerequisite to the very existence of vibrant securities markets. Efficient stock markets, in which stock prices reflect all public information and aggregate the private information of individual investors, presumably communicate that aggregate information to managers and current and potential investors.

Table 1.6 GDP, Market Capitalisation and number of Listed Companies 2012

	<b>GDP(2012)</b> (PPP, current USD billions)	<b>Market Capitalization</b> (USD millions)	<b>Market CAP/GDP 2012</b> (nominal)	<b>Listed Domestic Companies 2012</b>
Bangladesh*	286. 3	17, 479. 0	15. 00%	229
China**	12, 268. 6	3, 697, 376. 0	44. 90%	2494
Chinese Taipei**	894. 3	831, 900. 0	177. 00%	802
Hong Kong China*	365. 6	1, 108, 127. 0	420. 90%	1553
India*	4, 715. 6	1, 263, 335. 0	68. 60%	5294
Indonesia**	1, 203. 6	396, 772. 0	45. 20%	483
Korea**	1, 540. 1	1, 180, 473. 0	104. 50%	1798
Malaysia*	494. 6	476, 340. 0	156. 20%	900
Mongolia**	15. 0	1, 292. 0	12. 60%	329
Pakistan*	491. 1	43, 676. 0	19. 40%	573
Philippines*	419. 5	264, 142. 0	105. 60%	254
Singapore*	322. 9	414, 125. 0	150. 80%	479
Thailand**	645. 1	382, 999. 0	104. 70%	585
Vietnam**	336. 2	32, 933. 0	21. 10%	311

\* Common law jurisdiction

\*\* Civil law jurisdiction

Sources: *Corporate Governance in Asia, OECD, 2014*

*GDP & Market Capitalisation & Market Cap/GDP: World Bank*

*Listed domestic companies: World Federation of Stock exchanges & World Bank*

### 1.1.3.5. Capital Market Regulator

It is evident that the poorly developed capital markets have an impact on the regulators in choosing an approach to accounting regulation and in prioritizing the needs of different users (Weetman et al., 2004). The Chinese regulators are aware of the weaknesses of the capital market and its impact on the demand for, and supply of, accounting information. China Securities Regulatory Commission<sup>18</sup> (CSRC) is the capital market regulator in China playing the similar role as US Securities and Exchange Commission (SEC), with the prime objective of protecting investors' rights and interests. CSRC issues the corporate governance code and other corporate governance regulations, and publishes regular reports on corporate governance reform and performance in China.

During the initial development of the stock market, the Chinese central government designed the regulatory structure via a stringent IPO quota system, which was formally abolished in 2001. (Pistor and Xu 2005; Cheung, Ouyang et al. 2009) The quota was determined by the State Council and was allocated to local governments by the CSRC. Under the quota system, local governments were delegated to select which firms should go public for equity financing (Tan and Wang 2004; Chen, Lee et al. 2008). Initially, CSRC predetermined the issue prices of an IPO based on a fixed price earnings (P/E) ratio method, in which a pre-set P/E ratio between 13 and 15 multiplied the company's average earnings over the past three years. Tan and Wang (2004) and Cheung *et al.* (2009) claim that this situation seriously distorted the market mechanism and caused huge IPO underpricing. Until 1<sup>st</sup> of January, 2005, the cumulative price inquiry from institutional investor method<sup>19</sup> was introduced.

Healy and Palepu (2001) suggest that, by setting minimum disclosure requirements, regulators attempt to reduce the information gap between the informed and uninformed. CSRC revises its disclosure requirement to continuously improve the quality of information disclosure of listed companies with the ultimate goal being to improve corporate governance. Furthermore, CSRC sets tough regulations for the profitability requirements for rights issue

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18 China Securities Regulatory Commission (CSRC), a ministerial-level public institution directly under the State Council, performs a unified regulatory function, according to the relevant laws and regulations, and with the authority by the State Council, over the securities and futures market of China, maintains an orderly securities and futures market order, and ensure a legal operation of the capital market.

19 The offering price is based on results from a book-building process oriented to institutional investors. Brokerage houses use the final negotiated price for the retail offering.

and delisting. To better develop the securities market and protect investors, the *Securities Law* was introduced in 1999. It regulates the rules of corporate governance for listed companies and requires listed companies to disclose financial information (Lin and Swanson, 2008). The *Securities Law* moved the IPO system towards a more market-oriented system, under which the firms satisfying the demand of IPO can be approved to offer after verification without the regulatory examination (Cheung, Ouyang et al., 2009).

## 1.2. Aims, Objectives and Research Questions

The main purpose of this thesis is to provide a better understanding of the nature of accounting information reliability by measuring the relation between the informativeness of earnings and corporate governance based on the Chinese context with its unique political, social, cultural and economic environment and large sample size. In particular, mainland China has a distinct two-tier board structure comprising a supervisor board including employee representatives and board of directors of whom at least one third are independent directors. The objective of this thesis is to investigate accounting information reliability and corporate governance by addressing three predominant empirical research questions in three studies. The first empirical study aims to examine the impact of board composition and independence on earnings management in mainland China through investigating whether independent directors and supervisors are effective at restraining earnings management. In fulfilling this research aim and objective, the following research questions are developed:

**Hypothesis 1a:** Firms with a greater number of independent directors will constrain earnings management.

**Hypothesis 1b:** Firms with a greater number of supervisors will constrain earnings management.

**Hypothesis 2a:** Firms with a greater number of independent directors with financial/accounting expertise will reduce their engagement in earnings management.

**Hypothesis 2b:** Firms with a greater number of supervisors with financial/accounting expertise will reduce their engagement in earnings management.

**Hypothesis 3a:** Firms with a greater number of independent directors with official backgrounds will be more likely to engage in earnings management.

**Hypothesis 3b:** Firms with a great number of supervisors with official background will be more likely to engage in earnings management.

There is a debate whether SOEs have more incentives to manipulate earnings than in non-state-owned enterprises Non-SOEs. According to financial distress theory, the incentives for Non-SOEs to manipulate earnings are stronger than in SOEs, since SOEs have the advantage to receive financial subsidies from government while Non-SOEs face more financing constraints. The agency theory, however, argues that state ownership in SOEs creates incentives and regulatory backing for self-serving purposes, thus motivating SOEs to manipulate accounting numbers. The political cost hypothesis complements the agency theory and illustrates that SOEs' managers would manipulate accounting numbers in response to government intervention. When the government aims to expropriate the benefits of firms, SOEs would report conservatively to disguise the profits. However, when the government impels firms to enhance performance via stringent government regulations, SOEs would report aggressively to meet specific thresholds. To fully capture the earnings attributes, the second study investigates the quality of reported earnings in China from the perspective of both accounting-based (including accrual quality, persistence, predictability and smoothness) and market-based earnings attributes (including value relevance, timeliness, and conservatism and earnings response coefficient). The objective of this investigation is to compare the difference in earnings quality between State-Owned and Non-State-Owned enterprises through tracking the ultimate controllers instead to grade government intervention. This study tests whether analysts' forecasts are more accurate than forecasts based on time-series predicted statistics with random walk. It further detects how the explanatory power of the earnings/returns relation is enhanced by varying the return interval (13-month, 15-month and 18-month return windows respectively). In fulfilling this research aim and objective, the following research questions are developed:

**H<sub>0</sub>:** There is no difference in the quality of reported accounting information between state-owned listed and non-state-owned listed firms.

**H<sub>1</sub>:** State-owned listed firms have higher quality of reported accounting information than the Non-state-owned listed firms.

The third empirical study aims to detect whether managers intend to manipulate earnings via discretionary accruals in order to just meet or beat consensus analyst forecasts on the basis of analysts forecast error (analysts-based unexpected earnings). Management judgment with respect to determining earnings is often associated with discretionary accruals. Sine managers may use these discretionary accrual choices in an opportunistic manner (perhaps to increase

their own compensation or conceal poor performance) or they may use this discretion to improve the informational value of earnings (perhaps to communicate to investors the long-term performance of the firm). In any case, discretionary accruals are often used as a measure of earnings quality (e.g., Dechow and Dichev, 2002; Francis et al., 2004). Assuming that firms intend to meet or beat market expectations, one would expect that results improve when utilizing a forecast proxy that better represents these expectations. This study improves upon previous studies by considering firms' earnings management with respect to analysts' forecasts. Analysts are hypothesized to understand these earnings management practices and incorporate firms' expected behavior into their forecasts so that the managers try to slightly beat forecasts or maximize positive earnings surprises. Hence, the following research questions are developed:

**H0:** Managers tend to use discretionary accruals to meet or beat analyst forecast.

**H1:** Managers do not tend to use discretionary accruals to meet or beat analyst forecast.

### **1.3. Research Motivation**

The study is motivated by the earnings quality literature in the U.S. and by the recently remarkable developments of corporate governance, accounting and the stock market in mainland China. Although the capital market in China has achieved astonishing development and attracted global attention, it is still regarded as immature, and characterized by weak equity outsiders, strong market speculation, weak form efficiency, rampant earnings management, deceptive financial reporting, and extensive market manipulation (Weetman et al., 2004). The A-shares market is deemed not as efficient as the U.S. stock market (Morck et al., 2000; Wang et al., 2009). The study empirically investigates the value relevance of accounting information in the emerging Chinese stock market on the basis of a large sample of all listed firms in the Shanghai and Shenzhen Stock Exchanges with available data. This research has implications for China's regulators who are striving to improve accounting information, transparency, and corporate governance. The primary goal for this thesis is to provide a better understanding of the nature of accounting information reliability by measuring the informativeness of earnings within the context of the accounting framework for China which has moved from a 'rules-based' to a more 'principles-based' regime.

The extant literature suggests that corporate governance may significantly influence firm accounting and auditing decisions, thus affecting the quality of accounting information.

However, corporate governance in China is significantly different from that in developed markets such as the United States, United Kingdom, or other European countries. In China, the government as the controlling shareholder controls on average nearly two fifths of the stock of state-owned enterprises (SOEs). Before 2005, shares in these companies could not be freely traded at the market price on the open market. In addition, management ownership is much lower in China, averaging only 0.03%. A compounding factor is that legal enforcement in China is very weak, which likely causes board monitoring and corporate governance mechanisms to be ineffective. The failure of gatekeepers (such as independent directors and financial analysts) to prevent harmful earnings management has been attributed mainly to the conflicts between their own interests and monitoring responsibilities. Hence, mainland China is a special and interesting case to be studied for its unique political, social, cultural and economic environment. These institutional characteristics raise the question of how corporate governance influences accounting information quality in China. Hence, this study of Chinese corporate governance and its role in determining earnings usefulness has generalizable implications that cannot be drawn from the prior literature on U.S. and Anglo-Saxon firms.

There are discernible factors suggesting that accounting information may not be as value-relevant in the Chinese market as in a mature market. Firstly, Chinese accounting systems and regulations were traditionally not market-oriented. Most listed companies were state-owned before going public and the purpose of their accounting was not to provide useful information to investors but to facilitate centralized state planning and control. Although the Chinese government issued a separate accounting standard for listed companies as early as in 1992, there have been numerous unresolved issues in implementing a shareholder-oriented accounting system. Consequently, the value of accounting information in the Chinese market has been questioned in the literature (Curran, 1994; Aharony et al., 2000; Haw et al., 1998). Secondly, the reliability of accounting information in China has been a source of concern. Independent auditing is relatively a new phenomenon in China. While it is true that financial statements of listed companies must be audited by CPAs, the quality of audits in China has been generally perceived as low (Aharony et al., 2000). A relatively weak monitoring role by outside auditors may contribute to a lack of confidence in and less use of financial statements. Finally, compared to a mature market such as the U.S., the Chinese market lacks a sufficient level of corporate governance including independent outside directors, audit committees, and competition in the managerial labor market, which weakens investors' confidence in their use of accounting information.



## 1.4. Potential Contribution

This thesis will make potential contributions to the earnings quality literature in several ways. First of all, this thesis provides a better understanding of the nature of accounting information reliability by measuring the relation between the informativeness of earnings and corporate governance based on the Chinese context with its unique political, social, cultural and economic environment and large sample size. The sweeping size of state intervention has made China an ideal research context. A different context, legal institutions, political and economic environment will affect accounting information quality. Second, it will extend the existing literature through examining the relationship between board monitoring (Independent Directors and Supervisory Directors) and earnings management in mainland China with weak corporate governance but stringent regulations which is totally distinct from developed countries and other emerging markets. In addition, the background and the financial expertise of the independent directors and supervisory directors from the fiscal year of 2005 to 2010 are manually collected, which is a huge workload. Third, this research extends the earnings attributes research that has focused mainly on agency cost issues in China by detecting the impact of government ownership on earnings quality, which is an important institutional incentive for financial reporting. To fully capture the earnings attributes, this study classifies accrual quality, persistence, predictability, and smoothness as ‘*accounting-based*’ earnings attributes *and* categorizes value relevance, timeliness, and conservatism as ‘*market-based*’ ones. Few studies statistically test the research area of ERC in China, this research fills in the gap by extending ERC as a function of ‘*market-based*’ earnings quality via detecting earnings surprise, which is measured by: (a) the deviation of actual earnings from a predicated amount based on a time-series model of earnings *and* (b) the deviation of actual earnings from the consensus (median) analyst forecast (analyst forecast error), computed using each analyst’s latest forecast before the earnings announcement. Fourth, while most previous country-level studies give valuable insights into the influence of institutional factors on earnings quality, they do not tell us anything about firm-level earnings quality, which can vary considerably not only across countries, but also across firms within a country. Moreover, not each country has state-owned firms and non-state-owned firms, for instance there are no SOEs in the US. This thesis contributes to the accounting literature by examining firm-level evidence and to inspect the first-order impact of government ownership and its associated institutional incentives on firms’ earnings quality. The firm and industry characteristics provide incremental explanatory power beyond cross-

country variation in determining earnings quality worldwide. Fifth, from the perspective of financial analysts, this study improves upon previous studies by considering firms' earnings management with respect to analysts' forecasts. This study finds that predicted earnings based on the time-series model with drift are more accurate than the consensus analyst forecast earnings. This result conflicts with findings from developed country studies, indicating the malfunction of financial analysts in mainland China. In addition, it summarizes how the explanatory power of the earnings/returns relation is enhanced by varying the return interval (13-month, 15-month and 18-month return windows respectively). Sixth, this thesis provides a better understanding of the properties of analysts' forecasts by modeling firms' earnings management practices and analysts' response to them. While some evidence shows a relation between discretionary accruals and meeting or beating analyst forecasts, firms managing earnings upward or downward to meet consensus forecasts poses a challenge to researchers attempting to directly link these two activities. Consistent with earlier studies (such as Fried and Givoly, 1982; O'Brien, 1988; Klein, 1990 and Abarbanell, 1991), this study also finds an optimistic bias in analysts' forecasts for Chinese listed companies. Finally, this research will provide both theoretical and practical implications for accounting standards setters and provide useful insights into how to improve the quality of reported earnings in China. It has implications for China's regulators who are striving to improve accounting information, transparency, and corporate governance.

## **1.5. Thesis Structure**

This research contributes to provide a better understanding of the nature of accounting information reliability by measuring the relation between the informativeness of earnings and corporate governance based on the Chinese context with its unique political, social, cultural and economic environment and large sample size. The objective of this thesis aims to investigate accounting information quality and corporate governance by addressing three predominant empirical research questions in three studies. This thesis is structured in five chapters as follows.

*Chapter 1* gives an introduction to accounting information reliability and qualitative characteristics in FASB's Conceptual Framework. China is an ideal context to be studied with its sui generis characteristics, which has adopted many of the corporate governance mechanisms applied in developed countries. Thus, the Chinese background and institutional

context have been introduced in this thesis, including an overview of earnings management and corporate governance in China, split share structure reform and Accounting and Financial Reporting Standards application and convergence process and capital markets etc. The aims, objectives and research questions and research motivation and potential contribution as well as thesis structure are all included in Chapter 1.

Following this introductory chapter, **Chapter 2 (i.e. the 1<sup>st</sup> empirical study)** reviews some key papers that have had an influential impact on the literature related to earnings management as well as the empirical research in corporate governance in general. In addition, the concept of earnings management discussed in detail and the most widely used accrual models for capturing earnings management are considered. The distinct corporate governance model with two-tier board structure in mainland China is explained and compared with the American Model, UK Model and German Model in this section. More importantly, it examines the impact of corporate governance on earnings management in China through investigating whether the board composition and the independence, financial/accounting expertise and official background of independent directors and supervisors are correlated to the absolute value of discretionary accruals or discretionary revenue. It focuses on two aspects from the perspective of board monitoring: the role of independent directors on the board and the supervisory directors in constraining earnings manipulation. The key findings in Chapter 2 suggest the Chinese two-tier board structure comprising a board of directors with at least one third independent directors and a supervisory board fails to mitigate earnings management. One possible explanation for this finding is that independent directors and supervisory directors in China are often ‘vases’ and do not work as efficiently as in the developed countries. This indicates the independent directors and supervisory directors cannot voice for the minority shareholders; what they do is simply to agree with whatever the management or larger shareholders want, supporting the agency theory (conflict between controlling shareholders and minority shareholders) and stewardship theory.

**Chapter 3 (i.e. the 2<sup>nd</sup> empirical study)** investigates the quality of reported earnings in China from the perspective of both accounting-based (including accrual quality, persistence, predictability and smoothness) and market-based earnings attributes (including value relevance, timeliness, and conservatism in order to fully capture the earnings attributes. ERC is extended as a function of ‘market-based’ earnings quality via detecting earnings surprise, which is measured by: (a) the deviation of actual earnings from a predicated amount based on

a time-series model of earnings *and* (b) the deviation of actual earnings from the consensus (median) analyst forecast (analyst forecast error), computed using each analyst's latest forecast before the earnings announcement. A two-way test has been conducted to compare the difference in earnings quality between State-Owned and Non-State-Owned enterprises, since there is a debate whether SOEs have more incentives to manipulate earnings than in Non-SOEs. According to financial distress theory, the incentives for Non-SOEs to manipulate earnings are stronger than in SOEs, since SOEs have the advantage to receive financial subsidies from government while Non-SOEs face more financing constraints. The agency theory, however, argues that state ownership in SOEs creates incentives and regulatory backing for self-serving purposes, thus motivating SOEs to manipulate accounting numbers. The political cost hypothesis complements the agency theory and illustrates that SOEs' managers would manipulate accounting numbers in response to government intervention (report conservatively to disguise the profits or report aggressively to meet specific thresholds). It tests whether analysts' forecasts are more accurate than forecasts based on time-series predicted statistics with random walk. This study also detects how the explanatory power of the earnings/returns relation is enhanced by varying the return interval (13-month, 15-month and 18-month return windows respectively).

***In Chapter 4 (i.e. the 3<sup>rd</sup> empirical study)***, it detects whether managers intend to manipulate earnings via discretionary accruals (the residuals derived from the Performance Matched Discretionary Accrual Measure and Forward-looking model and Modified Jones Model) in order to meet or beat analyst forecasts. It provides a better understanding of the properties of analysts' forecasts by modeling firms' earnings management practices and analysts' response to them. This study assigns firms to 'analysts-based unexpected earnings' bins based on the firm's unexpected earnings per share (in cents) and divides the earnings surprise (scaled by stock closing price) range from of -0.1 to 0.1 into 19 bins. Each just-beat and just-miss bin has a width of 0.01, and each firm-year observation appears once in a just-beat group and once in a just-miss group. The empirical results support that none of the discretionary accrual measures are positively associated with meeting or beating the analysts' forecast benchmark. It indicates that managers do not intend to manipulate discretionary accruals to meet or beat analyst forecasts.

***Chapter 5*** discusses the main findings and limitations of this thesis as well as the reflections on Chinese context. It also provides the policy implications and the overall conclusions.

# **Chapter 2 Are Independent Directors and Supervisory Directors Effective in Constraining Earnings Management in China?**

## **Chapter 2**

# **Are Independent Directors and Supervisory Directors Effective in Constraining Earnings Management in China?**

### **2.1. Introduction**

The existing academic literatures about earnings management indicate that there has been a continuous interest in this area (e.g. Barnea et al., 1976; Imhoff, 1977; Ronen and Sadan, 1981; Buckmaster, 1992, 1997; Dechow et al., 1995, 1996; Healy and Wahlen, 1999; Dechow and Skinner, 2000; McNichols, 2000; Fields et al., 2001; Stolowy and Breton, 2004; Peasnell et al., 2005; Ronen and Yaari, 2008). In the good sense, earnings management is an effective way to bridge the information asymmetry between management and shareholders, conveying a signal on future value. In the bad sense, earnings management arises from poor corporate governance, distorting the truth of financial reports (Ronen and Yaari, 2008). Dechow and Schrand (2004) argue that report earnings should reflect current performance, forecast future performance and mirror intrinsic firm value. Consistent with this view, most empirical studies regard earnings management as detrimental to the quality of financial reporting. Studies on earning management in mainland China have flourished in recent years (for instance, Chen et al., 2004; Ding et al., 2007). Although China has adopted many of the corporate governance mechanisms applied in the developed countries, it has its sui generis characteristics with a distinct two-tier board structure comprising a supervisory board and independent directors.

With the eruption of the Internet bubble in 2000, the previously bullish stock markets became bearish, and the ugly truth started to be exposed. In the same year, the first big financial scandal from Xerox was disclosed by \$1.4 billion overstated profits over the past four years. However, it was just the tip of an iceberg. Following the Xerox incident, twenty influential accounting scandals subsequently occurred, including World Com<sup>20</sup>, Adelphia, Tyco, and Global Crossing. Investors suffered losses of hundreds of millions of dollars in these corporate scandals which shook the faith of investors in the integrity of the capital markets.

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<sup>20</sup> The largest collapse was WorldCom's meltdown with estimated losses approximating \$180 billion in 2002.

Studies on earning management in emerging countries are especially important because higher demand for capital in these emerging capital markets can be met only if investors are protected from accounting frauds (Wang et al., 2008). Ewert and Wagenhofer (2011) assert that only corporate governance may play a critical role in dampening real earnings management to some extent. Board of directors are widely accepted to play a vital role in corporate governance, especially in monitoring top management (Fama and Jensen, 1983). Previous US studies indicate that outside directors have great influence on a wide range of board decisions. Outside directors are deemed to make the distinctive contribution in helping ensure that managers act on behalf of the interests of outside stockholders (Fama, 1980; and Fama and Jensen, 1983).

In the context of reliability discussed by Maines and Wahlen (2006), they suggest that for enabling accounting information to be reliable, preparers and standard setters and monitors must be knowledgeable about economic constructs affecting future cash flows, the relation between accounting constructs and these economic constructs, and methods for measuring reliable values. The purpose of this research is to investigate whether boards actively monitor and take actions that reduce the incidence of earnings management when the incentives for manipulations are high. It focuses on two aspects from the perspective of board monitoring: the role of independent directors on the board and the supervisory directors in constraining earnings manipulation. This study use board independence and financial expertise required by CSRC as measures of corporate governance. It examines the impact of corporate governance on earnings management in China through detecting whether the independence, financial or accounting expertise and official background and a higher proportion of independent directors and supervisors are correlated to the absolute value of discretionary accruals or discretionary revenue. The absolute value of discretionary accruals and absolute discretionary revenue are employed here to proxy for earnings management. Hence, this study will also explore the ability of revenue and accrual models to detect earnings opportunistic behaviour.

This study extends the existing literature through examining the relationship between board monitoring (from the perspective of Independent Directors and Supervisory Directors) and earnings management in mainland China with weak corporate governance but stringent regulations. Mainland China provides an interesting experimental setting for investigating these issues since there is greater variation in outside director representation on boards in China than in the UK or in the US and other emerging countries (Peasnell et al., 1999) and

audit committees are not mandatory. It is a special case to be studied for its unique political, social, cultural and economic environment. The People's Republic of China was established as a socialist country in 1949. The new government led by the Chinese Communist Party. Since the Economic Reform<sup>21</sup> in 1978, China has transferred from a centrally planned economy to a market economic system with socialist characteristics. The only form of economic entity before Economic Reform was state-owned enterprise (SOE)<sup>22</sup>. China started to corporatize and privatize the SOEs in the early 1990s, because the government found that the ownership structure of SOEs hinders enterprises' economic efficiency (Tan and Wang, 2004; Chen, 2005). Ownership structure is the primary determinant of agency cost. One feature of Chinese listed companies is that ownership is highly concentrated. Ding et al. (2007) argue that highly concentrated ownership determines the nature of the agency problem in Chinese listed companies. It coincides Shleifer and Vishny's view (1997) that one of the two most effective solutions to the agency problem is concentrated ownership (the other is legal protection). Johnson et al. (2000) suggest that the controlling shareholders pursue their own benefits at the expense of minority shareholders referring to as 'tunneling'.

The results show that Chinese two-tier board structure comprising a board of directors of whom at least one third are independent directors and a supervisory board, fails to mitigate earnings management. The findings are inconsistent with the prediction that outside directors contribute towards the integrity of financial statements. One possible explanation is that independent directors and supervisory directors in China are often 'vases' and do not work as efficiently as in the developed countries. This indicates the independent directors and supervisory directors cannot voice for the minority shareholders; what they do is simply to agree with whatever the management or larger shareholders want, supporting the agency theory (conflict between controlling shareholders and minority shareholders) and stewardship theory. It implies that the market regulators, policy makers and standard setters should pay more attention to enhance the authentic independence of independent directors and supervisory directors in Chinese firms.

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21 It is commonly accepted that one of the main goals of China's market-oriented reforms is to establish a corporate governance system that could provide incentives for investment, adequately restrain and monitor management, and promote the optimal use of resources for wealth creation. (Ronen, J. and V. Yaari, 2008)

22 'SOE employees benefited from housing, medical care, and schooling for their children, with the government providing benefits for maternity, injury, disability, and old age. Many SOEs were heavily subsidized and the government gave them access to bank financing, partly to pay for the social welfare needs of the workers.' (Tricker, 2009, p.192)



The next section 2.2 explains the definitions of corporate governance and earnings management and their relationship and the mechanisms of corporate governance in mainland China as well as the commonly used accrual models proxy for earning management. Section 2.3 presents the theoretical framework for this research. Section 2.4 reviews the empirical literature on the monitoring role of board of directors and supervisory directors. Section 2.5 develops the research hypotheses. The research methodology to identify earnings management and research design are presented in Section 2.6. Section 2.7 explains the definition of variables and measurement. The sample data are described in Section 2.8. The empirical results are presented in Section 2.9. Robustness test results are reported in Section 2.10. The conclusions appear in Section 2.11.

## **2.2. Corporate Governance and Earnings Management**

### **2.2.1. Definition of Corporate Governance**

Considering different sets of conflicts of interest due to the separation of ownership and management, Denis and McConnell (2003) define corporate governance as a set of mechanisms, both institutional and market based, that induce the self-interested controllers of a company (including both managers and controlling shareholders) to make decisions that maximize the value of the company to its owners. Practitioners share the same view. Becht et al. (2003, p.17) provide a relatively more general conceptual framework and define corporate governance as a set of mechanisms that are necessary for two reasons: ‘first, to overcome the collective action problem resulting from the dispersion among shareholders and second, to ensure that the interests of all relevant constituencies besides shareholders face the same basic collective action problem’. Corporate governance deals with the rights and responsibilities of a company’s management, its board, shareholders, and various stakeholders.’ (OECD, 2004)

### **2.2.2. Definition of Earnings Management**

The most influential definitions of Earning Management in the extant literature are from Schipper and Schipper (1989) and Healy and Wahlen (1999). The former defines earnings management as a ‘purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain’. The latter define ‘Earnings Management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial

reports to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported numbers'. They carry an implication of wrong-doing, mischief, fraud and even mystery, similar to other criminal activities (Lo, 2008).

### **2.2.3. Basic Forms of Earnings Management**

According to Ewert and Wagenhofer' summary (2011), earnings management mainly takes two basic forms. First, *accounting (accruals-based) earnings management* starts with given transactions and aims at influencing the recognition, measurement, and disclosure of these transactions and other events in the financial statements after the fact. Recognition and measurement choices affect net assets and earnings in a period and they usually reverse in future periods (except for certain effects that are recognized directly in equity and presented in other comprehensive income without reverse), thus clean surplus prevails. Disclosure choices may affect the amount of information provided in financial statements, but do not change the numbers reported in the balance sheet and income statement. Second, *real (economic) earnings management* includes performing or structuring transactions that are then reported in the financial statements to affect the reported numbers. The transactions generally influence total cash flows negatively, so they do not fully reverse. However, real earnings management is costly to the firms and is a kind of signal jamming activity. The accounting consequences for these transactions are given, and they may not even provide discretion. Thus, accounting standards usually fail to stop managers from this type of earnings management as they are unable to distinguish between normal transactions and those that are simply induced by earnings management incentives.

Accounting (accruals-based) earnings management is often constrained by the clean surplus condition that requires that it reverses because cash flows are not affected. Nevertheless, real earnings management is not subject to clean surplus, although it also shifts real earnings from one period to the other. A key difference need to notice is that a standard setter can strengthen accounting standards to restrict the discretion for accounting earnings, but it can do little if anything to restrict real earnings management. Outside auditors or enforcement agencies assume real transactions as given and scrutinize how they are reported in the financial statements. Only corporate governance may play a critical role in dampening real earnings management to some extent (Ewert and Wagenhofer, 2011).

#### **2.2.4. Summary of the commonly used Accruals models**

Researchers frequently use measures of discretionary accruals in tests for earnings management and market efficiency. This section introduces the general representations of those models that have been most commonly used in the extant literature to capture earnings manipulation behaviour. In [Table 2.1](#), it summarizes the commonly used accruals models with an introduction of research design of the approach and criticisms in terms of the generalization of Dechow et al. (1995). They evaluate alternative accrual-based models for detecting earnings management and compare the specification and power of commonly used test statistics across the measures of discretionary accruals generated by the models. Dechow et al. (1995) conclude that a modified version of the model developed by Jones (1991) exhibits the most power in detecting earnings management. A modified Dechow et al. (1995) model that controls for the effect of performance by either adding ROA as an additional independent variable or by using performance-matched portfolios, which proved to be a better approach. Kothari et al. (2005) examine the specification and power of tests based on performance-matched discretionary accruals, and make comparisons with traditional discretionary accrual models (e.g. Jones and modified-Jones models). Performance matching on return on assets controls for the effect of performance on measured discretionary accruals. Their results suggest that performance-matched discretionary accrual model enhance the reliability of inferences from earnings management research when the hypothesis being tested does not imply that earnings management will vary with performance.

#### **2.2.5. Corporate Governance Mechanisms in China**

Tricker (2009) considers that two decades ago corporate governance in China virtually did not exist. China introduced the OECD corporate governance practices in 2001. Since 2003, Chinese firms have been demanded by law to follow several OECD practices. A corporate governance infrastructure has been built, something that did not exist before the crisis. This infrastructure includes corporate governance committees, institutes of directors and many other institutions. Recent developments of corporate governance in China have been remarkable and received much attention (Liu, 2006; Cheung et al., 2010).

Table 2.1 Summary of the commonly used accruals models

Model	Formula	Approach	Critique
Healy 1985 Model	$NDACC_t = \frac{1}{EP} \sum_j^{EP} \frac{TACC_j}{TA_{j-1}}$	The non-discretionary accruals are estimated as the average total accruals for a given estimation period prior to the period of interest.	The model presumes that earnings management occurs systematically each period.
DeAngelo 1986 Model	$NDACC_t = \frac{TACC_{t-1}}{TA_{t-2}}$	The normal accruals are defined as the lagged total accruals. This is a special version of Healy's model where the estimation period available consists of one year.	The model assumes that firm's non-discretionary accruals keep constant, while accruals are changing with the firm's economic circumstances from period to period.
Jones 1991 Model	$\frac{TACC_t}{TA_{t-1}} = \alpha_1 \left( \frac{1}{TA_{t-1}} \right) + \alpha_2 \left( \frac{\Delta REV_t}{TA_{t-1}} \right) + \alpha_3 \left( \frac{PPE_t}{TA_{t-1}} \right) + \varepsilon_t$	The non-discretionary accruals are estimated as a function of revenue growth and the size of the firm's property, plant and equipment.	The model hypothesizes that accrual revenues are not subject to the managers' discretionary power.
Dechow et al. 1995 (Modified Jones) Model	$\frac{TACC_t}{TA_{t-1}} = \alpha_1 \left( \frac{1}{TA_{t-1}} \right) + \alpha_2 \left( \frac{\Delta REV_t - \Delta AR_t}{TA_{t-1}} \right) + \alpha_3 \left( \frac{PPE_t}{TA_{t-1}} \right) + \varepsilon_t$	A modified Jones model that considers the change in revenues after deducting the change in trade receivables. They argue that exercising managerial discretion over the recognition of credit revenues is much easier than exercising discretion over cash revenues.	The residual is significantly correlated with the firm's performance. Null hypothesis cannot be rejected for firms with good performance due to the bias of estimation.
Kothari et al. 2005 (Performance-Matched) Model	$TACC_t = \alpha_0 + \alpha_1 \left( \frac{1}{TA_{t-1}} \right) + \alpha_2 (\Delta REV_t - \Delta AR_t) + \alpha_3 (PPE_t) + \alpha_4 (ROA_{t[or\ t-1]}) + \varepsilon_t$	A modified Dechow et al. (1995) model that controls for the effect of performance by either adding ROA as an additional independent variable or by using performance-matched portfolios, which proved to be a better approach.	Controlling for firm performance reduces the model's power in this model.

In 2001, the *Code of Corporate Governance for listed companies*<sup>23</sup> promulgated by CSRC and State Economic and Trade Commission, sets forth the basic principles for corporate governance of Chinese listed companies, the means for the protection of investors' interests and rights, the basic behavior rules and moral standards for directors, supervisors, managers and other senior management members. Since the enactment of the *1994 Company Law*, the corporate governance system has played an important role in bringing vitality to Chinese enterprises. Under this law, a two-tier Board structure for Chinese companies was introduced and Supervisory Board is mandatory for a joint stock limited company. The *2006 Company Law*<sup>24</sup> amended based on the *1994 Company Law*, influences the Board monitoring in three aspects: (1) a significant enhancement of the effectiveness of the Supervisory Board; (2) a modest strengthening of participation by workers, and (3) the independent director system for listed companies is codified (Article 123.2) (Xi, 2006).

According to Liu (2006), good corporate governance in essence incorporates a set of mechanisms to ensure that suppliers of finance get an adequate return on their investment. There is no exception including China. The corporate governance mechanisms adopted in China are based on a framework proposed in Bai et al. (2004). Generally speaking, there are two types of mechanisms that resolve the conflicts especially between owners and managers, and those between controlling shareholders and minority shareholders. The first type consists of various internal mechanisms, such as the ownership structure, executive compensation, the board of directors and financial disclosure. Among the aforementioned four internal governance mechanisms, ownership structure is crucial to the firm's value maximization. The second are external mechanisms, comprising the effective takeover market, legal infrastructure and product market competition.

Researchers and scholars debate how China can develop an effective corporate governance system to improve the listed companies' performance and protect the minority shareholders. Many studies investigate whether good governance structures help constrain management's opportunistic behaviours in one of the world's most dynamic economies and suggest that good corporate governance serves as an effective mechanism to constrain the managers' opportunistic behaviours and to improve a company's reporting quality, and hence increase firm value (e.g., Chen et al., 2009; Bhagat and Bolton, 2008; Denis and McConnell, 2003).

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23 See [http://www.csrc.gov.cn/pub/csrc\\_en/newsfacts/release/200708/t20070810\\_69223.htm](http://www.csrc.gov.cn/pub/csrc_en/newsfacts/release/200708/t20070810_69223.htm)

24 See [http://www.npc.gov.cn/englishnpc/Law/2007-12/12/content\\_1383787.htm](http://www.npc.gov.cn/englishnpc/Law/2007-12/12/content_1383787.htm)

### **2.2.5.1. Models of Corporate Governance**

On the basis of Tricker (2009) and Tan and Wang (2004) and Wei (2003), this study compares Chinese Model with the American Model, UK Model and German Model, see details as presented in [Table 2.2](#) as follows. In China, the current corporate governance system combines features of the Anglo-American model with the German model while having its sui generis characteristics. Prima facie, the mechanism is identical to the two-tier system in Germany and Japan, in which firms are governed by a board of directors and a supervisory board. However, there is a substantial difference (see details as described in [Table 2.2](#)). In Chinese listed firms, there is no hierarchical relationship between the board and supervisory board, which are both appointed by, and report to shareholders' general meetings. Under the German model, the supervisory board is superior to the board of directors. The supervisory board in China has been criticized for its dysfunction (Dahya, Karbhari and Xiao, 2002). Therefore, the monitoring function rests on the directors on the board and especially on independent directors after 1999, when Chinese Security Regulation Commission (CSRC) commenced to emphasize the importance of independent directors. The definition of independent directors was first introduced in the Guidelines on Company Chapter of Listed Companies by CSRC as an optional article in 1997. An official and comprehensive guideline on independent directors was enacted, which required domestically listed companies to appoint at least on third independent directors on board of directors by 30<sup>th</sup> June, 2003.

To sum up, Chinese corporate governance system is closer to Anglo-Saxon one-tier structure (Chen and Al-Najjar, 2012). The State Assets Management Bureau (SAMB) was elevated to ministerial level as the State-owned Assets Supervision and Administration Commission (SASAC)<sup>25</sup> in 2003 (Wang 2010). SASAC has considerable power over SOEs in China, including the appointment and dismissal of directors and top executives of the supervised enterprises. SASAC holds Chinese Government's shareholding<sup>26</sup> in all Chinese listed companies except the financial institutions. In terms of Fama and Jensen (1983), the Board of Directors was introduced as an important element of corporate governance to align the

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25 The SASAC, authorized by the State Council in accordance with the Company Law and other administrative regulations, performs investor's responsibilities, supervises and manages the State-owned assets of the enterprises under the supervision of the Central Government (excluding financial enterprises), and enhances the management of the State-owned assets. SASAC guides and pushes forward the reform and restructuring of state-owned enterprises, advances the establishment of modern enterprise system in SOEs, improves corporate governance.'

26 At the end of 2008, the total assets held by SASAC amounted to RMB5.56 trillion.  
<http://xxgk.sasac.gov.cn/gips/contentSearch?id=7379976>

interests of shareholders and managers to reduce agency costs stemming from the separation of ownership and control. In the unitary board structure, a company's Board of Directors plays an administrative role comprising executive and non-executive directors and consists of a Supervisory Board and a Management board. The Supervisory Board, comprising non-executives, represents the interest of shareholders and monitors the management board. The Management board conducts the daily operation of the firm and reports to both Supervisory Board and shareholders.

#### **2.2.5.2. Independent Directors**

In 2001, *Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies*<sup>27</sup> set by CSRC requires independent directors to be qualified persons. The requirement for no less than one third of independent non-executive directors on the Boards of Directors by 30<sup>th</sup> of June, 2003 indicates that China's corporate governance practices move towards Anglo-American practices. The monitoring role of independent directors is especially relevant in jurisdictions where there is no separation of ownership and control, such as in mainland China. Individuals in China are limited to five independent directorships in listed companies. Independent directors could be nominated by the Board of Directors, Supervisory Board or any shareholders holding five percent of the company's shares (Tricker, 2009, p.194). The definition of independent directors is as follows:

*'Independent directors of the listed company refer to the directors who hold no posts in the company other than the position of director, and who maintain no relations with the listed company and its major shareholder that might prevent them from making objective judgment independently. The qualified independent directors should have 'more than five years' work experience in law, economics or other fields. Independent directors should ensure financial decisions represent the best interests of all shareholders and should not result in biased earnings or cash flows towards the managers, controlling shareholders, or the minority shareholders' (CSRC, 2002).*

From the abovementioned definition, independent directors are supposed to have the same function as non-executive directors in the Anglo-American model. Independent directors in China are granted special powers including that 'major related party transactions should be approved by the independent director before being submitted to the board of directors for discussion' (Wang, 2010).

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27 See [http://www.csrc.gov.cn/pub/csrc\\_en/newsfacts/release/200708/t20070810\\_69191.htm](http://www.csrc.gov.cn/pub/csrc_en/newsfacts/release/200708/t20070810_69191.htm)

Table 2.2 Comparison of Board Models

Items	American Model	UK/Commonwealth Model	Continental European Model	Chinese Model
<b>Board Structure</b>	Unitary Board Model with a majority of non-executive directors	Unitary Board Model with a majority of non-executive directors	Two-Tier Board Model with equal number of employee representatives and shareholder representatives in the Supervisory Board	Two-Tier Board Model with at least 1/3 independent directors and employee representatives in the Board of Directors and Supervisory Board respectively
<b>Application Area</b>	Corporate governance practices required in the US and its influence on other countries	Corporate governance practices required in the UK and Australia, Canada, India, New Zealand, South Africa, and Singapore etc.	Corporate governance practices required in Germany, Holland and France and Italy	Corporate governance practices required in mainland China
<b>Compliance with Corporate governance code</b>	It is ruled-based, in which the governance is regulated by legal statute and mandatory rules and lack of flexibility	It is principles-based, in which voluntary compliance with the corporate governance code or good practice	It is ruled-based, in which the governance is regulated by legal statute and mandatory rules and lack of flexibility.	It is ruled-based, in which the governance is regulated by legal statute and mandatory rules and lack of flexibility.
<b>Independence of the Chairman</b>	Usually Chairman is also CEO	Chairman is required to be separate from the role of CEO	Chairman is separated from CEO	Equivalent to the CEO in Western countries, General Manager is the statutory title in any limited liability company; Chairman often is also General Manager
<b>Power of the Board</b>	Company law gives a wider range of power to the Board of Directors and a smaller scope of authority to the shareholders' meetings	Company law gives a wider range of power to the Board of Directors and a smaller scope of authority to the shareholders' meetings	Supervisory Board in Germany plays a crucial role in corporate governance, and it is above Board of Directors, e.g. have right to appoint and dismiss Board members; the executive directors in Germany attend the meetings hold by Supervisory Board, and have right to vote.	The shareholders' meeting is the organ of power in a firm, both Board of Directors and Supervisory Board have to report to the shareholders' meeting. Chinese Company law entitles Supervisory Directors to attend meetings of the Board of Directors, but no right to vote.
<b>Corporate Board Secretary<sup>28</sup></b>	Widely missing in the US	Each UK Company has corporate board secretary; but it is widely missing in Austria, Denmark and Norway.	it is widely missing in Germany	Chinese listed companies normally have corporate board secretary who is included in the top management
<b>Shareholders' Influence on Board directors</b>	Little influence	Shareholders have 10 percent of voting rights in a public company, can call for an extraordinary meetings and vote on strategic decisions or dismiss a director.	Banks wield power on corporate affairs with large equity stakes in the German companies other than their roles as creditors	Controlling shareholders have significant influence on Board directors

10 The role of Corporate Board Secretary (CBS) is usually narrowly defined and too often focused on the secretarial responsibilities. However, in a majority of cases in Finland, the Netherlands and Sweden, the role is combined with that of legal counsel (Heidrick & Struggles, *European Corporate Governance Report 2011*). See <http://www.heidrick.com/ExecutiveSearch/Pages/ExecutiveSearch.aspx>



### **2.2.5.3. Supervisory Board**

Hu *et al.* (2010) state that the two-tier board is a primary governance structure to safeguard the minority shareholders' interests. Though inspired by German system, China does not simply copy it. The two Boards are obliged to submit their reports to the shareholders' meeting for review and approval. In essence, several important differences distinguish the Supervisory Board in China from that in Germany and other European countries adopting two-tier boards. Firstly, unlike the superior-subordinate relationship between the Supervisory Board and Board of Directors in Germany, it is a parallel relationship under the shareholders' meeting in China. But in fact the Supervisory Board is perceived inferior to the Board of Directors. Secondly, in Germany, the Supervisory Directors appoint and oversee the Board members and have right to dismiss if they perform poorly. However, the Supervisory Directors in China don't have such power. Thirdly, Firth *et al.* (2006) describe that Chairmen are full-time executives with more significant power than CEOs in China. Finally, top management usually started their careers as government bureaucrats and consequently may have different mindsets from those in the US and Europe (Xiao *et al.*, 2004).

Wang and Liu (2006) and Liu *et al.*(2010) argue that most of the staff supervisors are representatives of government cadres or labor models, whose remuneration and position decided by the Board of Directors. Therefore, the supervision independence of workers representatives has been weakened. In order to strengthen the Supervisory Board's functions and rights, *2006 Company Law* adds Disposal Right, Proposal Right, Convening and Presiding Right of Shareholder Meeting, and Litigation Right.

### **2.2.5.4. Ownership Structure**

Ownership structure is crucial to the firm's value maximization. Concentrated ownership gives the largest shareholders a substantial discretionary power to use the firm's resources for personal gain at the expense of other shareholders. Concentrated share ownership has implications for the level of information asymmetry between managers and investors and influences the informativeness of accounting earnings and managers' accounting choices (Fan and Wong, 2002; Donnelly and Lynch, 2002). To capture the ownership aspect of corporate governance, this study calculates the stake of the largest shareholder, and uses it to measure both the largest shareholder's interest in a company and also the largest shareholder's power on the board (Lo, Wong and Firth, 2010). According to Liu and Lu

(2007), a typical characteristic of most listed SOEs' ownership structure in China is that a parent company usually exists. CSRC allowed listed companies to remunerate managers with stock options from mid-2005 (Ding *et al.*, 2007 and Tricker, 2009). In addition, Chinese government still retains a significant proportion (about two thirds) of shares when an SOE goes public to preserve the socialist structure of the economy and prevent the mass privatization of SOEs. Thus, the ownership structure and corporate governance structures will influence the quality of financial information contained in accounting earnings and managers' discretionary accounting choices.

Shleifer and Vishny (1986) and Morck *et al.* (1989), as cited in Firth *et al.* (2007), suggest that different ownership structures imply different incentives to control and monitor a firm's management. This idea is supported by Tricker (2009). The types of ownership have profound influence on the ability of a board to exercise its power over a company. Nearly 80 percent of Chinese listed firms with a highly concentrated ownership structure are controlled by the government, and the level of management ownership in China is much lower than in other countries. The corporate governance in China is significantly different from that in the United States, United Kingdom. Although there are many regulations, standards and laws, their enforcement is fairly weak in mainland China. The management incentives and pressures differ among the various types of firms, especially between SOEs and non-SOEs. This provides us with an opportunity to investigate management incentives and conservative accounting in such an emerging economy. As the degree of state control in China is probably higher than that in most other countries, non-financial and budget information probably plays a greater role in China than elsewhere. It would be useful to study how information flows between government agencies and firms, and how the expectations of both parties are coordinated.

Ownership structure impacts on corporate governance through incentive alignment and entrenchment. The incentive alignment effect occurs when the profit, or firm value, maximization objective of the minority shareholders is consistent with that of large shareholders, who in turn have more expertise and capability to monitor managers (Shleifer and Vishny, 1986). Empirical evidence confirms this by showing that firms with large shareholders are associated with higher management turnover (Kang and Shivdasani, 1995) and tighter executive compensation control (Hartzell and Starks, 2003). The entrenchment effect of large shareholders is conceptually similar to the effect when managerial ownership

is high. Both theoretical and empirical studies suggest that managers with a greater degree of ownership have more incentive to expropriate the wealth of outside shareholders, which in turn reduces the value of the firm. On the other hand, Shleifer and Vishny (1997) argue that large shareholders who gain effective control of a firm's management also have a greater incentive to pursue their own interests.

Khanna et al. (2006) and Doidge et al. (2007) suggest that institutional factors are the main source of variation in firm-level governance and transparency; this indicates a complementary role between country and firm-level governance and highlights the limits of convergence in corporate governance regimes. Warfield et al. (1995) examine the effect of managerial ownership on the informativeness of earnings and discretionary accruals. They argue that higher managerial ownership reduces the agency cost of information asymmetry, and therefore reduces earnings management. However, management, employee, and foreign shares account for a very small proportion of Chinese firms' issued share capital (Firth *et al.*, 2002 and Xu, 2004 as cited in Firth *et al.*, 2007). Managerial ownership in China is too minimal to generate an incentives alignment effect or entrenchment effect. Fama and Jensen (1983) and Jensen (1993) provide a relevant argument that is more applicable to China. They argue that when managerial ownership is low, companies need larger, more independent boards to monitor top management. This argument is consistent with the substitution effect of alternative governance mechanisms.

#### **2.2.5.5. Institutional Shareholders**

The issue of stock liquidity is another factor that may explain the variations of value relevance among firms in China. Although individual and institutional holdings constitute a company's total tradable shares as in other stock markets, retail investors generate most of the trading volume in the Chinese market. Institutional shareholders in China are defined as those other than individual investors and they are generally government-owned organizations such as state-owned enterprises, universities, and administrative agencies. They are clearly different from institutional investors in the West. While institutional shareholders in China may hold a large percentage of a company's stock, their ability to trade is severely restricted by the government policy and trading rules in China. The institution-held shares can only be transferred to other institutions with approvals from the government. The transfer price is based on negotiations rather than the market price. Consequently, a higher percentage of

individual holdings may indicate a more active market, and it is through an active market that stock prices have the potential to fully reflect public information including accounting information. However, non-government institutional investors (e.g., insurance companies, mutual funds, and pension funds) are far less common in China. Therefore, managerial and institutional ownership are not likely to influence accounting quality in China.

Regulatory effort has been made in China to develop mutual funds in recent years. For example, Chinese government made a strategic decision to cultivate the ‘pillar role’ of mutual funds, among other financial institutions in domestic stock markets in 2000 (CSRC, 2000). Mutual funds are now encouraged to invest in listed companies in the expectation that they can monitor corporate decisions and counter speculative behaviors by individual investors (e.g., free-riding problems). According to the CSRC statistics, at the end of 2005, there were 54 closed-end and 164 open-end mutual funds in China. By the end of June 2007, the number of open mutual funds in China had grown to 343. In countries like the US and the UK, the role of institutional shareholders is mainly to monitor managerial activities and thereby mitigate the shareholders-manager agency problem. In contrast, the concentrated ownership structure in China places mutual funds in a unique governance role in monitoring the controlling shareholders and safeguarding the interest of minority shareholders. The Qualified Foreign Institutional Investors (QFII) Program, effective from December 2002, offers foreign investors access to the domestic A-shares market for the first time. This represents a significant step towards capital market opening-up in China, which is likely to bring significant pressure and challenges to mutual funds in China (Chen et al., 2005).

## **2.3. Theoretical Framework**

### **2.3.1. Agency Theory**

Agency theory addresses the question of the separation of ownership and control, as identified by Berle and Means (1932). They state that, in practice, managers of a firm pursue their own interests rather than the interests of shareholders. There are three significantly influential articles about agency theory discussed in Eisenhardt’s paper (1989). Jensen and Meckling (1976) investigate how equity ownership by managers aligns the interest of managers with that of owners. Fama (1980) describes the role of efficient capital and labor markets as information mechanisms to control the self-serving behavior of top executives.

Fama and Jensen (1983) discuss the role of board of directors as an information system for the stockholders within large companies monitoring the opportunistic behavior of top executives.

Jensen and Meckling (1976) extended the risk-sharing literature by incorporating the so-called agency problem that occurs when co-operating parties having different attitudes towards risk. They define an agency relationship as a contract, in which one party (the principal) delegates work to another (the agent), who performs that work on behalf of the principal. In the paper carried out by Eisenhardt (1989), she proposes that agency theory is mainly concerned with two problems. Firstly, the agency problem arises when (a) the desires or goals of the principal and agent conflict and (b) it is difficult or expensive for the principal to verify what the agent is actually doing and whether the agent has behaved appropriately. Secondly, agency problem occurs when the principal and agent have different attitudes towards risk preferences or risk aversion. Since the interest of the agents is not always in line with that of the principals, the agents may act for themselves even though their behaviors will harm the interest of the principals. To ensure the agents act properly for the principal, the principals have to pay extra costs which are called 'agency costs'.

Ownership structure is regarded as the primary determinant of agency cost. Following Berle and Means (1932), Jensen and Meckling (1976) and Roe (1994) indicate the agency problems stem from the conflict of interests between the shareholders and managers when ownership is diffuse such as in the USA and the UK. On the other hand, ownership is highly concentrated such as the circumstances in East Asia, the agency problem stem from the conflicts between controlling shareholders and minority shareholders (La Porta *et al.*, 1998; Claessens *et al.*, 2000; Faccio and Lang, 2002). One distinct feature of Chinese listed companies is that ownership is highly concentrated. Ding *et al.* (2007) argue that highly concentrated ownership determines the nature of the agency problem in Chinese listed companies. It coincides Shleifer and Vishny's view (1997) that one of the two most effective solutions to the agency problem is concentrated ownership (the other is legal protection). Ownership structure is crucial to the firm's value maximization. Concentrated ownership gives the largest shareholders a substantial discretionary power to use the firm's resources for personal gain at the expense of other shareholders. Johnson *et al.* (2000) suggest that the controlling shareholders pursue their own benefits at the expense of minority shareholders referring to as 'tunneling'. Furthermore, there is one more agency problem in Chinese state-owned

enterprises than in privately-owned companies because there is an extra agency relationship in SOEs, as the controlling owners are themselves agents of the true owners: the state.

Controlling shareholders tends to have fewer agency conflicts with managers and boards of directors, because there is little separation between ownership and control, directors and managers can be hand-selected and appointed. Therefore, the demand for high-quality financial reporting disclosures for the purpose of monitoring management seems less important in firms with controlling shareholders than those with dispersed ownership which rely on outside directors to monitor management (LaFond and Watts, 2008). When government dominates as a controlling shareholder, its social purpose is considered to generate major conflict of interests between the controlling owner and the minority owner. Since the controlling shareholders have the incentives and access to extract private gains from control, for instance, self-serving investments (Shleifer and Vishny, 1997). Ajinkya et al. (2005) draw a similar conclusion that institutions with concentrated (block-holder) ownership have access to superior private information and are less likely to demand high-quality and timely disclosures of accounting information. Similarly, Fan and Wong (2002) and Francis et al. (2005) assume firms dominated by controlling shareholders have less governance-related demand for high-quality financial reporting, hence allowing controlling shareholders to protect proprietary information through less transparent financial reporting.

### **2.3.2. Stewardship Theory**

A different stream of literature takes a principal-agent approach and focuses on the stewardship role of financial reporting in which the manager's compensation is endogenously set by the principal (see for example, Beyer et al., 1996). As expressed by Davis et al., (1997, p.21) '*Stewardship theory defines situations in which managers are not motivated by individual goals, but rather are stewards whose motives are aligned with the objectives of their principals*'. In essence, this theory assumes that managers have the incentives to practice earnings management to influence their firms' value in line with the wealth maximisation objective of shareholders. Therefore, accounting earnings are not only utilized in equity valuation, but also in measuring managerial performance and how well the managers are delegating the interest of their shareholders (Dechow, 1994).

## 2.4. Empirical Literature Review

Through making comparison of 31 countries, Leuz *et al.* (2003) find that corporations in those countries with developed capital markets (e.g. the United States, Australia and the United Kingdom), dispersed ownership structures, strong investor protection and strong legal enforcement engage in less earnings management. They develop a scoring method to measure earnings management in various countries and employ four measures of earnings management: (1) the volatility of earnings relevant to the volatility of cash flows; (2) the correlation between cash flows and accruals; (3) the extent of discretion in accruals based on the absolute magnitude of accruals relative to the absolute value of cash flows and (4) the extent of loss avoidance. In the developed capital markets, boosting the company's stock price appears to be a major motivation for earnings manipulation, since it is often regarded as the benchmark for managerial compensation, stock options or other incentive schemes. However, it is not the case in China; the floating shares often account for only a small proportion of listed firms' total shares and before mid-2005 stock options were prohibited (Ding *et al.*, 2007; Conyon and He, 2011). Highly concentrated ownership by the State, multiple goals of listed companies other than profit maximization, weak legal enforcement, inadequate financial disclosure, controlling shareholders' expropriation of minority shareholders' interests and short-term speculative investments are the characteristics in China (Liu 2006; Cheung, Jiang *et al.* 2010; Chen, Li *et al.* 2011). Based on prior literatures (e.g. Young *et al.*, 2008), Chen *et al.* (2011) summarize the ways in which controlling shareholders expropriate the minority shareholders' interests. Ding *et al.* (2007) examine the relationship between ownership concentration and earnings management. Based on Shleifer and Vishny's findings (1997), Liu and Lu (2007) and Ding *et al.* (2007) provide strong evidence that the conflict of interests between the controlling shareholders (the State) and minority shareholders is the root cause of the earnings management phenomenon in China.

Some studies have focused on how governance shapes the actions of the CEO and top managers. For example, company ownership and boardroom structures, which represent a firm's governance style, have been used to help explain management's actions on corporate restructuring (e.g., Denis *et al.*, 1997; Ahn and Walker, 2007; Netter *et al.*, 2009; Bauguess *et al.*, 2009), dividend decisions (Brav *et al.*, 2005), and the pricing of executive stock options (Chidambaran and Prabhala, 2003). Other examples include how governance has constrained managers' opportunistic manipulation of discretionary accruals in a firm's financial

statements (Chung et al., 2002; Park and Shin, 2004), inter-group borrowings (Berkman et al., 2009), and corporate fraud (Chen et al., 2006). These manipulations leading to distortion of financial statements cause greater information asymmetry. According to Chen *et al.*'s research (2008), lack of an audit committee and outside directors in the Board is regarded as the important catalyst for earnings manipulation. Through the empirical examination on US companies, Agrawal and Chadha (2005) conclude that only if the outside directors have accounting/financial expertise, the probability of earnings management will be reduced. It is consistent with Park and Shin's (2004) findings on the basis of the sample data from Canada. Peasnell *et al.* (2005) report that outside directors are effective in constraining earnings management in the UK after the release of the Cadbury Committee Report (1992). There are also findings from Taiwanese listed companies indicating that the true independence and financial expertise of independent directors and supervisors lower the degree of earnings management (Chen, Elder et al. 2007).

Good corporate governance mechanisms, in terms of the characteristics of the board of directors and corporate ownership, should enhance the fairness among the different stakeholders in the business (Collier and Esteban, 1999; Jensen, 2005; Matten and Crane, 2005). For example, independent directors should ensure that financial decisions are made in the best interests of all shareholders and should not result in earnings or cash flows that are biased toward the managers, controlling shareholders, or minority shareholders (Donaldson and Preston, 1995; CSRC, 2002). Managers probably have a strong financial reporting incentive to shift income inward to maximize their performance-linked bonuses or to avoid losses (Lo et al., 2007). Prior research suggests that board independence, as measured by the percentage of independent directors, can improve corporate governance although its effectiveness depends on the business and regulatory compliance environment (Hermalin and Weisbach, 2003; Xie et al., 2003; Berghe and Baelden, 2005; Iwasaki, 2008; Cornett et al., 2009).

Common-law countries, such as the US and UK, are characterized by 'arms-length' transactions, diversity of external investors, fairly frequent hostile takeovers and a relatively high risk of litigation. In code-law countries, such as Germany and China, the stock markets are less active and have relatively low litigation rates (Majoor and Vanstraelen 2006). Unlike the US and UK, an active corporate control market does not exist in China (Pistor and Xu 2005; Liu 2006). China's capital markets are underdeveloped with strong information



asymmetry between investors and companies. Hence, the investors are engaged in market speculation and sensitive to short-term stock price volatility. To some extent, the stock prices may not reflect the firms' true performance (Peng 2004; Lin and Swanson 2008). Burgstahler, Hail, and Leuz (2006) find that strong legal systems are associated with decreased earnings management. In developing markets with concentrated ownership, especially those in East Asia, managers are usually appointed and controlled by controlling or ultimate shareholders, and firm behavior reflects the will of these shareholders. Managers play a less important role than do those in firms in other markets, such as the United States, because the control of controlling shareholders and ultimate shareholders is significant. Ultimate shareholders with few cash flows rights can build powerful empires via the pyramid structure, and this incentive is evident in countries and regions with a weak legal system and undeveloped economy (La Porta et al., 1999; Claessens et al., 2000).

Both internal and external corporate governance mechanisms are weak or non-existent in China (Weetman, 2004 and Tricker, 2009). For example, externally the market for corporate control and managerial labor market are seriously underdeveloped, while internally it was not until 2002 that independent directors and audit committees appeared in listed companies. Not surprisingly, in a study of earnings management it was found that companies increased their non-recurring income to satisfy a regulation requiring a 10 per cent return on net assets as a condition for a rights issue of shares (Haw et al., 1998). The problem of creating fictitious transactions to falsify profits or conceal speculation appears much more severe than earnings management and leads to lack of confidence in annual reports or an accounting 'Information Crisis' as mentioned earlier (Chen et al., 2000). These irregularities in financial accounting and reporting suggest that the capital market does not provide sufficient monitoring of opportunistic behavior, nor does it provide sufficient incentives for listed companies to supply high quality information.

Fan and Wong (2002) develop two complementary arguments referring to the relationship between ownership structure and earnings informativeness. The first argument is related to the entrenchment effect of ownership concentration (Morck et al., 1988). The countries in East Asia are characterized by highly concentrated corporate ownership. As the controlling owners are entrenched by their effective control of the firms, their decisions that deprive the rights of minority shareholders are often uncontestable in the weak legal systems (Shleifer and Vishny, 1997; La Porta et al., 1999; Johnson et al., 2000b). Moreover, due to the

complicated pyramidal and crossholding ownership structures typical in East Asian companies, a significant number of controlling owners in the region actually possess more control than their equity ownership indicates, which further exacerbates the entrenchment effect.

'Bonus Hypothesis'<sup>29</sup> and 'Debt Hypothesis'<sup>30</sup> proposed by Watts and Zimmerman (1990) have received strong support. Healy (1985) and Gaver *et al.* (1995) and Holthausen *et al.* (1995) support evidences for bonus hypothesis. Dechow *et al.* (1996) also discover there is an important motivation for earnings manipulation to attract external financing at low cost and avoid debt covenant restrictions by detecting those firms which have violated US GAAP. Nevertheless, they don't provide any systematic evidence that managers manipulate earnings to acquire a larger earnings-based bonus or to sell their shares at inflated stock prices. Healy and Wahlen (1999) summarize the incentives for earnings management as: (1) capital market motivation, (2) contracting motivation, and (3) regulatory motivation. Based on the summary of Healy and Wahlen (1999), Beneish (2001) adds the motivation for insider trading. Meeting or exceeding the regulatory profitability threshold is also a strong incentive for Chinese listed companies to manipulate earnings, such as acquiring the authorization for IPO, rights issue and avoiding delisting due to CSRC's reliance on ROEs (Wong and Jian 2003; Chen and Yuan 2004; Yu, Du *et al.* 2006; Ding, Zhang *et al.* 2007; Liu and Lu 2007; Chen, Wang *et al.* 2008; Chen, Lee *et al.* 2008; Chen, Wang *et al.* 2010). Empirically, the 6 percent and 10 percent thresholds have been tested and proved to be the critical threshold in China in some studies (Chen, Wang *et al.* 2008; 2010) by employing mixed normal distribution to explore the frequency and magnitude of earnings management.

Chen *et al.* (2008) argue that in China incentives for meeting or beating analysts' forecast do not exist because the analysts only play a primitive role in the Chinese stock market and their forecasts usually have no impact on stock price. However, they (2010) re-examine and discover that the incentive to meet analysts' forecasts becomes dominant after 2001 and the frequency and magnitude of earnings management are higher when firms try to avoid earnings decrease rather than to avoid negative earnings. Schipper (1989) suggest that managing earnings to obtain favorable treatment from regulators represents a special case.

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<sup>29</sup> 'Bonus Hypothesis' assumes that managers alter reported earnings to increase their compensation.

<sup>30</sup> 'Debt Hypothesis' assumes that managers of firms with high level of leverage tend to choose accounting methods and policies that increase reported earnings to avoid technical default of debt covenants or to reduce the restrictiveness of accounting based constraints in debt agreements.

Chen *et al.* (2008) suggest that Chinese local governments assist local listed SOEs in earnings management to meet the regulatory requirements set by central government through offering subsidies and granting taxation preference or favoring listed firms in the project approval process.

Wang *et al.* (2008) demonstrate that the shareholding ratio of institutional investors is negatively related with the degree of earnings management, since institutional investors often have high-quality personnel with professional financial and managerial backgrounds. Although institutional investors (i.e. life insurance companies, pension funds and collective investment funds) in China have become increasingly as important shareholders as in the US financial markets, they are still relatively immature.

Many previous studies show that good corporate governance is an effective mechanism to mitigate the management's opportunistic behaviors, to improve the quality of reported earnings and to increase firm value (Cheng and Warfield 2005; Chen, Firth *et al.* 2006; Ding, Zhang *et al.* 2007; Firth, Fung *et al.* 2007; Cornett, Marcus *et al.* 2008; Wang, Wang *et al.* 2008; Young, Peng *et al.* 2008; Hu, Tam *et al.* 2010; Lo, Wong *et al.* 2010; Conyon and He 2011). Several studies address the importance of corporate governance in constraining earnings management in the US, the UK, and other European countries (Shleifer and Vishny 1997; Klein 2002; Goergen, Manjon Antolin *et al.* 2004; Hopt and Leyens 2004; Park and Shin 2004; Peasnell, Pope *et al.* 2005; Fauver and Fuerst 2006; Gillan 2006; Hillier and McColgan 2006; Osmo and Noguera 2007; Cornett, Marcus *et al.* 2008; Jeanjean and Stolowy 2009; Bermig and Frick 2010), as well as in emerging markets (Klapper and Love 2004; Cheung, Jiang *et al.* 2008; McGee 2008; Young, Peng *et al.* 2008; Hu, Tam *et al.* 2010; Lo, Wong *et al.* 2010; Yuka 2010; Chen, Li *et al.* 2011). Using a sample of 692 publicly traded U.S. firm-years, Klein (2002) shows a significantly negative relationship between abnormal accruals and the percentage of outside directors on the board and audit committees. Shleifer and Vishny (1997) and Gillan (2006) provide strong evidence that good corporate governance can mitigate the agency problems, especially the agency conflicts between controlling shareholders and minority shareholders. Such a conclusion is also applicable to Chinese market (Wong and Jian 2003; Ding, Zhang *et al.* 2007; Liu and Lu 2007; Young, Peng *et al.* 2008; Aharony, Wang *et al.* 2010).

## **2.5. Hypotheses Development**

Monitoring managerial decisions becomes crucial for safeguarding the shareholders' interests (Fama and Jensen 1983). There are many studies in the US and UK and other European countries which have tested whether board size, the percentage of non-executive directors, frequency of board meetings, duality of the CEO and Chairman and whether the board has an audit committee are related to a firm's performance and earnings informativeness. The results of these studies are mixed. The unique characteristics of internal governance in the Chinese background will influence the earnings quality differently from that in the West. In the developed capital markets with separation between ownership and management, and broad shareholder bases, earnings management is generally driven by the desire to boost the listed company's stock price, since the price is often the key basis for managerial compensation, which may include stock options or other incentive plans. However, in some less developed capital markets these incentives are perhaps no longer relevant. In such capital markets, even listed firms have a highly concentrated ownership structure and top managers are or directly on behalf of controlling shareholders. The Chinese stock market is a good example of such a context: the floating shares often represent only a small proportion of listed firms' total shares, and stock options were not implemented until mid-2005.

Ownership structure is regarded as the primary determinant of agency cost, this study thus attempts to link companies' ownership structure (largest shareholder, i.e. Top1 shareholder) with their earnings management behaviour. Concentrated ownership gives the largest shareholders a substantial discretionary power to use the firm's resources for personal gain at the expense of other shareholders. Managerial ownership in China is too minimal to generate an incentives alignment effect or entrenchment effect. Fama and Jensen (1983) and Jensen (1993) provide a relevant argument that is more applicable to China, that is when managerial ownership is low, companies need larger, more independent boards to monitor top management. Following Berle and Means (1932), Jensen and Meckling (1976) and Roe (1994) indicate the agency problem stems from the conflict of interests between the shareholders and managers when ownership is diffuse such as in the US and the UK. According to agency theory, separation of ownership and control leads to a divergence in the pursuit of managerial interests versus owners' interests (Jensen and Meckling 1976), and thus effective monitoring managerial decisions becomes essential for boards of directors as well as audit committees to ensure that shareholders' interests are protected and to constrain the

occurrence of earnings management (Fama and Jensen 1983). However, if ownership is highly concentrated such as the circumstances in East Asia, the agency problem stem from the conflicts between controlling shareholders and minority shareholders. Ding et al. (2007) argue that the conflict of interests between controlling shareholders and minority shareholders is the root cause of earnings management in China.

Beasley (1996) confirms Dechow *et al.*'s (1996) findings that a larger proportion of independent directors on the board is negatively associated with financial statements fraud, suggesting the higher likelihood of financial fraud is associated with the lower percentage of outside directors in the firm. Xie *et al.* (2003) and Liu and Lu (2007) and Jaggi et al. (2009) find that earnings management is negatively correlated with more independent directors on the board based on different country samples. Lo *et al.* (2010) also claim that a board that has more independent directors or less directors representing the parent companies are effective in constraining management's opportunistic behaviors (in the form of transfer pricing manipulations). Setia-Atmaja et al. (2011) support that a higher proportion of independent directors on boards is effective in reducing earnings management and mitigating agency problems by using panel data of Australian family controlled firms between 2000 and 2004. Fama and Jensen (1983) and Peasnell *et al.* (2005) also claim that outside directors tend to be more effective in monitoring the management than inside directors, because they have greater incentives to maintain the value of their reputational capital. However, Park and Shin (2004) find that only adding more outside directors to the board does not, on its own, reduce earnings management: they examine the Board composition in Canada where the capital market is well developed but ownership is highly concentrated.

Some literature claims that the effectiveness of supervisory directors in China is undermined by incorporating political officers, close friends and allies of senior managers (Dahya et al. 2003; Xiao et al. 2004; Xi 2006; Hu et al. 2010). However, Firth *et al.* (2007) suggest that supervisory boards help improve the integrity of earnings. There have been controversial arguments about the mandatory requirement of having both a Supervisory Board and Independent Directors in China, as there exist some overlapping responsibilities including supervising the company's financial affairs. Consequently, the overall monitoring efficiency will be diminished (Xi 2006). Xiao *et al.* (2004) provide that when supervisors lacked financial sophistication, the secretary to the Board of Directors usually drafted the Supervisory Board report for the Supervisory Directors. In addition, Wang and Liu (2006)

compare the functions and rights of Independent Directors with Supervisory Directors in China and find there exists a complementary relation.

Prior research suggests that board independence, as measured by the percentage of independent directors, can improve corporate governance although its effectiveness depends on the business and regulatory compliance environment (Hermalin and Weisbach, 2003; Xie et al., 2003; Berghe and Baelden, 2005; Iwasaki, 2008; Cornett et al., 2009). Based on prior studies, this study expects that higher independent director (supervisor) ratio indicating more a higher level of board independence is more likely to constrain earnings management. Hence, the hypotheses are developed as follows:

**Hypothesis 1a:** Firms with a greater number of independent directors will constrain earnings management.

**Hypothesis 1b:** Firms with a greater number of supervisors will constrain earnings management.

Prior US research supports that the board's effectiveness at monitoring the financial reporting process will depend on the ability of outside directors to understand earnings management methods. For example, Peasnell et al. (1999) report that over a quarter of all UK board members are professionally qualified accountants. Furthermore, outside directors frequently hold senior management positions in other large corporations; hence, they are likely to be familiar with financial reporting from a senior management perspective. Xie et al. (2003) find that board and audit committee members with financial expertise are associated with firms that have smaller discretionary current accruals. Bédard et al. (2004) find that the presence of at least one financial expert in the audit committee is associated with a lower likelihood of aggressive earnings management. DeFond et al. (2005) find significantly positive cumulative abnormal returns around the appointment of accounting financial experts to the audit committee, suggesting audit committees with accounting financial expertise improve corporate governance. McDaniel, Martin and Maines (2002) demonstrate that financial experts (as defined by the stock exchanges) do check financial statements differently from ordinary people, since the financial experts have broader financial or accounting expertise and are more sophisticated. According to China's laws, independent directors are supposed to act in a similar way to those in the U.S. Therefore, this study expects that more independent directors (supervisor) with financial expertise are more likely to be effective to constrain earnings management. Hence, the following hypotheses are developed:

**Hypothesis 2a:** Firms with a greater number of independent directors with financial or accounting expertise will reduce their engagement in earnings management.

**Hypothesis 2b:** Firms with a greater number of supervisors with financial or accounting expertise will reduce their engagement in earnings management.

Some literature claims that the independence and effectiveness of independent directors and supervisory directors in China is undermined by incorporating political officers, close friends and allies of senior managers (Dahya et al. 2003; Xiao et al. 2004; Xi 2006; Hu et al. 2010). Therefore, the positive influences of independent directors and supervisory directors on monitoring the board decision are weakened. Based on prior literature, the following hypotheses are developed:

**Hypothesis 3a:** Firms with a greater number of independent directors with official backgrounds will be more likely to engage in earnings management.

**Hypothesis 3b:** Firms with a great number of supervisors with official background will be more likely to engage in earnings management.

## 2.6. Empirical Modeling

As Healy and Wahlen (1999) point out, total accruals can be divided into two components. One component is caused by the company's normal business activities, while the other is discretionary accruals, considered as abnormal. The normal portion of total accruals can be predicted by a cross-sectional regression model in which the changes in revenue from main operations and in gross fixed assets from year t-1 to year t (scaled by total assets of the company in year t-1) are explanatory variables. As a result, the regression residual is discretionary accruals.

$$TA_t = (\Delta CA_t - \Delta CL_t - \Delta Cash_t + \Delta STD_t - Dep_t) / (ASSETS_{t-1})$$

(Equation 2.1)

Where

$TA_t$	= Total Accruals
$\Delta CA_t$	= Change in Current Assets
$\Delta CL_t$	= Change in Current Liabilities
$\Delta Cash_t$	= Change in Cash and Cash Equivalents

$\Delta STD_t$  = Change in debt included in Current Liabilities;

$Dep_t$  = Depreciation and Amortization Expense

$ASSETS_{t-1}$  = Lagged Total Assets

$$NDA_t = \alpha_1 \left( \frac{1}{ASSETS_{t-1}} \right) + \alpha_2 (\Delta REV_t - \Delta REC_t) + \alpha_3 (PPE_t) \quad (\text{Equation 2.2})$$

$$DA_t = TA_t - NDA_t \quad (\text{Equation 2.3})$$

Where,  $NDA_t$  = Non-Discretionary Accruals

$DA_t$  = Discretionary Accruals

$\Delta REV_t$  = Change of Sales Revenues

$\Delta REC_t$  = Change of Trade Receivables

$PPE_t$  = Plant Property and Equipment

Many studies detect the relationship between abnormal accruals and earnings management incentives. The most common test for earnings management is based on Jones's (1991) discretionary accruals model. She uses the residual as a measure of the discretionary accruals. In the past, the applicability and suitability of using discretionary accruals as an earnings management proxy in the Chinese context is often challenged, because it was difficult for the enterprises to manipulate their earnings via non-cash accruals. However, due to international accounting standardization in China (in particular, *The 2006 Chinese GAAP* is much closer to IFRS), it provides the enterprises with the opportunity to manage reported earnings via conventional discretionary accruals. A modified model by Dechow et al. (1995) that controls for the effect of performance by either adding ROA as an additional independent variable or by using performance-matched portfolios, which has been documented as a better approach. Based on the prior literature, the absolute effect of discretionary accruals and discretionary revenues (i.e. negatively signed accrual values reversed to positively signed values) will be employed as the proxy of earnings management regardless of its directions (income-increasing or income-decreasing earnings management). This study does not focus on the direction of discretionary accruals or discretionary revenues, but concentrates on the magnitude (i.e. level of earnings management) of discretionary accruals and discretionary revenues.



### **2.6.1 Modified Jones Model with performance-matched estimates**

Previous studies investigate the specification and power of various discretionary accrual models (such as Dechow et al., 1995), as well as that of performance-matched accrual models (see Kothari et al., 2005). Dechow et al. (1995, p.193) identify that ‘all models reject the null hypothesis of no earnings management at rates exceeding the specified test levels when applied to samples of firms with extreme financial performance.’ It indicates that performance may influence the estimation of earnings management because Non-Discretionary Accruals may be erroneously classified as Discretionary Accruals when performance is abnormal and the relationship between accruals and performance is non-linear. Kothari et al. (2005) identify that matching based on  $ROA_t$  performs better than matching on  $ROA_{t-1}$ . Existing models of accruals, earnings, and cash flows, and empirical evidence all document that accruals are significantly correlated with a firm’s contemporaneous and past performance (for example, Guayet al. 1996; Healy, 1996; Dechow et al., 1998, 1995; Barth et al., 2001). Among the various discretionary accrual models, Dechow et al. (1995) report that the Jones and the modified-Jones models perform the best. Thus, this study utilizes the abnormal accruals derived from the modified Jones model with performance-matched estimates as the proxy for earnings management.

$$\frac{AC_{it}}{TA_{avg}} = \alpha_0 + \beta_1 \frac{1}{TA_{avg}} + \beta_2 \frac{\Delta SALES_{it} - \Delta AR_{it}}{TA_{avg}} + \beta_3 \frac{PPE_{it}}{TA_{avg}} + \beta_4 ROA_{it} + \varepsilon_{it}$$

*(Equation 2.4)*

Where

AC = Accounting Accruals

$\Delta$ SALES = Change of Sales from year t to t-1,

$\Delta$ AR = Change in Net Account Receivables from year t to t-1.

PPE = Gross Property, Plant and Equipment

ROA = Rate of Return on Assets

*Variables are deflated by average total assets.*

### 2.6.2 Discretionary Revenue Model

Consistent with Palmrose and Scholz's (2004) findings that the single largest item in restatements of financial reports is sales revenue, Dechow and Schrand (2004) summarize the most frequently manipulated accounts alleged by SEC is the overstatement of revenues. Ronen and Yaari (2008) suppose that if revenues are the target of earnings management, and reported earnings are simply a by-product of manipulated revenue, then the revenue ought to be detected in the empirical design rather than reported earnings. Meanwhile, this view is supported by Stubben (2010) as well. Hence, this paper utilizes the discretionary revenue as a measure of earnings management. The equation is as follows:

$$\Delta AR_{it} = \alpha + \beta_1 \Delta R1_{3it} + \beta_2 \Delta R4_{it} + \varepsilon_{it} \quad (\text{Equation 2.5})$$

**Where:** Variables are deflated by average total assets.

AR=end of fiscal year net accounts receivable

R=total operating revenue (annual revenue)

R1\_3=revenues of the first three quarters

R4=revenues of the fourth quarter

△=annual change

PPE= Gross Property, Plant and Equipment

CFO=Cash from operations

AC=accounting accruals=earnings before extraordinary items-cash from operations

Revenues of the first three quarters are the difference between annual total operating revenues and fourth-quarter revenues. This model deflates all revenue and accrual variables by average total assets. The abnormal accruals are the residuals derived from *Equation 2.5*.

### 2.7. Definition and Measurement of Variables

The study aims to investigate whether board of directors and supervisory directors actively monitor and take actions that reduce the incidence of earnings management. The board independence and financial expertise of board members required by CSRC are used as measures of corporate governance. Concentrated ownership provides the largest shareholders a substantial discretionary power to allocate the firm's resources for personal gain at the expense of minority shareholders. To capture the ownership aspect of corporate governance, this study calculates the stake of the largest shareholder to evaluate both the largest

shareholder's interest in a company and its power over the board. The board of directors is a second mechanism through which shareholders can exert their influence on the behaviour of managers to make sure that the company operates in their interests (e.g., Hermalin and Weisbach, 2003). In order to measure the effective monitoring role of outside control of the board, this research takes the number of independent directors who are not members of the management team into account. This study considers one more variable to indicate whether or not the controlling shareholder is the government. A dummy variable equals 1 if the government is the controlling shareholder and 0 otherwise. The government is likely to have goals other than profit maximization, such as maintaining employment and social stability. A controlling government stakeholder can use the listed company as a vehicle to achieve its policy goals even though they may conflict with shareholders' interests (Bai et al. 2000).

Based on prior literature, this empirical study incorporates several influential control variables in the regressions, such as leverage, firm size, firm performance and firm age. **Leverage** represents the debt structure of a company and is widely used to proxy for the degree of closeness to a debt covenant restriction in previous studies. For instance, Dechow et al. (1996) find that closeness to debt covenant violations stimulate earnings management. Efendi et al. (2007) suggest that when a firm is close to technical default on accounting-based debt covenants, the management may manipulate the accounting numbers to avoid the default. Dechow et al. (1996), Richardson et al. (2002) and Person (2005) link leverage with earnings management (financial statements fraud). Following these prior studies, this study will consider leverage calculated as total debt divided by total assets as a control variable.

**Firm Size** is often found to have significant impact on internal governance mechanism in prior literature (Wong and Jian 2003; Hu, Tam et al. 2010). The political cost hypothesis proposed by Watts and Zimmerman (1990), predicts that larger firms are more likely to reduce reported earnings to reduce the potential political risk. Wong and Jian (2003) state that large Chinese listed firms have a more extensive network of related parties, making it easier for them to manipulate the reported earnings via non-operating transactions. Thus, firm size is included as a control variable measured as the natural logarithm of total assets.

**Firm Performance:** Return on assets (ROA) is used in many studies on both corporate governance and earnings management to control for the firm's performance (e.g. (Kothari, Leone et al. 2005); Kiel and Nicholson, 2003; Carter et al., 2003). Beneish (2001)

demonstrate that earnings management is more likely to occur when a firm's performance is either unusually good or bad. In addition, Carter et al. (2003) find that ROA is highly significant in explaining Tobin's Q and firm's value. Hence, ROA can be considered as a robust measure of firm performance. In this study, ROA is calculated as net income divided by the total assets at the beginning of the testing period. Meanwhile, due to the tight regulation on delisting issued by CSRC, it is more likely that 'ST' and 'PT' companies will present a higher degree of earnings management to avoid delisting.

**Firm age:** Evidence in prior literature has shown that young firms with high growth are more likely to commit financial statement fraud because they have strong financing needs, in addition, young firms are prone to have weaker governance structures and internal controls lag behind operations and have greater risk of distress (Beneish 1999). However, other researchers argue that older firms would be benefited from their ability to secure resources and their industrial experience. The old Chinese enterprises are characterized by both resource advantage and social burden (e.g. (Tian and Lau 2001)). Given the possible influences of firm age on organizational performance, it is incorporated as a control variable.

Therefore, the regression models are expressed as follows:

$$\begin{aligned}
 \mathbf{DisAcc}_{jt} = & \alpha + \beta_1 \mathbf{TOP1}_{jt} + \beta_2 \mathbf{Stateowned}_{jt} + \beta_3 \mathbf{BOARD\_MEET}_{jt} + \beta_4 \mathbf{SB\_MEET}_{jt} \\
 & + \beta_5 \mathbf{IND\_Meet\_Att}_{jt} + \beta_6 \mathbf{Direct\_No}_{jt} + \beta_7 \mathbf{IND\_No}_{jt} \\
 & + \beta_8 \mathbf{SBM\_No}_{jt} + \beta_9 \mathbf{IND\_Expert\_No}_{jt} + \beta_{10} \mathbf{SB\_Expert\_No}_{jt} \\
 & + \beta_{11} \mathbf{SB\_Officials}_{jt} + \beta_{12} \mathbf{IND\_Ratio}_{jt} + \beta_{13} \mathbf{FirmAge}_{jt} + \beta_{14} \mathbf{ROA}_{jt} \\
 & + \beta_{15} \mathbf{SIZE}_{jt} + \beta_{16} \mathbf{LEV}_{jt} + \beta_{17} \mathbf{YearDummy}_{jt} + \beta_{18} \mathbf{IndusDummy}_{jt} + \varepsilon_{jt}
 \end{aligned}$$

*(Equation 2.6)*

Or

$$\begin{aligned}
 \mathbf{DisRev}_{jt} = & \alpha + \beta_1 \mathbf{TOP1}_{jt} + \beta_2 \mathbf{Stateowned}_{jt} + \beta_3 \mathbf{BOARD\_MEET}_{jt} + \beta_4 \mathbf{SB\_MEET}_{jt} \\
 & + \beta_5 \mathbf{IND\_Meet\_Att}_{jt} + \beta_6 \mathbf{Direct\_No}_{jt} + \beta_7 \mathbf{IND\_No}_{jt} \\
 & + \beta_8 \mathbf{SBM\_No}_{jt} + \beta_9 \mathbf{IND\_Expert\_No}_{jt} + \beta_{10} \mathbf{SB\_Expert\_No}_{jt} \\
 & + \beta_{11} \mathbf{SB\_Officials}_{jt} + \beta_{12} \mathbf{IND\_Ratio}_{jt} + \beta_{13} \mathbf{FirmAge}_{jt} + \beta_{14} \mathbf{ROA}_{jt} \\
 & + \beta_{15} \mathbf{SIZE}_{jt} + \beta_{16} \mathbf{LEV}_{jt} + \beta_{17} \mathbf{YearDummy}_{jt} + \beta_{18} \mathbf{IndusDummy}_{jt} + \varepsilon_{jt}
 \end{aligned}$$

*(Equation 2.7)*

Table 2.3 explains the definitions and measurements of variables utilized in this empirical modeling as follows.

Table 2.3 Variables definition and measurement

<b>Dependent Variables</b>	<b>Definition</b>
Discretionary Accruals	The abnormal accruals are residuals derived from the modified Jones model with performance-matched estimates ( <i>Equation 2.4</i> ).
Discretionary Revenues	The abnormal revenues are the residuals derived from <i>Discretionary Revenue model (Equation 2.5)</i> .
<b>Independent Variables</b>	<b>Definition</b>
TOP1	Percentage of shares owned by the largest shareholder
State-owned	If the company is state-owned, it is 1; otherwise, coded 0.
BOARD_MEET	The frequency of meetings of the Board
SB_MEET	The frequency of meetings of the Supervisory Board
IND_Meet_Att	The meeting attendance rate of Independent Directors
Direct_No	The number of Directors in the Board
IND_No	The number of Independent Directors in the Board
SBM_No	The number of Supervisory Board Member
IND_expert_no	The number of independent Directors with financial or accounting expertise
SB_expert_no	The number of Supervisors with financial or accounting expertise
SB_official_no	The number of Supervisors with official background
IND_No.	If the number of Independent Directors exceeds 1/3, it is coded as 1; otherwise, coded 0.
<b>Control Variables</b>	<b>Definition</b>
Firm Age	How long have the firm operated since its foundation
ROA (Return on Assets)	Return on assets=Net Profit/Total Assets
SIZE	Natural Logarithm of the average Total Assets
LEV	Total Debt/Total Assets
Time Effect	Year Dummy
Industry Effect	CRSC Industry Code

## 2.8. Sample Data

The analysis is based on the financial information from the listed companies' annual report over a six-year period, from the fiscal year of 2005 to 2010. There are several predominant reasons why the sample period starts from 2005 for this empirical analysis: (1) Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies set by CSRC requires no less than one third of the Board of Directors to be independent non-executive directors, completed by 30th of June 2003; (2) The data about the independent directors in the database even in 2004 is incomplete. (3) In 2006, the Ministry of Finance of the People's Republic of China promulgated a new set of Accounting Standards for Business Enterprises (ASBEs), which are substantially converged with the IFRS. All companies listed in China must apply ASBEs for the preparation of their financial statements. (4) The *2006 Company Law* influences the Board monitoring through (a) a significant enhancement of the effectiveness of Supervisory Board<sup>31</sup> (b) a modest strengthening of participation by workers, and (c) the codified independent director system. And (5) the *2006 Securities Law* requires supervisors as well as directors and senior managers to certify personally that the financial reports are not involved in any material misstatements or omissions.

The financial data are all collected from CCER (SINOFIN) and CSMAR database. This study is my first empirical study which commences from 2010, in which I started my PhD study. Up to then, the sample period is selected from 2005 to 2010. Since the information on the financial expertise and background of independent directors and supervisory directors is manually collected from the finance website (SINA FINANCE) or the listed companies' officially audited financial reports. The financial/accounting expertise (hold the degree of Finance or Accounting, with the title as CPA/ACCA/CIMA/CFA or Senior Accountant etc. with work experiences in Securities and Investment Bank and Future and Options field) and the official background (whether Communist Party Member or not, whether they are holding or was holding official position in the government or not) of both Independent Directors and

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31 For instance, firstly, *2006 Company Law* gives the Supervisory Directors a specific power to propose dismissal of directors and senior managers who violate laws, regulations, articles of association, or resolutions of shareholders' meetings. Secondly, the Supervisory Board now may have the power to convene and preside over the shareholders' meeting instead of the Board of Directors, when the latter fails to act in a prescribed manner. Thirdly, the amendments enable Supervisory Directors to inspect the company's business operations, if they detect any signs of abnormality.

Supervisory Board Members are manually selected from the SINA FINANCE website<sup>32</sup>. The background of independent directors in Chinese listed companies will be classified into several groups: (1) Independent Directors with financial or Accounting Expertise; (2) Independent Directors with Law expertise; (3) Independent Directors with management expertise; (4) Independent Directors who are technicians or engineers and (5) Others. The manual data collection is a huge time-consuming process. Hence, the sample period for this empirical study has not been extended or updated.

The industrial effects are controlled in this research. In light of the Industry Classifying Guidelines of Listed Companies (2001) released by the CSRC, there are 13 industry categories: (a) Farming, forestry, animal husbandry; (b) Mining; (c) Manufacturing; (d) Utilities; (e) Construction; (f) Transportation and warehousing; (g) Information Technology; (h) Wholesale and Retail Trade; (i) Financial, banking and Insurance; (j) Real Estate; (k) Social Service; (l) Communication and Cultural Industries; and (m) Conglomerates. In line with Peasnell et al. (2000) and Stubben (2010), the firms in the regulated industries of financial, insurance and banks and utilities are excluded because their revenues and accruals are different from those of other firms. Hence, 11 industries will be included in this research to examine the industry effect on earnings management (see details in [Table 2.9A](#) and [2.9B](#)).

Finally, year dummies are contained to capture the regulation effect. During the period of 2005 and 2010, there are 9370 firm-year observations in total. Data were cross-checked for consistency. Data unavailable from these sources were manually collected from the sample companies' audited annual reports. To keep the consistency of the research observations, the new entrances of listed companies during the period and the missing values of some observations are excluded in order to mitigate survivorship bias in the results. Firm-specific fixed-effects are included to control for the possibility that endogeneity arises from omitted unobserved factors. In addition, some outliers of observations have been removed from the sample data. Therefore, there are 6882 firm-year observations for Discretionary Accruals Model and 6486 firm-year observations for the Discretionary Revenues Model. This study acknowledges that this dataset is a balanced sample.

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<sup>32</sup> <http://finance.sina.com.cn/stock/index.shtml>

## **2.9. Empirical results**

This study does not focus on the direction of discretionary accruals or discretionary revenues, but concentrates on the magnitude (i.e. level of earnings management) of discretionary accruals and discretionary revenues. Hribar and Nichols (2007) find that the absolute value of discretionary accruals is the most commonly used unsigned measure of earnings management. They argue that when testing for earnings management through signed discretionary accruals, firm characteristics associated with a lack of fit in the estimation of discretionary accruals will result in lower power tests and a reduced likelihood of rejecting the null hypothesis of no earnings management. It will lead to conservative tests of earnings manipulation even though significant results are obtained. In addition, they prove that operating volatility has little correlation with signed discretionary accruals, but significantly correlated with the absolute value of discretionary accruals and many of the earnings management partitioning variables used in recent studies. It is consistent with Reynolds and Francis' conclusion (2000). They document that when a specific directional prediction is ignored, the extent to which companies use accruals to manipulate earnings is best measured by the unsigned (absolute) value of accruals.

The term 'unsigned' refers to the models employed in this section that do not differentiate income increasing from income-decreasing earnings manipulation. Generally speaking, the absolute effect of negatively signed accrual values more intuitively captures the magnitude of earnings management. Although the methodology and specific measures are various, numerous studies utilize unsigned (absolute) value of accruals (for instance, Warfield et al., 1995; Chung et al., 2002; Klein, 2002; Firth et al., 2007; Setia-Atmaja et al., 2011). Hence, based on the prior literature, the absolute effect of discretionary accruals and discretionary revenues (i.e. negatively signed accrual values reversed to positively signed values) will be employed as the proxy of earnings management regardless of its directions (income-increasing or income-decreasing earnings management). Prior research has ignored the issue that using the absolute value of signed discretionary accruals has implications for the distribution of this variable. Absolute value of discretionary accruals will be defined as  $Y = |X|$ . The signed discretionary accruals are the residual from an OLS regression; they have an expected value of zero. High absolute discretionary accruals are often interpreted as earnings opportunistic behavior, implying poor earnings quality.



Table 2.4 presents summary statistics for the discretionary accrual calculations used in two models, both signed and absolute, as well as other firm characteristics. As expected, the mean and the median value of the signed distributions are close to zero by construction, while the means of the unsigned measures are both positive. The mean (median) value of discretionary accruals (DAC) is 0.000 (0.003) respectively. It ranges from -0.486 (minimum) to 0.499 (maximum). For the absolute effect of discretionary accruals (DAC\_abs), the mean (median) value is 0.066 (0.048). The mean (median) value of discretionary revenue (Rev) is 0.000 (0.004) respectively. It ranges from -0.395 (minimum) to 0.329 (maximum), smaller than that of discretionary accruals. For the absolute effect of discretionary revenues (Rev\_abs), the mean (median) value is 0.033 (0.018). Table 2.4 reflects that discretionary accrual (DAC) has a larger standard deviation (variance) 0.092 (0.008) than discretionary revenue (Rev) 0.054 (0.003) in signed measures. So does the absolute measures; compared with the standard deviation (variance) of DAC 0.063 (0.004), Rev with 0.043 (0.002).

Since the Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies set by CSRC requires, by the 30th of June 2003, no less than one third of board of directors to be independent non-executive directors, more and more companies have converged with the guidelines: more than 1/3 independent directors in Chinese listed companies from 2005 to 2010 according to Table 2.5. In this study, the descriptive statistics for the other variables in our sample are also reported. In order to detect how strongly the signed and absolute value of earnings management measures are correlated with underlying firm characteristics, it provides Correlation and Covariance Matrix among the sample variables in Table 2.6A (Discretionary Accruals Model) and Table 2.6B (Discretionary Revenue Model).

Early studies measure earnings opportunistic behavior by using firm-specific, time-series estimation in a specific time period. Hribar and Nichols (2007) present the relationship between unsigned (absolute) value of discretionary accruals and firm characteristics such as market value of equity, total assets, sales growth, leverage, and cash from operations, volatility of sales, and volatility of cash flows. They find that the unsigned earnings management measures have the highest correlations with volatility of sales, and volatility of cash flows which are neglected in previous studies. Chen and Al-Najjar (2012) obtain the result that board independence is negatively correlated with the size of supervisory board and

state ownership. They even argue that Chinese listed firms with poorer performance incline to hire more independent directors, on the one hand to rely on external expertise to improve corporate performance, on the other to avoid criticism for not applying corporate governance practices. More importantly, the distribution of the absolute measure of discretionary accruals is unlike the distribution of signed measure of discretionary accruals. Hribar and Nichols (2007) point out the mean of the absolute discretionary accruals distribution is defined by the standard deviations of the signed discretionary accruals distribution.

**Table 2.4** Descriptive Statistics

<b>Variables</b>	<b>Mean (Median)</b>	<b>SD (Variance)</b>	<b>Min (Max)</b>	<b>Skewness (Kurtosis)</b>	<b>First (Third) Quartile</b>
<b>Accruals</b>					
AC/TA	-0.062 (-0.061)	0.098 (0.010)	-0.539 (0.467)	0.166 (5.320)	-0.114 (-0.014)
DAC_Modified Jones	0.000 (0.003)	0.092 (0.008)	-0.486 (0.499)	-0.071 (5.634)	-0.047 (0.050)
DAC_abs	0.066 (0.048)	0.063 (0.004)	0.000 (0.499)	2.008 (8.630)	0.022 (0.090)
Residuals_Rev	0.000 (0.004)	0.054 (0.003)	-0.395 (0.329)	-1.066 (11.930)	-0.016 (0.020)
Residuals_Abs	0.033 (0.018)	0.043 (0.002)	0.000 (0.395)	3.137 (16.484)	0.008 (0.039)
<b>Ownership Structure</b>					
Top1 Shareholding	0.360 (0.335)	0.153 (0.024)	0.035 (0.852)	0.405 (2.413)	0.238 (0.479)
State-owned	0.347 (0.000)	0.476 (0.227)	0.000 (1.000)	0.641 (1.411)	0.000 (1.000)
SO shares Percentage	0.218 (0.144)	0.233 (0.054)	0.000 (0.971)	0.576 (1.929)	0.000 (0.423)
<b>Board Structure</b>					
Board Meeting	8.832 (8.000)	3.663 (13.418)	3.000 (38.000)	1.931 (10.368)	6.000 (10.000)
IND_Meet_Attend Rate	0.990 (1.000)	0.034 (0.001)	0.542 (1.000)	-5.411 (40.753)	1.000 (1.000)
No. of Directors	9.260 (9.000)	1.888 (3.563)	4.000 (25.000)	0.862 (5.517)	9.000 (10.000)
No. of IND	3.286 (3.000)	0.699 (0.488)	1.000 (7.000)	1.020 (4.916)	3.000 (4.000)
No. of IND_expertise	1.406 (1.000)	0.728 (0.530)	0.000 (5.000)	0.453 (3.436)	1.000 (2.000)
No. of IND_Official	0.333 (0.000)	0.608 (0.370)	0.000 (5.000)	1.966 (7.341)	0.000 (1.000)
No. of IND_communist	1.578 (2.000)	0.895 (0.801)	0.000 (5.000)	0.180 (2.717)	1.000 (2.000)

Table 2.4 Descriptive Statistics (Continued)

Variables	Mean (Median)	SD (Variance)	Min (Max)	Skewness (Kurtosis)	First (Third) Quartile
<b>Supervisory Board</b>					
Supervisor Meeting	4.377 (4.000)	1.722 (2.964)	0.000 (17.000)	0.992 (6.619)	3.000 (5.000)
No. of Supervisors	4.031 (3.000)	1.312 (1.721)	2.000 (13.000)	1.248 (5.376)	3.000 (5.000)
No. of SBM_expertise	0.965 (1.000)	0.777 (0.603)	0.000 (5.000)	0.497 (3.114)	0.000 (1.000)
No. of SBM_Official	0.144 (0.000)	0.421 (0.178)	0.000 (4.000)	3.509 (18.662)	0.000 (0.0000)
No. of SBM_communist	1.438 (1.000)	1.340 (1.797)	0.000 (9.000)	1.437 (6.286)	0.000 (2.000)
<b>Performance</b>					
1/TA	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	3.229 (18.981)	0.000 (0.000)
(Sales-AR) change/TA	0.094 (0.073)	0.213 (0.046)	-0.887 (1.879)	1.116 (11.035)	-0.003 (0.173)
PPE/TA	0.342 (0.306)	0.219 (0.048)	0.000 (1.510)	0.741 (3.480)	0.182 (0.481)
<b>Control Variables</b>					
Firm Age	12.304 (12.000)	3.982 (15.858)	3.000 (30.000)	0.326 (2.883)	9.000 (15.000)
ROA	0.033 (0.031)	0.072 (0.005)	-0.543 (0.524)	-0.760 (11.360)	0.009 (0.060)
SIZE	21.477 (21.414)	1.018 (1.036)	18.665 (24.846)	0.324 (3.030)	20.746 (22.136)
Leverage	0.552 (0.549)	0.224 (0.050)	0.021 (1.984)	0.507 (4.548)	0.401 (0.697)

Table 2.5 Number of Listed Companies with Independent Directors 2005-2010

No. of Independent Directors	2005	2006	2007	2008	2009	2010
Greater than (Equals to) 1/3	1053	1067	1092	1111	1119	1120
Less than 1/3	94	80	55	36	28	27
<b>Total</b>	<b>1147</b>	<b>1147</b>	<b>1147</b>	<b>1147</b>	<b>1147</b>	<b>1147</b>

Table 2.6A Correlation and Covariance Matrix (Unsigned Discretionary Accruals)

	Residual_abs	Stateown	Top1 Shareholder	Board Meeting	IND_Meeting Attendance	Directors NO.	IND_expert NO.	IND_officials NO.	SB Meeting	SB_expert NO.	SB_officials NO.	Firm Age	ROA	SIZE	LEV
Residual_abs	1.000														
Stateown	0.066*	1.000													
Top1 Shareholder	0.0280	-0.249***	1.000												
Board Meeting	0.067	0.062***	-0.044***	1.000											
IND_Meeting Attendance	-0.028	-0.012	0.019***	-0.042**	1.000										
Directors NO.	-0.04**	-0.177***	0.035***	-0.021	-0.012	1.000									
IND_expert NO.	0.015	-0.024	-0.018	0.078	0.031	0.199	1.000								
IND_officials NO.	0.019	-0.046	-0.027	-0.001	-0.002	0.071	0.065	1.000							
SB Meeting	0.067	0.025**	-0.007	0.317***	0.045***	-0.022	0.087	0.039	1.000						
SB_expert NO.	-0.010	-0.081	0.048	-0.000	0.025	0.153	0.069	-0.044	0.023	1.000					
SB_officials NO.	-0.004	-0.069	0.046	0.002	0.024	0.070	0.007	0.042	0.022	0.145	1.000				
firm age	0.077*	0.070***	-0.288***	0.106***	0.0240	-0.093***	0.137	0.108	0.172***	-0.007	-0.035	1.000			
ROA	0.079***	0.010	0.126	0.011	0.072	0.058**	0.005	-0.007	0.068	0.074	0.051	-0.056	1.000		
SIZE	-0.003***	-0.229***	0.262***	0.159***	0.048***	0.243***	0.130	0.016	0.114***	0.116	0.079	0.039***	0.179***	1.000	
LEV	0.119***	-0.007***	0.0303	0.1476	-0.0495	0.044***	0.031	0.061	0.038	0.022	0.003	0.101***	-0.176***	0.204***	1.000

Notes: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 2.6B Correlation and Covariance Matrix (Unsigned Discretionary Revenue)

	Residual_abs	Stateown	Top1 Shareholder	Board Meeting	IND_Meeting Attendance	Directors NO.	IND_expert NO.	IND_officials NO.	SB Meeting	SB_expert NO.	SB_officials NO.	Firm Age	ROA	SIZE	LEV
Residual_abs	1.000														
Stateown	0.059*	1.000													
Top1 Shareholder	-0.021	-0.236***	1.000												
Board Meeting	0.030	0.065***	-0.05***	1.000											
IND_Meeting Attendance	-0.098	-0.007	0.015***	-0.037**	1.000										
Directors NO.	-0.06***	-0.172***	0.032***	-0.001	-0.003	1.000									
IND_expert NO.	-0.028	-0.030	-0.021	0.073	0.025	0.206	1.000								
IND_officials NO.	-0.031	-0.047	-0.040	0.011	0.002	0.077	0.070	1.000							
SB Meeting	-0.028	0.032**	-0.012	0.32***	0.054***	-0.011	0.089	0.043	1.000						
SB_expert NO.	-0.025	-0.078	0.057	0.004	0.019	0.145	0.079	-0.037	0.023	1.000					
SB_officials NO.	-0.029	-0.067	0.046	-0.001	0.014	0.068	-0.002	0.036	0.012	0.127	1.000				
firm age	-0.034	0.067***	-0.276***	0.101***	0.025	-0.092***	0.137	0.112	0.176***	-0.009	-0.043	1.000			
ROA	-0.121***	0.008	0.124	0.014	0.064	0.058**	0.031	0.001	0.061	0.059	0.0367	-0.051	1.000		
SIZE	-0.197***	-0.221***	0.253***	0.163***	0.047***	0.250***	0.118	0.028	0.119***	0.115	0.071	0.035*	0.189***	1.000	
LEV	0.103***	-0.02***	0.055	0.138	-0.061	0.052***	0.019	0.050	0.034	0.030	0.016	0.104***	-0.183***	0.227***	1.000

Notes: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

The Regression results are listed in [Table 2.7](#). For both of two measures of earnings management, the panel data are estimated with fixed effects as well as the random effects. Meanwhile, Pooled OLS Regression and Tobit Regression (since the absolute value of discretionary accruals and discretionary revenues are employed, greater than 0) are tested for both two models. There are no differences between the results of Tobit Regression and Pooled OLS Regression in both two models. Both industry and year dummies are included in this research to control for industry and time effect on earnings management in China. The T-statistics use robust standard errors (clustered by company) that account for potential heteroskedasticity and time series autocorrelation within each company. \*\*\* (\*\*, \*) indicates statistical significance at the 0.01 (0.05, 0.1) level (two tail test). According to the test results from [Table 2.7](#) in the Tobit and Pooled OLS regressions, the Discretionary Accrual model with performance-matched estimates has more explanatory power than the Discretionary Revenues Model.

Guest (2008) and Petersen (2009) express their concerns about one possible problem in pooling data across years: that is the errors for a given firm are correlated across years. Correspondingly, the clustering errors are utilized here instead of the standard errors on each firm. According to the prior research, such as Guest (2008), the application of industry dummies and year dummies in this study are expected to reduce the possibility of endogeneity problem caused by dependent variables and independent variables which are jointly determined by unobservable factors.

In both two measurements, Top 1 shareholding, Board meeting frequencies and firm age and leverage are all positively correlated with earnings management level, and firm size is negatively correlated with earnings management at the 1% significant level. Independent Directors' meeting attendance rate is negatively correlated with earnings manipulation level, indicating that the more frequently the Independent Directors meet the higher probability that earnings are manipulated. There are several different findings between the discretionary accruals model and the discretionary revenue model. Firstly, the discretionary accruals model suggests that state-owned firms are more likely to manipulate earnings. This result is consistent with previous studies. Yuan, Zhang, and Zhang (2007) discover that Chinese state-controlled listed firms prefer to carry out earnings management. This phenomenon can be interpreted as the evidence of a greater entrenchment effect than alignment effect from the majority shareholders of state-controlled listed firms. However, the discretionary revenue

model shows that state-owned firms are not correlated with earnings management at all. Secondly, the Discretionary Revenues model finds that a greater number of Board members and independent directors with official backgrounds will constrain earnings management in China. Thirdly, the more frequently the supervisors meet indicates a higher probability of earnings manipulation but only in the discretionary accruals model only. Lastly, there is a positive relationship between the variable of Return on Assets (ROA) and earnings management level in the Discretionary Accruals model at 1% significant level, illustrating that firms with higher ROA are more likely to engage in earnings manipulation. However, the Discretionary Revenue model reveals the opposite result: firms with lower ROA are more likely to participate in earnings management.

To keep consistency and better examine the time effect on earnings management, each company has 6-year observations (2005-2010). Hence, they are strong-balanced panel data for both two measures. In this study, firm-specific fixed-effects are introduced to control for the possibility of endogeneity which may result from omitted unobserved factors. Since the sample data are panel data, following Yuan et al., (2008), the clustered standard errors are employed (clustered at the firm level) which are robust to unknown heteroscedasticity and within-firm serial correlation in computing corresponding p-values. According to the Hausman test results from the panel data in [Table 2.8](#), Discretionary Accruals model and Discretionary Revenue model tell different stories respectively. In the Discretionary Accruals model, the Hausman test result of Chi square (probability) with industry effect is 20.68 (0.2960). The probability (0.296) is greater than 0.05, indicating that the Discretionary Accruals model with fixed effects may be inconsistent. Hence, the random effects should be applied in this model. Nevertheless, Hausman test results of Chi square (probability) with industry effect is 50.68 (0.0001) in [Table 2.8B](#). The probability (0.0001) is smaller than 0.05, proving that the random effects are inconsistent, therefore the fixed effects should be applied in the Discretionary Revenues model.

Under the Modified Jones Model with random effects by controlling time and industry effect, the test results are consistent with Tobit regression results. Board meeting frequencies, Top1 shareholdings (ownership concentration) and state-owned firms and firm age and return on assets (ROA) and leverage are all positively correlated with the level earnings management. The independent directors' meeting attendance rate and firm size are negatively correlated with earning management level.

Table 2.7 Tobit Regression and Pooled OLS Regression: Discretionary Accruals vs. Discretionary Revenue

Dependent Variable	Discretionary Accruals Model				Discretionary Revenue Model			
	N=6882		N=6882		N=6486		N=6486	
	Tobit Regression		Pooled OLS Regression		Tobit Regression		Pooled OLS Regression	
Residuals_abs (DAC)	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE
Constant	0.1600***	0.031	0.1600***	0.031	0.2510***	0.028	0.2510***	0.029
State-owned	0.0060***	0.002	0.0060***	0.002	0.0020	0.001	0.0020	0.001
Top1 (%)	0.0240***	0.005	0.0240***	0.005	0.0120***	0.004	0.0120***	0.004
Board_Meet(times)	0.0004**	0.000	0.0004**	0.000	0.0010***	0.000	0.0000***	0.001
IND_Meet Attendance	- 0.0560**	0.026	- 0.0560**	0.026	- 0.0780***	0.025	- 0.0780***	0.026
Number of Directors	- 0.0002	0.000	- 0.0002	0.000	- 0.0010**	0.000	- 0.0010**	0.000
No. of IND_expertise	- 0.0003	0.001	- 0.0003	0.001	0.0010*	0.001	0.0010*	0.001
No. of IND_official	0.0008	0.001	0.0008	0.001	- 0.0020***	0.001	- 0.0020***	0.001
SB_Meet(times)	0.0010**	0.000	0.0010**	0.000	0.0000	0.000	0.0000	0.000
No. of SBM_expertise	- 0.0004	0.001	- 0.0010	0.001	0.0000	0.001	0.0000	0.001
No. of SBM_official	- 0.0010	0.002	- 0.0010	0.002	0.0000	0.001	0.0000	0.001
Firm Age	0.0005**	0.000	0.0005**	0.000	0.0000*	0.000	0.0000*	0.000
ROA	0.0840***	0.016	0.0840***	0.016	- 0.0350***	0.013	- 0.0350***	0.013
SIZE	- 0.0040***	0.001	- 0.0040***	0.001	- 0.0080***	0.001	- 0.0080***	0.001
Leverage	0.0280***	0.004	0.0280***	0.004	0.0240***	0.004	0.0240***	0.004
Year	√		√		√		√	
Industry	√		√		√		√	
F	10.82		10.69		20.12		19.88	
Pseudo R-square	-0.03				-0.04			
R-square			0.07				0.12	
Adjusted R-square			0.07				0.11	



Table 2.8 Panel Data Analysis: Discretionary Accruals vs Discretionary Revenue

Dependent Variable	Discretionary Accruals Model				Discretionary Revenue Model			
	N=6882		N=6882		N=6486		N=6486	
	Fixed Effect		Random Effect		Fixed Effect		Random Effect	
	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE
Residuals_abs (DAC)								
Constant	0.1480**	0.072	0.1550***	0.033	0.0663	0.061	0.2410***	0.032
Board_Meet(times)	0.0010**	0.000	0.0010**	0.0002	0.0010***	0.000	0.0010***	0.000
IND_Meet Attendance	- 0.0490**	0.026	- 0.0510**	0.023	- 0.0860***	0.030	- 0.0830***	0.028
SB_Meet(times)	0.0003	0.001	0.0008	0.0005	0.0000	0.000	0.0000	0.000
Top1 (%)	0.0410***	0.016	0.0270***	0.007	0.0030	0.012	0.0110**	0.005
State-owned			0.0047**	0.002			0.0010	0.002
Number of Directors	- 0.0001	0.001	- 0.0002	0.001	0.0010	0.001	0.0000	0.000
No. of IND_expertise	- 0.0030***	0.001	- 0.0020	0.001	0.0000	0.001	0.0010	0.001
No. of IND_official	- 0.0020	0.002	- 0.0001	0.002	- 0.0020	0.001	- 0.0020**	0.001
No. of SBM_expertise	0.00140	0.002	0.0000	0.0011	0.0010	0.001	0.0000	0.001
No. of SBM_official	- 0.0010	0.003	- 0.0010	0.002	- 0.0030	0.002	- 0.0010	0.001
Firm Age			0.0005**	0.0003			0.0000	0.000
ROA	0.0650***	0.021	0.0764***	0.0183	- 0.0260*	0.016	- 0.0350***	0.014
SIZE	- 0.0040	0.003	- 0.0039***	0.0011	0.0020	0.002	- 0.0070***	0.001
Leverage	0.0400***	0.007	0.0319***	0.0049	0.0150***	0.006	0.0220***	0.004
Trend (Year)	Yes***		Yes***		Yes***		Yes***	
Industry Effect	No		Yes***		No		Yes***	
Wald chi2			238.25				431.12	
F	5.68				14.44			
R-square	0.03		0.07		0.07		0.12	
Hausman Test (chi2)	20.68 (0.2960)				50.68 (0.0001)			

The significantly positive relationship between Top1 shareholdings (ownership concentration) and earnings management at the 1% significance level is consistent with prior literature. Ding *et al.* (2007) state that highly concentrated ownership determines the nature of the agency problem in Chinese listed companies. Following Ding *et al.*'s (2007) work, Hu *et al.* (2010) specify that the highly concentrated ownership structure in China causes the major problems called the one-dominant controlling shareholder phenomenon: a large proportion of shares are traded by controlling shareholders with extensive insider dealings and market manipulations often. It also coincides with Shleifer and Vishny's view (1997) that one of the two most effective solutions to the agency problem is concentrated ownership (the other is legal protection). Johnson *et al.* (2000) suggest that the controlling shareholders are more likely to pursue their own benefits at the expense of minority shareholders: a phenomenon referred to as 'tunneling'. State ownership is positively correlated with discretionary accruals at the 5% significance level. It means that state-owned enterprises are more likely to manipulate earnings than the private companies. This is consistent with the evidence provided by Ding *et al.*, (2007) that the earnings management activities of Chinese listed firms are affected by their ownership concentration measured by the largest shareholder. They find an alignment effect does exist when the ownership concentration reaches a high level; large shareholders become the ultimate owners of the firm, and are more likely to preserve its future growth through decreasing accounting earnings; large shareholders perhaps incline to adopt accounting policies that represent their own interests rather than the economic substance of the business transactions due to an entrenchment effect.

Many studies in the US and UK and other European countries have tested whether board size, the percentage of independent non-executive directors, and frequency of board meetings are related to a firm's earnings quality. The results of these studies are mixed. The unique characteristics of internal governance in the Chinese background will influence the earnings quality differently from that in the West. According to the test results, board meeting frequency is positively and significantly with earning management: the more frequently the board meetings are held, the more likely earning are to be manipulated under the modified Jones model with random effects when the year and industry factors controlled. There is no finding providing that a greater number of independent directors (exceeding 1/3 of the board directors) can constrain earnings manipulations. However, the test results show that the higher the attendance rate of the independent directors, the lower the earnings manipulated.

As expected, firm age and leverage are positively correlated with earnings management under modified Jones models with performance matched. It shows that firms with higher leverage level find it easier to manipulate earnings to avoid the debt covenants violation, which complies with the 'debt hypothesis' supported by Watts and Zimmerman (1990). In China, firms with longer history are normally state-owned enterprises or transformed or controlled by the State. They have more incentives to engage in earnings management activities.

The Discretionary Accruals model provides evidence that firm size is positively correlated with earnings manipulation activities at the 1% significance level in China. It means that firms of larger size are more likely to participate in earnings manipulation. This is perhaps because the large-sized companies are owned or controlled by the State. They stand in the monopoly position in their industries with higher profitability without any pressures to continue rights issue or to avoid delisting from the capital market. Hence, it is unnecessary for large-sized firms to manipulate earnings. These results are robust to the control of firm characteristics and corporate governance variables, as well as industry and time effects.

There is an interesting result worth mentioning here. In the model of discretionary accruals, ROA (return on assets) is positively correlated with the level of earning management at 1% significance level. It's probably due to tax purposes or income smoothing. Different from Discretionary Accruals model, the Discretionary Revenues model shows that return on assets (ROA) is negatively correlated with earnings manipulation magnitude at a 10% significance level. It reflects that listed firms in China, with poor financial performance are more likely to inflate earnings to beat the very restricted profit benchmarks for rights issues and to avoid delisting regulated by Chinese CSRC.

Most importantly, none of the Independent Directors and Supervisors variables is significant under both the discretionary accruals model with random effects and the discretionary revenue model with fixed effects. It provides the evidence that independent directors and the supervisor system are dysfunctional in monitoring the Board activities in China. Wang (2008) argues that the independent directors have made certain but limited contribution to corporate governance in China, compared with the Supervisory Board which is perceived as just a decoration to the boardroom. It is consistent with the findings of Chen, Fan and Wong (2004) who argue that although the proportion of outsider directors on the board is high, the level of

board independence and professionalism is not necessarily good. They report that in China, politicians and state controlling owners occupy most board seats with almost 50 percent of the directors appointed by state-controlling owners, and another 30 percent affiliated with various layers of governmental agencies. There are few professionals (lawyers, accountants, finance experts) on Chinese boards and almost no representation by minority shareholders. Top management typically own little of their companies' shares, on average only 0.1 percent. Compensation incentive is unlikely to be an effective corporate governance mechanism in the Chinese listed companies.

These findings are consistent with Dechow and Schrand (2004) who emphasize that earnings management cannot be uprooted despite the existence of the various monitors-auditors, institutional investors, board of directors and the audit committees and analysts. The effectiveness of Supervisory Directors in China is undermined by incorporating political officers, close friends and allies of senior managers (Dahya et al., 2003; Xiao et al., 2004; Xi 2006; Hu et al., 2010). Consequently, the overall monitoring efficiency is destroyed (Xi 2006). The environment of Chinese Guanxi (relationship) culture leads to the independence of the independent directors being questioned. According to Peng (2004) and Wang (2008), Independent Directors may affiliate themselves with the controlling shareholders even if they hold no other posts in the company. Such independent directors can't be effective to reduce the controlling shareholders' expropriation from minority shareholders. Moreover, many companies try to invite current or former politicians to serve as independent directors to build up close relationships with the government, severely weakening the function of the Supervisory Board (Tian and Lau 2001; Peng 2004; Xiao et al., 2004; Chen et al., 2011).

In addition, CSRC clearly stipulates the number of concurrent posts for each independent director in the *Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies*<sup>33</sup>. *'In principle, independent directors can only hold concurrently the post of independent directors in five listed companies at maximum. They shall have enough time and energy to perform the duties of the independent directors effectively.'* However, some independent directors hold concurrent posts with more than five listed companies. Their performance and independence is compromised and questioned.

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<sup>33</sup> [http://www.csrc.gov.cn/pub/csrc\\_en/newsfacts/release/200708/t20070810\\_69191.htm](http://www.csrc.gov.cn/pub/csrc_en/newsfacts/release/200708/t20070810_69191.htm)

The results show that, through pooled OLS regressions and panel data analysis for both two models comprising industry effects, some industries are strongly significantly correlated with earnings management, for instance, the industry of Mining, Manufacturing, and Construction and Information Technology. It may suggest that these industries are more likely to manipulate earnings. The sample distributions by industry for Discretionary Accruals and Discretionary Revenue Model are presented in [Table 2.9A](#) and [Table 2.9B](#). The tables indicate that Chinese quoted companies are mainly concentrated in the manufacturing sector. Both industry and year dummies are included in this research to control for industry and time factors.

[Table 2.9A Distribution by Industry for Discretionary Accruals Model](#)

Industry Name	Industry Code	Frequency	Percent
Farming, Forestry, Animal husbandry	A	162	2.35
Mining	B	156	2.27
Manufacturing	C	4,074	59.20
Construction	E	150	2.18
Transportation and warehousing	F	300	4.36
Information Technology	G	396	5.75
Wholesale and Retail Trade	H	528	7.67
Real Estate	J	474	6.89
Social Service	K	222	3.23
Communication and Cultural Industries	L	54	0.78
Conglomerates	M	366	5.32
<b>Total</b>		<b>6,882</b>	<b>100.00</b>

Table 2.9B Distribution by Industry for Discretionary Revenue Model

Industry Name	Industry Code	Frequency	Percent
Farming, Forestry, Animal husbandry	A	156	2.41
Mining	B	138	2.13
Manufacturing	C	3,816	58.83
Construction	E	144	2.22
Transportation and warehousing	F	276	4.26
Information Technology	G	360	5.55
Wholesale and Retail Trade	H	486	7.49
Real Estate	J	486	7.49
Social Service	K	222	3.42
Communication and Cultural Industries	L	42	0.65
Conglomerates	M	360	5.55
<b>Total</b>		<b>6,486</b>	<b>100.00</b>

## 2.10. Robustness Test

One possible problem in pooling data across years is that errors for a given firm are also correlated across the years; thus the standard errors are replaced by clustering ones on each firm (Guest, 2008; Petersen, 2009). According to Guest (2008), the inclusion of industry dummies and year dummies should reduce the endogeneity problem caused by the possibility that the dependent variables and independent variables are jointly determined by unobservable factors. Another endogeneity problem concerns reverse causality, whereby the independent variables for control mechanisms, ownership structures, and firm value (included as independent variables) are determined by board size and/or structure, rather than vice versa (Guest, 2008). On this point, one of this study's robustness checks re-estimates the models using the Instrumental Variable technique (IV) through the 2SLS procedure, with the first year lag for the endogenous variables as instruments. The results show that there is no endogeneity problem in this study. In order to check if results are robust across the period, the models are re-estimated on a yearly basis. To examine the effect of regulation, which it is believed should be captured by year dummies; this study runs the same regressions with and without year dummies. Finally, it re-tests the two models using *Tobit Regression* (since the absolute value of discretionary accruals and discretionary revenues are employed, greater than 0) and *pooled OLS regression* (details please see [Table 2.7](#), p.84) instead of Panel Data Analysis (see [Table 2.8](#), p.85), which deals well with outliers. There are no differences between the results of Tobit Regression and Pooled OLS Regression in both two models compared with those reported in Panel Data Analysis. Both industry and year dummies are included in this research to control for industry and time effect on earnings management in China. The T-statistics use robust standard errors (clustered by company) that account for potential heteroskedasticity and time series autocorrelation within each company. The findings accordingly have important implications for policy makers and managers, as well as contributing valuable comparisons and contrasts to the empirical findings and theoretical viewpoints to be found in the existing research literature.

## 2.11. Summary

This study investigates whether board of directors and supervisory directors effectively monitor and thus reduce earnings management. Ownership structure is crucial to the firm's value maximization. Concentrated ownership gives the largest shareholders a substantial

discretionary power to use the firm's resources for personal gain at the expense of other shareholders. To capture the ownership aspect of corporate governance, this analysis calculates the stake of the largest shareholder to evaluate both the largest shareholder's interest in a company and its power over the board. The board independence and financial expertise of independent directors and supervisory directors as well as the number of independent directors required by CSRC are used as measures of corporate governance to evaluate the effective monitoring role of outside control of the board. This study considers one more variable to indicate whether or not the controlling shareholder is the government.

It examines the ability of revenue and accrual models to detect the relationship between Independent Directors and Earnings Management in China during the period of 2005-2010. In terms of the background of independent directors in Chinese quoted companies, they are classified into several groups: (1) Independent Directors with financial or accounting expertise; (2) Independent Directors with law expertise; (3) Independent Directors with management expertise; (4) Independent Directors who are technicians or engineers and (5) Others. By investigating whether (a) firms with more independent directors and supervisors will be less likely to engage in earnings management; (b) firms with more independent directors and supervisors having financial/accounting expertise will be less likely to manipulate earnings; (c) firms with a greater number of independent directors and supervisors with government official backgrounds will be more likely to participate in earnings management.

The test results suggest that all hypotheses have been rejected in China, suggesting that Chinese two-tier board structure comprising a board of directors of whom at least one third are independent directors and a supervisory board, fails to mitigate earnings management. This finding is inconsistent with the prior literature that outside directors contribute towards the integrity of financial statements. It shows that larger number of independent directors or supervisors with financial/accounting expertise do little to help constraining earnings management. Hence, the independent directors system and supervisory board have malfunctioned in monitoring and constraining earnings manipulation. Although *Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies* has been effective since the year of 2001, the performance and independence of independent directors have been questioned and compromised, has the supervisors' function in controlling



earning manipulation activities. On the contrary, independent directors and supervisors probably incline to participate in manipulating earnings due to alignment effect or entrenchment effect. Furthermore, the Modified Jones Model with performance-matched gives more powerful explanation of the earnings management phenomenon in Chinese listed companies than the Discretionary Revenues model.

One possible explanation is that independent directors and supervisory directors in China are often ‘vases’ and do not work as efficiently as in the developed countries. This indicates the independent directors and supervisory directors cannot voice for the minority shareholders; what they do is simply to agree with whatever the management or larger shareholders want, supporting the agency theory (conflict between controlling shareholders and minority shareholders) and stewardship theory. Since there is an extra agency relationship in state-owned companies compared to privately-owned companies, as the controlling owners are themselves agents of the true owners: the state. It implies that the market regulators, policy makers and standard setters should pay more attention to enhance the authentic independence of independent directors and supervisory directors in Chinese firms.

Although China has adopted many of the corporate governance mechanisms which are employed in developed countries, it has its own unique characteristics. The firm-specific factors, such as state ownership and the supervisory board, have great influence on the board independence and composition. The evidence manifests that the current corporate governance practice adopted by Chinese listed firms can be best described as a control-based model, which is remarkably distinct from the market-oriented model commonly employed in the US and UK. Under the control-based mode, the controlling shareholders (i.e. the State) in most cases tightly control the listed firms through concentrated ownership and management friendly boards. Prior literature also demonstrates that the control-based model is rooted in the ‘administrative governance’ approach adopted by the Chinese regulatory authorities, and is tailored to China’s specific institutional setting (Liu, 2006). Under the administrative governance approach, it is difficult to peel off business from politics, for instance, the stock market and foreign exchange market are strictly regulated. Consequently, the quality of public governance is of first-order importance in shaping the overall quality of corporate governance (Chen et al., 2004). More recent evidence shows that government regulations are also the source of many problems in the Chinese stock market. Therefore, concerns about the

efficiency of the uniform rules/regulations imposed by Chinese government are raised.

In addition, there is no hierarchical relationship between the board and supervisory board, which are both appointed by, and report to shareholders' general meetings in Chinese listed firms. Under the German model, the supervisory board is superior to the board of directors. The supervisory board in China has been criticized for its dysfunction (Dahya, Karbhari and Xiao, 2002). Wang and Liu (2006) and Liu *et al.*(2010) argue that most of the staff supervisors are representatives of government cadres or labor models, whose remuneration and position decided by the Board of Directors. Therefore, the supervision independence of workers representatives has been weakened. Prior research suggests that board independence, as measured by the percentage of independent directors, can improve corporate governance although its effectiveness depends on the business and regulatory compliance environment (Hermalin and Weisbach, 2003; Xie et al., 2003; Berghe and Baelden, 2005; Iwasaki, 2008; Cornett et al., 2009).

This research make potential contribution to extend the existing literature linking Board monitoring (both Independent Directors and Supervisory Directors) and earnings management by examining changes in regulation in China with weak corporate governance. Furthermore, this study will provide important implications for the policy makers and the corporate governance reforms in China to protect the minority shareholders' interests in the future. Finally, this analysis adds new insights to the existing corporate governance literature with a focus on a large, fast-growing, and transitional economy with large sample size. However, there are also some limitations in this research. One is the central criticisms associated with using discretionary accrual proxies to test for earnings management that may capture nondiscretionary accruals (i.e., differences in firm performance; see Dechow et al. 1995; Guay et al. 1996; Kasznik 1999; McNichols 2000). Another is the very low significance (the low adjusted R-square, e.g., lower than 10%, implying the models in this analysis do not do a good job at explaining the dependent variables; it is normally the case in mainland China) of the empirical models can be recognized as a limitation of this study.

# **Chapter 3 Earnings quality and Institutional incentives**

## **Chapter 3**

### **Earnings quality and Institutional incentives**

#### **3.1. Introduction**

A firm's various corporate governance practices shape its behavior and ultimately affect its stock market and accounting performance (Gompers, Ishii and Metrick, 2003). However, most empirical evidence is from US sample firms. Earnings management is identified to erode the quality of earnings. There is a gap in the literature linking earnings management with earnings quality in China. The explicit objective of the International Accounting Standard Board (IASB) is to develop a set of 'high quality' accounting standards. The development and implementation of a set of internationally accepted accounting standards has also stimulated growth in the Earnings Quality literature. There is no shortage of definitions of earnings quality. Analysts, investors, regulators, accounting standard-setters and academics have all made their contributions over several decades. Although earnings quality is extensively used in academic literature, there is neither a consensus on the definition of quality of reported earnings nor a generally accepted approach to measure all the attributes of earnings quality. This controversial phenomenon reflects the disagreements about various dimensions of earnings traits that are generally used to define its quality.

A stream of previous studies observe that different ownership types, for instance, family ownership (Wang, 2006; Chen et al., 2010), private equity ownership (Katz, 2009), public share ownership (Givoly et al., 2010) and venture capitalist ownership (Morsfield and Tan, 2006; Wongsunwai, 2013; Liu, 2014) affect financial reporting. In this paper, we will detect how reported earnings are impacted by another important ownership type, government ownership (or called 'state ownership'). Government ownership is an important institutional incentive of financial reporting, which is prevalent in Asian economies<sup>34</sup>. A number of these economies have established entities to oversee their state-owned enterprises (SOEs), for instance, Temasek Holdings in Singapore, Khazanah Nasional in Malaysia, and the State-owned Assets Supervision and Administration Commission of the State Council in China. The term 'SOEs' refers to enterprises where the state has significant control, through full,

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<sup>34</sup> A number of these economies have established entities to oversee their state-owned enterprises (SOEs), for instance, Temasek Holdings in Singapore, Khazanah Nasional in Malaysia, and the State-owned Assets Supervision and Administration Commission of the State Council in China.

majority, or significant minority ownership (*OECD Guidelines on Corporate Governance of State-owned Enterprises*, 2005). Indeed, state-ownership is perhaps one of the defining characteristics of China, where the government held approximately 83.1% of market capitalisation in 2007. Contrasting with China, in other Asian markets individuals and their families are the dominant shareholders. The conglomerate ownership structure in Korean *chaebols*, for instance, sees a large grouping of companies, with in many cases a large dominant entity retaining a disproportionate interest in cash flows when compared to ownership interest (OECD, *Reform Priorities in Asia*, 2011).

In China, State-Owned Enterprises (SOEs) still represent a substantial segment of GDP, employment and market capitalisation. SOEs are pervasive in utilities and infrastructure industries, including electricity, energy, transport and telecommunication sector whose performance is of great importance to broad segments of the population and to other parts of the economy. Consequently, the governance of SOEs will be crucial to ensure their positive contribution to Chinese overall economic efficiency and competitiveness. In their analysis of the effect of institutional factors on properties of accounting earnings, Ball et al. (2000) choose the political system as the key discriminating factor. Weetman et al. (2004) conclude from their analysis that in China the government continues to act as the accounting regulator in order to retain political control. Generally, governments will face complex challenges in improving the governance of state-owned enterprises. One of the main challenges in doing so is to put in place appropriate accountability and transparency processes.

The current transitional nature of the Chinese economy provides a valuable opportunity for examining the behaviour of companies with different ownership types, i.e. with state blockholders or private blockholders. Selecting a sample consisting of both privately-owned listed companies and state-owned listed companies for the purpose of comparison, this study is able to examine whether and how ownership concentration and ownership type affect firms' earnings management practices. It raises the public interest and concern about the emerging Chinese stock market, because China is the largest emerging economy with the fastest-growing stock market in the past ten years with some unique institutional features. Firstly, most listed firms in China are transformed from SOEs; hence Chinese government is usually the largest co-investor or controlling shareholder in these firms (Sun and Tong, 2003). Prior to an IPO, SOEs must go through a restructuring process in which an SOE is split in two parts: a subsidiary (state-owned listed firm) that goes IPO and a parent company that remains

an SOE. The subsidiary takes the productive assets and efficient employees. The parent company takes the non-productive assets and undertakes the responsibility for existing liabilities. Secondly, the government ownership is represented by various entities such as government agencies (the state asset management bureau at various levels), state asset holding/management companies, and state-owned enterprises (SOEs) (Chen et al., 2009). The parent company owns about one third of the listed firm's shares which is called 'legal person shares' and not supposed to be traded in the stock market. Another one third of the shares is owned by the government in the form of non-tradable 'state shares.' A state-owned listed firm usually has only one third of its total shares as tradable and sells it to individual investors. With the government's approval, non-negotiable shares can be transferred among different institutional shareholders, including state asset management bureaus, state holding companies, other SOEs, and legal persons. Non-state-owned firms emerged in the late 1990s after private ownership was allowed in China.

It still remains an empirical question whether government ownership worsen the earnings management problem in China. Because Chinese government still retains a substantial portion of state ownership even after decades of privatization reforms. SOEs are more likely to be influenced by government mandates, whereas Non-SOEs might be more influenced by market forces and managerial discretion. This study focuses on investigating how state ownership shapes a firm's incentives to report earnings that reflect economic performance. Government ownership is probably associated with higher earnings quality or lower earnings quality depending on how the listed firms view the nature of the government involvement.

China as a dynamic emerging economy was and is undergoing a series of market liberalization reforms. For instance, foreigners are permitted to invest in A-shares via QFII (the qualified foreign institutional investors) system regulated by the China Securities Regulatory Commission (CSRC) and the People's Bank of China. The first approved QFII traded in A-shares on 9th July, 2003. CSRC required all domestically listed companies to appoint at least one third independent directors on their board of directors by 30<sup>th</sup> June, 2003 (CSRC, 2001). The most influential split share structure reform commenced from 2005, which in essence approved non-negotiable state and legal person shares to be gradually negotiable. In addition, the *2006 Chinese GAAP* is introduced in an attempt to further improve the standardization process and narrow the existing gap, explicitly based on the current International Financial Reporting Standards (IFRS). To further enhance the quality of

financial reporting, the CSRC implemented new auditing standards, which became effective from 1<sup>st</sup> January 2007. The above changes are regarded to have significantly reduced information asymmetry in Chinese stock markets (Zhou, 2007). Ewert and Wagenhofer (2012) present that tightening accounting standards increases the ERC estimates. However, According to the report of the World Economic Forum's Global Competitiveness (2013-2014), which evaluates the strength of auditing and reporting standards in the countries all over the world, China is ranked at the 82<sup>nd</sup> position<sup>35</sup> (out of the 144 countries), which is lower than other Asian developing economies, e.g., Singapore (5th), Hong Kong (7th), Japan (11th), Malaysia (19th) and Taiwan (20th) etc. Hence, an investigation of the impact of state ownership on earnings quality will provide valuable insights into the understanding of corporate governance practices in mainland China.

### **3.1.1 Definitions of Earnings Quality**

There is no shortage of definitions of earnings quality. Analysts, investors, regulators, accounting standard-setters and academics have all made their contributions over several decades. Although earnings quality is extensively used in academic literature, there is neither a consensus on the definition of quality of reported earnings nor a generally accepted approach to measure all the attributes of earnings quality. This controversial phenomenon reflects the disagreements about various dimensions of earnings traits that are generally used to define its quality (Schipper and Vincent, 2003). The analysis of Demski (1973) implies that a general definition of earnings quality is elusive. Nevertheless, a higher informativeness is arguably a desirable attribute of earnings reports and one which concerns standard setters and researchers.

Penman and Zhang (2002) deem high-quality earnings as sustainable earnings and as a good indicator of future earnings. From a financial analysis perspective, Dechow and Schrand (2004) define high-quality earnings as persistent and permanent earnings that accurately reflect the fundamental intrinsic value of firms. Ball and Shivakumar (2008) suggest that high-quality earnings are conservative, while low-quality earnings are upwardly managed earnings. Adapted from the Statement of Financial Accounting Concepts No. 1 (SFAC No. 1),

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<sup>35</sup> According to the report of the World Economic Forum's Global Competitiveness (2011), which evaluates the strength of auditing and financial disclosures in individual countries, China is ranked at the 61st position (out of the 134 countries), which is lower than other Asian developing economies, e.g., Taiwan (3rd), Hong Kong (12th), and Malaysia (25th).

Dechow et al. (2010, p.344) identify that ‘higher quality earnings provide more information about the features of a firm’s financial performance that are relevant to a specific decision made by a specific decision-maker.’ It implies that the quality of reported earnings is a function of both the ability of the accounting system to evaluate the firm’s fundamental financial performance and how the accounting system is implemented. In general, accounting earnings that exhibit less earnings management and reflect losses on a timelier basis are interpreted as being of higher quality. Meanwhile, accounting numbers with great value relevance are explained as being of higher quality. Since Ball and Brown (1968), researchers have produced considerable studies providing the evidence on the association between accounting earnings and stock returns. While earlier studies focused on the U.S. market, more recent research has investigated the value-relevance of accounting information in non-U.S. markets because of increasing attention on the role of accounting information in global markets (e.g., Alford et al., 1993; Amir et al., 1993; Harris et al., 1994; Barth and Clinch, 1996; Chan and Seow, 1996; Graham and King, 1998). The metrics for value relevance are the explanatory powers of net income and equity book value for prices, and stock return for earnings. Higher explanatory power is interpreted as evidence of more value relevance. All accounting quality measures are based on those used in prior research.

The reported earnings are composed of two parts, cash flows and accruals, which are always the objectives to be managed or manipulated. Ronen and Yaari (2008) claim that understanding the underlying reason why earnings are managed is vitally important to both theoretical and empirical research. Naturally, it has attracted researchers’ attention on the issues relevant to earning quality. Based on the prevailing view from prior literature, Ronen and Yaari (2008, p.6) generalized the value of accounting information as ‘informativeness’ (from investors’ demand) and ‘stewardship’ (from management and shareholders’ demand). Consistently, Chaney et al. (2011) also document that when the reported earnings convey useful information and generate economic consequences, they are considered as a primary indicator of information quality. Accounting income (reported earnings) is a barometer for evaluating financial reporting, because any changes in balance sheet will flow through the income statement (Ball and Shivakumar, 2005). Report earnings numbers will be affected by the manipulation of either accruals or cash flows. Although cash flows are generally regarded to be more difficult to be manipulated than earnings, cash flows can be managed by real transactions and this type of managed transactions is a form of earnings management. Earnings management is deemed to undermine the quality of reported earnings. Highly



managed earnings are normally considered as low-quality. However, the absence of earnings management is not sufficient to ensure high-quality earnings, because some other factors may contribute to the earnings quality (Lo, 2007). Dechow et al. (2010) also observe that there is no single measure of earnings quality that is superior for all decision models.

### **3.1.2 The Determinants and Consequences of Earnings Quality**

Although the source of earnings quality is likely to have major influence on its consequences, most of the extant empirical papers test a prediction about either a determinant of quality or a consequence of quality, not both. A number of studies have returns (long- or short-window) as the dependent variable. The feature that the consequence studies have in common is that an earnings quality proxy is the independent variable (Dechow, 2010).

In light of the prior literature, Dechow et al. (2010) review the determinant factors for earnings quality and classify them in six categories: (1) Firm characteristics (including firm performance, debt, growth and investment, and size). Firm performance: researchers suggest firms with weak performance are more likely to have incentives to engage in earnings management and hence lower earnings quality (Petroni, 1992; DeFond and Park, 1997; Balsam et al., 1995; Keating and Zimmerman, 1999; Doyle et al., 2007a; Kinney and McDaniel, 1989). Debt: there is substantial evidence showing that debt levels are associated with various measures of earnings quality, including income increasing accounting method choices (e.g., Bowen et al., 1981; Zmijewski and Hagerman, 1981; Daley and Vigeland, 1983; Johnson and Ramanan, 1988; Malmquist, 1990; Balsam et al., 1995; LaBelle, 1990; Watts and Zimmerman, 1986). Firm growth and investment: researchers have examined the role of growth and earnings quality and found that high growth firms (measured in terms of sales growth or net operating asset growth) have lower earnings persistence (Nissim and Penman, 2001; Penman and Zhang, 2002). Firm size: early studies predict that firm size would be negatively associated with earnings quality because larger firms would make income-decreasing accounting method choices in response to greater political/regulatory scrutiny (Jensen and Meckling, 1976; Watts and Zimmerman, 1986). However, more recent studies observe that size is positively associated with earnings quality because of fixed costs associated with maintaining adequate internal control procedures over financial reporting, as suggested by Ball and Foster (1982); (2) Financial reporting practices. Three features of financial reporting practices affect earnings quality: accounting methods, broadly defined to

include principles (e.g., full cost versus successful efforts), estimates associated with accounting principles (e.g., straight-line versus accelerated depreciation), or estimates (e.g., pension accounting assumptions), and other financial reporting practices including financial statement classification and interim reporting, and principles based versus rules based methods. (3) Governance and controls: internal control mechanisms as monitors of the financial reporting system restrain the managers' opportunistic behavior to manage earnings, while managerial ownership and managerial compensation are generally predicted to affect earnings quality because they provide incentives for earnings management. (4) Auditors: researchers assume that auditors are a determinant of earnings quality because of their role in mitigating intentional and unintentional misstatements (DeAngelo, 1981). (5) Capital market incentives: a large number of studies examine the impact of capital market incentives on firms' accounting choices, making them potential determinants of earnings quality; And (6) External factors: considerable evidence supports that external factors, including capital requirements, political processes, and tax and non-tax regulation, are associated with accounting choices.

Previous studies relevant to the consequences of earnings quality detect the impact of earnings quality on a financial outcome. Dechow et al. (2010) summarize the consequences of earnings quality as nine categories based on their extensive literature review: (1) Litigation propensity. Studies present restatements increase litigation propensity (Palmrose and Scholz, 2004 and Lev et al., 2008); (2) Audit opinions. High-accrual firms are more likely to get modified audit opinions (Francis and Krishnan, 1999), but abnormally high working capital accruals are not associated with adverse audit opinions or auditor turnover (Bradshaw et al., 2001); (3) Market valuations. Firms that consistently meet or beat prior period earnings targets or analyst expectations are rewarded with higher valuations (see Barth et al., 1999; Kasznik and McNichols, 2002; Myers et al., 2007), even if there is evidence of earnings management in order to achieve the results (Myers et al., 2007); (4) Real activities including disclosure. Researchers have documented an association between earnings quality proxies and investment efficiency. Biddle and Hilary (2006) and Biddle et al. (2009) propose that high accounting quality (i.e., conservatism, loss avoidance, and earnings smoothing) reduces information asymmetry between managers and outside suppliers of capital and therefore improves investment efficiency. Three studies suggest that voluntary disclosure decisions are endogenously determined by earnings quality (Lougee and Marquardt, 2004; Chen et al., 2002; Lennox and Park, 2006); (5) Executive compensation. (6) Labor market outcomes. (7)

Cost of equity capital. (8) Cost of debt capital. The cost of debt capital seems to be higher when earnings quality proxies indicate low earnings quality (see Anderson et al., 2004 and Francis et al., 2005a); and (9) Analyst forecast accuracy. This stream of studies hypothesize that analysts are unbiased and qualified predictors of future earnings. Under this hypothesis, variation in analyst forecast accuracy reflects the earnings attributes that are related to quality. This methodology is akin to inferences about earnings quality from returns-based studies based on an assumption of market efficiency and analyst efficiency (for instance, Brown, 1983; Elliott and Philbrick, 1990; Ashbaugh and Pincus, 2001; Bhattacharya et al., 2003a; and Kim and Schroeder, 1990).

### **3.1.3 Earnings Quality and Corporate Governance**

There are two seemingly contradictory perspectives in the literature on the relation between corporate governance and earnings quality. One perspective predicts that firms compensate inherent limitations in the ability of accounting information to reflect underlying economics (i.e., poor earnings quality) with stronger governance mechanisms. The other perspective predicts that stronger governance structures constrain earnings management, leading to better earnings quality (Olsson and Athanasakou, 2010). A stream of previous studies observe that different ownership types, for instance, family ownership (Wang, 2006; Chen et al., 2010), private equity ownership (Katz, 2009), public share ownership (Givoly et al., 2010) and venture capitalist ownership (Morsfield and Tan, 2006; Wongsunwai, 2013; Liu, 2014) affect financial reporting. This study will detect how reported earnings are impacted by another important ownership type, government ownership, or ‘state ownership’.

Various corporate governance practices in a firm shape its behaviour and influence on its stock market performance and accounting performance. For example, independent directors should ensure all financial decisions represent the best interests of all shareholders and should not result in earnings or cash flows that are biased towards the managers or controlling shareholders (CSRC, 2002). CSRC relies on accounting numbers to regulate the listed companies (i.e. decide whether to grant them the rights to issue new shares, or delist them due to consecutively poor performance). Some studies on Chinese firms emphasize the relation between state ownership and firm performance. Xu and Wang (1999) demonstrate Chinese listed firms’ accounting performances are negatively related to the degree of state ownership. Not surprisingly, the low level of corporate governance practiced by the Chinese

listed companies has made earnings management or even distorting financial reports easily accessible. To a great extent, this will undermine the reported earnings quality. The relation between corporate governance and earnings quality is an issue that has proved elusive and often contentious among accounting researchers. Part of the reason is that the empirical literature that examines earnings quality and corporate governance has found weak and inconsistent results (Larcker, Richardson and Tuna 2007). A more fundamental reason is the difficulty in establishing linkages and main causal relations in situations where various information structures, such as earnings quality, can both affect governance structures and be affected by them. Several studies recognize that earnings quality and corporate governance can affect each other (for example, Armstrong, Guay and Weber 2010; Ferreira, Ferreira and Raposo 2011). Olsson and Athanasakou (2010) argue that the source of earnings quality is in innate firm characteristics or product of managerial incentives.

Prior studies suggest that good corporate governance practices serve as the effective mechanisms to ensure the fairness among different stakeholders in the listed firms (Collier and Esteban, 1999; Jensen, 2005; Matten and Crane, 2005) and to constrain earnings management, leading to better earnings quality (Olsson and Athanasakou, 2010). Improving transparency and accountability is regarded as a key priority to improve the corporate governance of SOEs and considered as politically more feasible and less costly than drafting new regulations (OECD, 2005). Transparency refers to the amount, scope, quality, accuracy and timeliness of information which is accessible to relevant stakeholders. By mitigating information asymmetry, thus solving the principal-agent problem, transparency enhances the competence of outsider directors to monitor and evaluate the behaviours of managers and other insiders. Transparency is not an end in itself but a powerful tool to improve accountability and the overall corporate governance mechanism. Transparency without accountability is meaningless and they supplement each other.

Prior literature on earnings quality has measured several dimensions of corporate governance including firm size and composition of board of directors, existence of audit committee, and the level of institutional ownership (for instance, Brown and Caylor, 2006; Larcker et al., 2007; Jiang et al., 2008). The relationship between typical measures of corporate governance and earnings quality has been examined. However, these empirical studies present an inconsistent set of results. The mixed results are probably attributable to the difficulty in generating reliable and valid measures for the complex construct that is termed 'corporate

governance'. By analyzing a sample of 2,106 firms and 39 structural measures of corporate governance (e.g., board characteristics, stock ownership, institutional ownership, activist stock ownership, existence of debt-holders, mix of executive compensation, and anti-takeover variables), Larcker et al. (2007) conclude that 14 governance factors of corporate governance have a mixed association with abnormal accruals, little relation to accounting restatements, but some ability to explain future operating performance and future excess stock returns.

### **3.1.4 Earnings Management and Earnings Quality**

As Healy and Wahlen (1999) and Schipper (1989) defined, 'Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.' When managers attempt to manipulate earnings, they are deliberately trying to hide current performance; the result is that current earnings are not indicative of future performance or intrinsic value (Dechow and Schrand, 2004). Given the definitions of earnings management by Schipper (1989) and Healy and Wahlen (1999) and Dechow and Schrand's (2004) definition of earnings quality—that earnings reflect current performance, that earnings data are useful for predicting future performance, and that the earnings data accurately annuitize intrinsic firm value—clearly, earnings management undermines earnings quality. Beyer et al. (2014) propose that earnings quality is a measure of the information asymmetry caused by earnings management and other reporting distortions. Thus, reported earnings that exhibit less earnings management are explained as being of higher quality.

Lo (2008) suggests that earnings management has a lot in common with earnings quality. A consensus among accounting researchers is that highly managed earnings have low quality. However, the absence of earnings management is not sufficient to guarantee high-quality earnings (or high-quality accounting numbers more generally), because other factors contribute to the quality of earnings. For example, accountants following a poor set of accounting standards will generate low-quality financial reports. While there are other interpretations of earnings quality, Ball and Shivakumar (2008) deem high-quality earnings as conservative, while low-quality earnings are upwardly managed earnings. Two alternative definitions of earnings quality come to mind. The first is the sustainability of the earnings. The second is the lack of bias or neutrality of the earnings and of the accounting policies and

estimates used to generate those earnings.

The determination of earnings requires estimation and judgment. It will generate a problem with the reliability of accounting earnings because accruals are likely to be estimated with errors which tend to reduce the persistence of reported earnings relative to that of true economic earnings. Estimation errors are irrelevant to evaluate current performance and to predict future performance, because they will be amended in the future period. Earnings quality can be enhanced when accruals smooth out value-irrelevant changes in cash flows, but it may also be lowered when accruals attempt to hide value-relevant changes in cash flows. Reliability is an essential characteristic for accounting information to be useful for decision making. Reliability represents the extent to which the information is unbiased, free from error, and representationally faithful (*FASB, 1980*).

### **3.1.5 Accounting Standards Convergence with IFRS in China**

Dechow et al. (2010) imply that the quality of reported earnings is a function of both the ability of the accounting system to evaluate the firm's fundamental financial performance and how the system is implemented. Accounting standards that require firms to provide more complete disclosures related to underlying economic constructs represented by accounting information can help users better assess accounting information quality. The evidence on the impact of principles-based vs. rules-based standards on earnings quality is mixed.

Conceptually, a potential advantage of principles-based standards is that removing alternative accounting treatments for a transaction in favour of a single principle that reflects underlying performance would result in a more informative and relevant earnings number because it limits management's opportunistic discretion in determining accounting numbers. For instance, Barth and Landsman and Lang (2008) address the question whether adoption of the International Accounting Standards (IAS) combined with effects of features of the financial reporting system, such as standards, interpretation, enforcement, and litigation, is associated with higher accounting quality. They find that firms applying IAS from 21 countries generally provide evidence for a higher accounting quality (e.g. less earnings management, more timely loss recognition, and greater value relevance). However, some studies conclude that principles-based standards will not diminish opportunistic earnings management (Cuccia et al., 1995; Nelson et al., 2002); some studies also document that the mandatory adoption of

the IFRS has not improved the earnings quality of Chinese listed firms (see Chen and Cheng, 2007; He et al., 2009). Since the inherent flexibility in principles-based standards may give greater opportunity for firms to manipulate earnings thereby lowering accounting quality. Furthermore, findings in Bradshaw and Miller (2007) suggest that the regulatory and litigation environment is also important in the application of accounting standards. Daske et al. (2008) show that IFRS simply has impact on those countries where there is high transparency and strong legal enforcement. It will eliminate any improvement in accounting quality arising from higher quality accounting standards if the enforcement of accounting standards is lax. Leuz et al. (2003) find that earnings smoothing is less pronounced in common law countries; the IAS are based on a conceptual framework similar to those of common law countries. China is under the civil law jurisdiction (*Corporate Governance in Asia, OECD, 2014*). Ewert and Wagenhofer (2012) present that tightening accounting standards will increase the ERC, which is also an important attribute of earnings quality.

The Chinese government started the first accounting reform in 1993. The initial and further harmonization with international accounting and corporate governance practices took place in 1998 and 2001 respectively, which further brought Chinese accounting standards in line with international accounting standards and significantly improved the quality of corporate accounting disclosures. The 2006 Chinese GAAP promulgated by the Ministry of Finance (MOF) and China Accounting Standards Committee (CASC) is introduced to further improve the standardization process and to enhance the comparability of accounting standards, to assist Chinese enterprises in going abroad, and to facilitate overseas financing and international exchange and cooperation. It covers a new Basic Standard and 38 Specific ASBEs which have been largely converged with IFRS with some differences, indicating that China moved from a ‘rules-based’<sup>36</sup> to a more ‘principles-based’<sup>37</sup> regime. China, with the successful establishment of the Chinese Accounting Standards for Business Enterprises and its convergence with the IFRS, is among the leading jurisdictions making efforts to move towards a single set of high quality, globally accepted standards. These changes were

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<sup>36</sup> *The ICAS definition of a rule:* A rule is a means of establishing an unambiguous decision-making method. There can be no doubt about when and how it is to be applied. (ICAS, 2006, p. 4)

<sup>37</sup> *The ICAS definition of a principle:* A principle is a general statement, with widespread support, which is intended to support truth and fairness and acts as a guide to action. Principles-based accounting standards are based on a conceptual framework, consist of a clear hierarchy of over-riding principles and contain no “bright-line” or anti-abuse provisions. Such an approach requires the use of judgment by preparers, auditors and regulators. (ICAS, 2006, p. 1-2)

accompanied by some remarkable reforms in corporate ownership structure, corporate governance, and market infrastructure.

On the other hand, the same set of accounting standards will yield different accounting outcomes when different preparer incentives are provided. The application of accounting standards involves the use of judgment and discretion by corporate insiders through the use of reported earnings to provide more information about a firm's economic performance or to serve other less benign interests (Burgstahler et al., 2006; Leuz et al., 2003). Thereby, the reporting incentives and the forces shaping them are likely to determine earnings quality.

### 3.1.6 Contribution and Frame Structure

Many countries have state-owned firms and non-state-owned firms. However, which type of firm is actually the driving force to the economy under a specific accounting practice is still unknown. A less investigated but controversial topic is the effect of state ownership on the corporate earnings quality. The sweeping size of state intervention has made China an ideal research context. The more recent secondary privatisation has made state ownership a less effective/informative measure for government intervention, which has not been addressed properly by the prior literature. This research focuses on investigating how government ownership shapes a firm's incentives to report earnings that reflect economic performance. It makes the potential contributions to the existing research in several respects as follows.

First, since ownership structure is the primary determinant of agency cost, this study attempts to link companies' ownership structure with their earnings management behavior. We track the ultimate controllers instead to grade government intervention and examine the effect of government ownership and its associated institutional incentives on firms' earnings quality based on large samples of Chinese firms (10-year data with 6750 firm-specific observations) during 2004 and 2013 in which a series of policies and regulations related to market liberalization were introduced into Chinese listed firms. Second, it contributes to the accounting literature by examining firm-level evidence in China, through fully capturing the earnings attributes related to the concept of earnings quality rather than a single attribute of earnings quality, from the perspective of both *accounting-based* (including accrual quality, persistence, predictability and smoothness) and *market-based* earnings attributes (including value relevance, timeliness and conservatism). Earning Response Coefficient (ERC) is



extended as a function of ‘*market-based*’ earnings quality via detecting earnings surprise, which is measured by: (a) the deviation of actual earnings from a predicated amount based on a time-series model of earnings *and* (b) the deviation of actual earnings from the consensus (median) analyst forecast (analyst forecast error), computed using each analyst’s latest forecast before the earnings announcement. This analysis also tests whether analysts’ forecasts are more accurate than forecasts based on time-series predicted statistics with random walk. Finally, consistent with the conventional belief that state ownership is a major barrier to corporate efficiency, Chinese SOEs are found to have lower earnings quality than Non-SOEs. The empirical findings shed light on the contemporary corporate governance literature regarding to the debate over the impact of government ownership.

The remainder of this chapter proceeds as follows. Section 3.2 explains the theoretical framework for this empirical chapter. Section 3.3 reviews the literature related to earnings quality. Section 3.4 makes hypotheses development. Section 3.5 explains our research methodology. Section 3.6 describes the sample selection and empirical results. Section 3.7 presents the robustness test results. Section 3.8 summarizes and concludes.

## **3.2. Theoretical Framework**

### **3.2.1 Information Asymmetry**

‘Information perspective’ provided by Healy and Palepu (1993) discuss the information asymmetry between management who have superior information and other stakeholders. When information asymmetry is high, stakeholders do not have sufficient resources or access to relevant information to oversee managers’ behavior, which causes rampant practice of earnings management (Schipper, 1989; Warfield et al., 1995). Different ownerships lead to different information asymmetry and demand for accounting information transparency. Healy and Palepu (2001) argue that demand for financial reporting and disclosure are attributable to information asymmetry and agency conflicts between managers and outside investors. They suggest that the potential solution to the information asymmetry problem is to set regulation or rules that require managers to fully disclose their superior private information. Biddle and Hilary (2006) describe that high reported earnings quality (e.g., conservatism, loss avoidance, and earnings smoothing) reduces information asymmetry between managers and outsiders. Bhattacharya et al. (2012) propose that poor earnings quality conveys distorted information about firms’ future cash flows and show that poor earnings quality is associated with higher

information asymmetry from the perspective of indirect links. Two recent studies have found timely loss recognition alleviating information asymmetry mitigates negative market reactions to bad economic news (Francis et al., 2013; Kim et al., 2013).

Ownership structure is regarded as the primary determinant of agency cost. Following Berle and Means (1932), Jensen and Meckling (1976) and Roe (1994) indicate the agency problem stem from the conflict of interests between the shareholders and managers when ownership is diffuse such as in the USA and the UK. However, if ownership is highly concentrated such as the circumstances in East Asia, the agency problem stem from the conflicts between controlling shareholders and minority shareholders. More importantly, there is one more type of agency cost in state-owned enterprises, i.e. the agency cost between the state and the controlling owner, and this type of agency cost cannot be addressed simply by ownership concentration, it is predicted that the entrenchment effect of ownership concentration on earnings management is more serious in state-owned enterprises than in private enterprises.

Agency problems are more serious in SOEs than in Non-SOEs because of the multiple types of conflicts of interest including those between the state and minority shareholders and between owners and managers. Higher managerial ownership is regarded to reduce the agency cost of information asymmetry, and therefore reduces earnings management. However, management, employee, and foreign shares account for a very small proportion of Chinese firms' issued share capital (Firth *et al.*, 2002 and Xu, 2004 as cited in Firth *et al.*, 2007). Hence, controlling the conflicts among different interest groups in SOEs is difficult because of a highly layered organizational hierarchy in SOEs where information is more likely to be distorted as it moves from one level to the next. In addition, monitoring tasks often performed by government officials who are in fact agents of the state are ineffective in SOEs. The multiple interest conflicts result in more information asymmetry and more managerial opportunistic behaviors (i.e. earnings management). Shleifer and Vishny (1989) argue that concentrated ownership often promotes managerial self-dealing and magnifies private control benefits. Since state ownership is highly significant in most Chinese state-owned firms, Leuz et al. (2003) suggest managers are more likely to mask firm performance and limit information disclosure for the benefit of controlling parties in SOEs. Since there is an extra type of agency relationship in SOEs compared with Non-SOEs, i.e. the conflicts between the state and controlling shareholders, as the controlling owners are themselves agents of the true owners: the state. However, recent developments in corporate governance

have highlighted another form of conflict of interests-the controlling shareholders seek for their own benefit at the expense of minority shareholders. This has been called ‘tunnelling’ (Johnson *et al.*, 2000). La Porta et al. (1999) conclude, ‘the central agency problem in large corporations around the world is that of restricting expropriation of minority shareholders by controlling shareholders’. Corporate governance has a direct impact on firms’ profit reporting incentives. If the managers or the largest shareholders want to expropriate the minority shareholders and tunnel firms’ resources, they have incentives to hide the true performance of the firms. Liu and Lu (2004) also provide evidence that the purpose of earnings management in China mainly is to tunnel, that is, to facilitate the controlling shareholder’s expropriation of the minority shareholders.

Analytical evidence provides that the greater the information asymmetry between management and its shareholders, the more likely the firm is to manipulate accruals and reported earnings. Previous empirical results suggest a significantly positive relationship between measures of information asymmetry and earnings management. One measure of information asymmetry between management and shareholders is the dispersion in analysts' forecasts (e.g., Healy et al., 1995; Richardson, 2000). Outside investors are not well informed about the manager's incentives or reporting distortions driven by accounting rules, resulting in an equilibrium which is characterized by ex-post information asymmetry between the manager and the capital market. Brown and Han (1992) argue that when the amount of information asymmetry decreases, there is more likely to be a higher consensus among financial analysts about the future performance of the firms.

### **3.2.2 Political Costs Hypothesis**

Watts and Zimmerman (1978, 1986) suppose that political cost is one of the important incentives that stimulate managers’ accounting choices and reporting practices. Healy and Wahlen (1999) consider political cost as one of the incentives for earnings management (opportunistic behavior). Bushman and Piotroski (2006) also argue that managers manipulate financial reported numbers in response to government intervention. Consistent with the political theories of North (1990) and Olson (1993), Liu et al. (2014) provides empirical evidence supporting the political theories in which government manipulates the accounting numbers of state-owned listed firms for its self-serving purposes. If the management of state-owned listed firms regards tunneling by their parent companies as detrimental expropriation

by the government, they may not be motivated to report aggressively to avoid a high political cost (Healy and Wahlen, 1999). They may even report the numbers conservatively to disguise profits rather than smooth the reported earnings or manage towards a positive income to meet the needs of the parent companies. On the other hand, if managers consider government engagement as a necessary intervention to eliminate poor performing firms, they will report earnings aggressively, and the firms will look much healthier. Jian and Wong (2003) find that group-controlled firms, where controlling owners are companies rather than individuals or families, in China are more likely to use connected transactions to manipulate earnings and tunnel firm value.

Chinese Securities Regulatory Commission (CSRC) was criticized by asymmetrically favoring state-owned firms regarding new rights issues and IPO quota (Chen et al., 2003). Various studies have argued that governmental and non-governmental companies create incentives for companies to manage reported earnings because they can impose costs on companies that are 'too profitable.' High profits can bring attention to a company that would otherwise like to stay off the regulatory radar screen. More importantly, high profits may be used as evidence that the company is gouging its customers. Agencies that serve to protect consumer interests may attempt to regulate prices charged by companies that show high profits. The unusual feature of this political cost argument to explain earnings management is that it predicts that companies will manage earnings down.

The factors like government intervention (bureaucratic interference), weak incentives, and the lack of market competition, state ownership has been frequently associated with poor corporate governance, less corporate efficiency, misallocations of resources, and unethical behaviors such as corruption and fraud (Boardman and Vining, 1989; Megginson et al., 1994; and Shleifer, 1998). In such an environment with ineffective corporate governance mechanisms and inadequate market discipline, managers from the state-owned enterprises are more likely to exercise discretion in accounting information. Bushman and Piotroski (2006) compare accounting conservatism in countries with more government interventions with accounting conservatism in countries with less government interventions in the economy. They find that the extent of the government involvement in a country's economy is associated with conservative accounting in countries with weak investor protections (civil law country) and is associated with aggressive accounting in countries with strong investor protections (common law country).

Prior literature argues that government control and intervention are likely to influence the financial reporting quality. Watts (2003a) proposes that one factor influencing accounting conservatism is regulations. He argues that standard setters may be confronted with political pressure and public criticism. To reduce their political costs and protect the interests of investors, these authorities prefer conservative accounting (Bushman and Piotroski, 2006). As Xia and Zhu suggested (2009), accounting conservatism is greater among SOEs, which implies that the managers' concerns about their promotion (political careers) and governmental pressures specific to SOEs likely play an important role in shaping accounting practices. Under the government pressure for good earnings performance and with government regulations supporting earnings management, state-owned listed firms may have more incentives to engage in earnings management than non-state-owned firms via multiple earnings management choices such as earnings smoothing, managing toward positive income, and aggressive accounting to meet the target of parent companies.

### **3.2.3 Market Efficiency Hypothesis**

In this study, market return is used to deduce earnings quality based on prior literature. Inference about earnings quality from return-based (market-based) attributes of earnings relies on the assumption of market efficiency. On the basis of previous studies, earnings are judged to be of higher quality when they are (1) more persistent and less volatile; (2) more strongly associated with future cash flows realizations, and (3) more strongly associated with contemporaneous stock price performance or market value. The 3<sup>rd</sup> criterion as a benchmark for judging earnings quality assumes that markets are efficient and that stock prices quickly reflect all publicly available information. Fama (1970) defines efficiency as the ability of the market to rapidly digest new information so that stock prices would at every point in time incorporate all relevant available information. This has become known as 'Efficient Market Hypothesis' and an arbitrage argument is used to show that the EMH implies the absence of predictability of asset prices—if prices were predictable, profits could be made on the basis of the predictability and arbitrage would eliminate these profits in an efficiently operating market.

Kawakatsu and Morey (1999) investigates the relationship between financial liberalization and the Efficient Markets Hypothesis and find little evidence that deregulation improves the efficiency of the markets. If the stock market is efficient in anticipating analysts' rational

behavior, the market should adjust for the skewness-induced bias in analyst forecasts. Larger earnings surprises lead to larger stock market reactions. Drummen and Zimmerman (1992) and Eftekhari and Satchell (1999) all find that country characteristics predominated over other factors (e.g. world factors and industry trends) in the determination of stock returns. Bekaert and Harvey (1997) observed that volatility tends to decrease following market liberalizations, and that more open economies are less volatile. Claessens et al. (1995) also found significant first-order correlations, as well as noting that diversification effects exist among emerging markets. They observed that the returns in emerging markets are associated with positive skewness and excess kurtosis, and higher volatility than developed markets. However, Heckman et al. (1999) found that country factors were of reduced importance in determining returns, while industry factors had remained constant.

Emerging markets have very distinctive characteristics and are structurally different from both developed markets and each other. The Chinese A-shares market is deemed not as efficient as the U.S. stock market (Morck et al., 2000; Wang et al., 2009). Bekaert et al. (1998) and Claessens et al. (1995) find that the returns distributions of emerging markets are highly abnormal, with significant (usually positive) skewness and excess kurtosis that vary through time. These characteristics may become less pronounced as a market's economy comes to more closely resemble a developed market through increased openness and liberalization. To the extent that at least certain investors rely on financial statement information in making their investment decisions, it creates enough incentives for the stock market to reward high quality earnings. The assumption is that if the earnings numbers generated by the accounting system are informative then it should be reflected in stock returns. In testing for those return-based earnings attributes, it is assumed that the market is efficient in China so that the stock returns effectively capture the underlying firm-specific economic performance. For example, the Basu model captures conditional conservatism and relies heavily on the efficient market hypothesis, as it assumes that negative returns proxy for the bad news of firms. However, China's stock market is questioned due to high synchronicity where stock returns capture low amounts of firm specific information (Morck et al., 2000).

### **3.2.4 Analyst Efficiency Hypothesis**

Financial analysts have long been believed to make sophisticated and unbiased judgements, to incorporate all publicly available (firm-specific, industry, financial and market)

information and to be well informed about the arrival of any new information. Inferences about earnings quality by examining analyst forecast accuracy are subject to the assumption of analyst efficiency. Under this assumption, analysts are presumed to be rational experts who predict future earnings and make recommendations on an unbiased basis; they are considered to be less likely to misunderstand the implications of financial information than normal investors. Therefore, variation in analyst forecast accuracy reflects the earnings attributes that are related to earnings quality. Similar to inferences about earnings quality from returns-based studies that are subject to the caveat that they rely on an assumption of market efficiency, inferences about earnings quality from analyst forecast tests are subject to the caveat that they rely on an assumption of analyst efficiency.

Dechow et al. (2010) review four studies which examine analyst forecasts as a function of earnings quality in their paper (e.g., Brown, 1983 and Elliott and Philbrick, 1990; Ashbaugh and Pincus, 2001; Bhattacharya et al., 2003 and Kim and Schroeder, 1990), which assume that analysts are unbiased and qualified predictors of future earnings. For instance, Brown (1983) and Elliott and Philbrick (1990) provide evidence on specific accounting methods that improve predictability (i.e., reduce analyst forecast error); Kim and Schroeder (1990) suggest that analysts are not misled by discretionary accruals. While some studies provide evidence that analysts (1) make biased forecasts and (2) tend to misinterpret new information. For example, analysts are considered to produce upwardly biased forecasts (Fried and Givoly, 1982; O'Brien, 1988; Butler and Lang, 1991; Brous, 1992; Brous and Kini, 1993; Francis and Philbrick, 1993; Kang, O'Brien and Sivaramakrishnan, 1994; and Dreman and Berry, 1995). Analysts are supposed to systematically underreact to bad news (Lys and Sohn, 1990; Abarbanell, 1991; Abarbanell and Bernard, 1992; Ali, Klein, and Rosenfeld, 1992; Elliot, Philbrick, and Wiedman, 1995; and Teoh and Wong, 1997). Moreover, DeBondt and Thaler (1990) and Brown (1993) conclude that analysts systematically overreact to good news. Analysts' under-reaction to bad news or overreaction to good news implies that analysts are systematically optimistic when they consider the implications of new information. Overall, neither under-reaction nor over-reaction is consistent with rational forecasts and an efficient market for expert information.

Ruch and Taylor (2015) review the literature on conservatism's effect on analyst forecast accuracy and find mixed results when using both conditional and unconditional conservatism. For example, Mensah et al. (2004) show that conservative accounting increases analyst

forecast error<sup>38</sup> and dispersion by measuring unconditional conservatism. Helbok and Walker (2004) argue that analyst forecasts are optimistically biased under conditionally conservative accounting practices. Because analysts fail to efficiently incorporate the implications of conservative treatment of economic news into their forecasts until that news becomes available (Pae and Thornton, 2010). It implies that accounting conservatism results in noisy, biased, and inefficient earnings forecasts. Louis et al. (2014) find a significantly negative relationship between conditional conservatism and the optimistic bias of analysts contrary to Mensah et al.'s result (2004). Prior literature summarizes some explanations for the forecast optimism (Kothari, 2001). The strategic reporting bias explanation (Francis and Philbrick, 1993; Dugar and Nathan, 1995; Das et al., 1998; Lim, 2001) for optimistic forecasts is to promote revenue-generating businesses for the brokerage firms and to facilitate information access to the management. Under the selection bias explanation (McNichols and O'Brien, 1997), analysts are both rational forecasters and truthful reporters; but they report their beliefs selectively only when they hold favorable views of the firm. The cognitive bias explanation (Abarbanell and Bernard, 1992; Elgers and Lo, 1994) posits that analysts are irrational forecasters who systematically err in their processing of publicly available information.

Using analyst forecasts to detect earnings quality rather than using market prices has the advantage that the analyst forecast relates only to earnings, while a market price reflects information other than earnings. Hence, tests that infer earnings quality using market prices and assuming market efficiency confound interpretation of the impact of earnings quality alone on decision usefulness. A disadvantage of using analyst forecasts, however, is the necessary assumption that analysts are unbiased and expert forecasters, given that evidence on the validity of these assumptions is questionable. Several studies conclude that when analysts can rationally anticipate accruals management, they appropriately incorporate the implications of accruals into their forecasts (Kim and Schroeder, 1990; Coles et al., 2006; Burgstahler and Eames, 2003). On the contrary, Bradshaw et al. (2001) and Elliott and Philbrick (1990) provide contradictory evidence. Abarbanell and Lehavy (2003) possibly reconcile these results. They show that analysts fundamentally understand the implications of accruals for earnings predictability, as evidenced by their recommendation decisions, but that forecasts are nonetheless biased.

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<sup>38</sup> Forecast error refers to the absolute value difference between the actual EPS and forecasted EPS, scaled by the beginning of stock price. Higher conservatism results in a more negative forecast error. A negative error reflects the optimistic bias in initial forecasts.



### **3.3. Empirical Literature Review**

Prior research on the association between ownership structure and earnings quality mainly focuses on three areas: (1) Managerial ownership and earnings quality (Warfield et al., 1995; Gabrielsen, 2002; Yeo, 2002); (2) Institutional ownership and earnings quality (Dobrzynski et al., 1986; Coffee, 1991; Jiamba. Ivo, 2002) and (3) Ownership concentration and earnings quality (La Porta et al., 1998; Fan and Wong, 2002). There are mutually exclusive conclusions for the relationship between institutional ownership and earnings quality. It shows that the higher the listed company's ownership concentration, the lower the firms' earnings quality. For instance, Larcker et al. (2007) find a positive association between block ownership and abnormal accruals. It is ambiguous in the emerging economies whether the managers in state-owned firms would behave in the same way as their counterparts in private companies regarding financial reporting. In a cross-country setting Leuz et al. (2003) conclude that ownership concentration leads to more earnings management. Fan and Wong (2002) find that concentrated ownership of firms in East Asian countries is associated with lower value relevance. Taken together this evidence suggests that concentrated ownership leads to poorer earnings quality. Several studies on Chinese SOEs document that state ownership is associated with earnings management in the form of tunneling (Aharony et al., 2010; Chen and Yuan, 2004; and Liu and Lu, 2002). However, there is also evidence that state-owned firms in China have lower levels of abnormal accruals than non-state-owned firms (Ding et al., 2007). The elusive evidence in existing research suggests that a better understanding of the impact of state ownership on the earnings quality in China is required.

Ownership structure undoubtedly plays a very critical role. Inevitably, corporate earnings quality is affected by the controlling shareholders, because controlling shareholders can take advantage of their privileged position to significantly influence and control the accounting earnings. From the motivation perspective, the controlling shareholders will seek their own private benefits by 'Tunneling' to transfer corporate resources and in essence impact on the earnings quality (Gilson and Gordon, 2003; Liu and Lu, 2003; Dyck and Zingales, 2004; Haw, 2004; Kim, 2005 and Liu and Lu, 2007). As argued by Liu and Lu (2002), tunnelling via transfer pricing manipulation is believed to be more prominent in emerging markets where corporate governance mechanisms are inefficient. Manipulating accounting accruals will shift profits from one fiscal year to another; however, manipulating the transfer prices of

related-party transactions is permanent earnings manipulation conducted during a year will not affect the profits of future years (Lo et al., 2007; 2010).

Earnings quality will be influenced by many factors. Prior literature documents that a country's institutional factors, such as its legal/judicial system, dispersed vs. concentrated ownership, political connections, investor protections, and political economy, may create financial reporting incentives (Ball et al., 2000; Fan and Wong, 2002; Ball et al., 2003; Leuz et al., 2003; Bhattacharya et al., 2003; Bushman et al., 2004; Bushman and Piotroski, 2006; Burgstahler et al., 2006; Leuz and Oberholzer-Gee, 2006; Chaney et al., 2011; Srinidhi et al., 2014; Guedhami et al., 2014). Firms in countries with stronger investor protection have been documented to report less smooth earnings and earnings with greater accruals quality and predictability power. For example, Leuz et al. (2003) find that earnings smoothing is less pronounced in common law countries; the IAS are based on a conceptual framework similar to those of common law countries. China is under the civil law jurisdiction (*Corporate Governance in Asia, OECD, 2014*). Ewert and Wagenhofer (2012) present that tightening accounting standards will increase the ERC, which is also an important attribute of earnings quality. Gaio (2010) provides evidence that firm characteristics have more incremental explanatory power for accounting-based earnings attributes worldwide. For the market-based earnings quality measures, he acquires two interesting findings. Firstly, he observes that the adjusted  $R^2$  are on average much lower than those of the accounting-based measures. Secondly, contrary to the accounting-based measures, the adjusted values of  $R^2$  of considering the entire unobserved country heterogeneity is slightly higher than the adjusted  $R^2$  of considering firm characteristics alone, which implies that the country environment is as important as firm characteristics in explaining the variation in market-based earnings attributes. In a financial reporting context, Ball et al. (2000; 2003) provide that timeliness and conditional conservatism vary with legal origin (a proxy for political influences on financial reporting).

Regarding timely loss recognition, higher-quality earnings are expected to exhibit a higher frequency of large losses. This is consistent with Ball et al. (2000), Lang et al. (2003), Leuz, et al. (2003), Ball and Shivakumar (2005, 2006), and Lang et al. (2006), who suggest that one characteristic of higher quality earnings is that large losses are recognized as they occur rather than being deferred to future periods. This characteristic is closely related to earnings smoothing in that if earnings are smoothed, large losses should be relatively rare. If higher

quality accounting is predicted to generate a higher frequency of larger losses, the opposite could be true. Therefore, a higher frequency of large losses could be indicative of ‘big bath’ earnings management. Ball et al. (2008) using the  $R^2$  and  $b_1$  coefficient estimate from the Basu (1997) reverse regression, find that loss recognition is timelier for firms in countries with greater prominence of debt markets relative to equity markets. Ball et al. (2003) also find that East Asian countries except China, which share a common law origin but are asserted to have lower equity capital markets incentives, do not have more timely loss recognition than code law countries<sup>39</sup>.

The higher level of accounting conservatism in SOEs compared to non-SOEs may be due to downward earnings management by the former to hide abnormal profits accruing from a government monopoly. In China, firms are more likely to report higher earnings because of the goals or planned objectives that government has set for them. Both SOEs and non-SOEs tend to report higher earnings, but the former are a little more conservative than the latter. Another issue is that the accounting practices of SOEs are more conservative than those of non-SOEs, perhaps because the former have less incentive to manage earnings to ‘fool’ the market. Chen et al. (2008) find that in China, the accounting reports of privately owned firms are more conservative than those of SOEs, indicating that incentives matter. Argued by Basu (1997), conservative accounting recognizes bad news in earnings more quickly than good news; thus it leads to lower persistence of negative earnings changes.

Referring to value relevance, prior empirical research suggests that higher quality earnings are more value relevant (Lang et al., 2003; Leuz et al., 2003; and Lang et al., 2006). It indicates that firms with higher quality accounting are hypothesized to have a higher association between stock prices and reported earnings because higher quality earnings reflect a firm’s underlying performance (Barth, Beaver, and Landsman, 2001). Ewert and Wagenhofer (2005) document that accounting standards could constrain opportunistic managerial discretion and result in accounting earnings that have higher value relevance. Maines and Wahlen (2006, p.417) summarize value-relevance studies are joint tests of: (1) the capital markets’ perception of relevance of a specific piece of accounting information for the future cash flows of the firm; (2) the capital market’s perception of the reliability of that accounting information; and (3) market efficiency.

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<sup>39</sup> In code-law countries, such as Germany and China, the stock markets are less active and have relatively low litigation rates (Maijoor and Vanstraelen 2006).

Some studies examine the value relevance of accounting numbers reported under IFRS and Chinese GAAP<sup>40</sup>. For example, Bao and Chow (1999), Sami and Zhou (2004), and Liu and Liu (2007) find that earnings and book values of shareholders' equity reported under IFRS are generally more value-relevant than those reported under Chinese GAAP. Using a sample of firms from 21 countries that converted to IFRS during 1994-2003, Barth et al. (2008) compare several accounting quality metrics, including earnings management, timely loss recognition, and value relevance, before and after IFRS adoption. They find that accounting quality significantly enhanced after the adoption of IFRS in those countries. Hung and Subramanyam (2007) document that firms applying IFRS provide timelier information and have less earnings persistence because IFRS emphasizes on fair values and is more likely to incorporate the effects of economic events in the financial statements. However, through an international study across 51 countries including China, Daske et al. (2008) show that IFRS simply has impact on those countries where there is high transparency and strong legal enforcement. Given the consensus that China has weak investor protection and weak legal enforcement, its mandatory IFRS adoption is not expected to have an immediate and systematic impact on listed firms (Chen and Cheng, 2007). In addition, through investigating the effects of convergence with IFRS on the timeliness of earnings recognition, Wu et al. (2014) conclude that the timeliness of earnings recognition reported under Chinese GAAP worsened after a series of harmonization and convergence with IFRS in China. Their findings imply that the convergence with IFRS in emerging capital markets may not necessarily improve the accounting quality, consistently with He et al.'s results (2009).

Turning finally to Earnings Response Coefficient, previous studies provide the evidence that there is a significantly negative relationship between ownership and the earnings response coefficient. It indicates that the higher the dominant shareholder's ownership stake is, the less informative earnings becomes. When earnings are more value relevant, stronger investor response will be expected (Ronen and Yaari, 2008). The relationship between stock return and earnings has been examined since the publication of Ball and Brown (1968). Hayn (1995) finds a larger earnings response coefficient (ERC) for profits than for losses. Early research by Kormendi and Lipe (1987), Collins and Kothari (1989), and Easton and Zmijewski (1989) provide evidence that more persistent earnings have a stronger ERC.

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<sup>40</sup> Chinese companies prepared their financial statements in accordance with both IFRS and Chinese GAAP if they issued both A- and B- shares before 2007.

Referring to the correlation between the earnings quality attributes, empirical tests generally confirm that less reliable accruals lead to lower earnings persistence. Some studies find that conservatism reduces earnings persistence and predictability, facilitates earnings management, reduces analyst forecast accuracy, and may decrease the value relevance of earnings (e.g., Basu, 1997; Ball et al., 2008; Dichev and Tang, 2008; and Chen et al. (2014). These findings indicate that accounting conservatism has more negative effects on earnings quality. Ball et al. (2008) show that the timelier recognition of losses is often associated with a conservative accounting system. Hayn (1995) finds a larger earnings response coefficient (ERC) for profits than for losses. Their tests are based on the implication that losses are less persistent than profits and thus are expected to be associated with a smaller earnings response coefficient. This suggestion is consistent with Feltham and Ohlson (1995) frameworks where the value of the firm is a function of the persistence of abnormal earnings. Early research by Kormendi and Lipe (1987), Collins and Kothari (1989), and Easton and Zmijewski (1989) provide evidence that more persistent earnings have a stronger stock price response. According to the survey conducted by Graham et al. (2005), their results imply the widely held managerial beliefs that earnings volatility is negatively related to earnings predictability. They find that the consideration of earnings volatility brings substantial improvements in the prediction of both short- and long- term earnings. Dichev and Tang (2009) consider that two main factors result in earnings volatility: (a) economic shocks and (b) problems in the accounting determination of income, and both of these factors reduce the predictability of earnings. Therefore, low-volatility earnings have much higher persistence compared with high-volatility earnings which incorporate extreme and transitory earnings. Dechow and Dichev (2002) argue that large magnitudes of estimation errors in accruals signal lower quality of earnings and lower predictability of earnings. Hence, the earnings are smoothed by the managers will provide a more predictable measure of firm performance.

Since the publication of Jones (1991), the empirical literature has examined extensively the manipulation of financial reporting and its impact on the time series of reported earnings as well as the stock price reaction to earnings announcements. The Jones model and its variations have been utilized for both valuation purposes and for testing different measures of ‘accounting quality’ (see Dechow et al., 2010). Yet, the theoretical literature lacks a dynamic theory of reporting bias and earnings quality to provide insights and guidance to the empirical research on this topic based on the Chinese stock market. Therefore, the aim of this research is to focus on the relationship between government (state) ownership and earnings quality

depending on the unique characteristic of ownership structure in China. It will contribute useful insights into how to improve the quality of reported earnings in China both from theoretical and empirical perspectives.

### **3.3.1. SOEs vs. Non-SOEs**

The influence of state (government) ownership on the quality of accounting numbers has been examined in limited contexts in prior literature. In China, state-owned and non-state-owned listed firms are subject to the same accounting standards but subject to different political interference and supportive policy. Non-state-owned listed firms are either owned by entrepreneurs and their families or by foreign joint ventures. Management incentives and pressures differ depending on the type of firm. Bushman et al. (2004) find that concentrated ownership and financial transparency are negatively related, where concentrated ownership is a composite measure constructed using institutional ownership, blockholders, and average holdings per shareholder. Ajinkya et al. (2005) consistently discover a negative relation between concentrated institutional ownership and information transparency, as measured by the frequency of voluntary earnings forecasts. The interpretation for the results is that state-owned firms' suppress information transparency (because of expropriation activities) or do not require information transparency disclosure and have a preference for maintaining an information advantage over other investors. Several studies on Chinese SOEs document that state ownership is associated with earnings management in the form of tunneling (Aharony et al., 2010; Chen and Yuan, 2004; and Liu and Lu, 2002). However, there is also evidence that state-owned firms in China have lower levels of abnormal accruals than non-state-owned firms (Ding et al., 2007). Yuan et al. (2007) provide evidence of greater earnings management among Chinese state-controlled listed firms. They interpret this as evidence of a greater entrenchment effect rather than incentive alignment effect from the large shareholders of state-controlled firms. The elusive evidence in existing research suggests that a better understanding of the impact of state ownership on the earnings quality in China is required.

Research on the timeliness of reported earnings can be traced back to the 1968 seminal paper by Ball and Brown, where they describe accounting income numbers in terms of 'relevance' and 'timeliness'. Timely disclosure can reduce the magnitude of periodic earnings surprises, and hence reduces stock price volatility. The relationship between ownership type and conservatism is examined by Ball and Shivakumar (2005). Ball et al. (2003) suggest that

management incentives significantly influence the extent of accounting conservatism. Lim et al. (2014) examine how corporate ownership relates to the timeliness of earnings. The commonly accepted view is that government-owned firms adopt a more opaque information environment in order to hide their inefficiency (Shleifer and Vishny, 1997). Gul et al. (2010) state that Chinese-listed firms with government as the largest shareholder have less firm-specific information incorporated into their stock price, hence the timeliness of earnings of government-owned firms is lower. On the contrary, Cheng and Courtenay (2006) discover that government-owned firms in Singapore are related to greater transparency, in line with the government's support for better disclosure policies. Xia and Zhu (2009) find that political concerns and pressures among state-owned firm (SOEs) are more influential than those among non-state-owned firms (Non-SOEs), which lead to more conservative accounting in SOEs. In addition, they find that among the determinants of conservatism in China, debt is the most important, followed by ownership; the Board of directors has little influence.

Liu et al. (2014) exhibit Chinese state-owned listed firms have lower quality of earnings. Particularly, state-owned firms have more earnings smoothing, more frequently managed earnings toward target, have significantly higher discretionary current accruals, less frequent timely recognition of losses, and less value relevance, relative to non-state-owned firms. They conclude that the Chinese government, through its controlling ownership of state-owned firms, creates incentives and regulatory backing for self-serving purposes that negatively influence these listed firms' financial reporting. Another significant difference between SOEs and non-SOEs is that management in the former must deal with greater political pressure and more constraints. However, managers in non-SOEs face fewer political and legal restrictions than do those in SOEs, and they can handle many problems through unofficial channels or illegal means, which managers in SOEs dare not and cannot do. It appears that in non-SOEs, managers are well monitored by principals, namely, entrepreneurs, and have incentives to improve corporate governance and maximize firm value. Corporate governance seems to be work better for non-SOEs than for SOEs.

On the other hand, Ding et al. (2007) show that privately-owned listed companies tend to increase their accounting earnings more than state-owned listed companies in China. To obtain external financing, both SOEs and non-SOEs have incentives to manipulate accounting information. However, the former are affiliated with the government and their objectives are more diverse, which makes them less eager to pursue opportunistic benefits

through manipulation compared to the latter. Non-SOEs face more financing constraints than SOEs, and conservative accounting may lead to less profitable accounting earnings, which will result in the further restriction of external financing, both debt and equity. Therefore, the incentive for non-SOEs to pursue maximum profits will offset the incentive to practice conservative accounting. Unlike Non-SOEs, most local and central SOEs have the advantage to receive subsidies (or known as ‘bailout’) from the government, when they have financial problems evidenced by Wang et al. (2008). The Chinese government has such an incentive to provide this kind of bailout because the large-scale financial distress in SOEs might lead to civil unrest. Thus, there is little pressure for most SOEs to meet the profitability requirement and to face the delisting risk. Further investigation by Wang and Yung (2011) suggests that the protection of SOEs by Chinese government might have played an important role in mitigating the pressure on managers to manipulate firm-specific information. They find that the divergence in earnings quality between state-owned and privately-owned firms becomes less distinct as the economy becomes more and more market driven.

### **3.3.2. Proxies for earnings quality**

Dechow et al. (2010) review various proxies of ‘earnings quality’ in academic literature and classify them into three broad groups: (1) attributes of earnings (e.g. earnings persistence and accruals; earnings smoothness; asymmetric timeliness and timely loss recognition and benchmark beating); (2) investors’ response to earnings (such as earnings response coefficient (ERC) or the  $R^2$  from the earnings-returns model) and (3) external indicators of earnings misstatements (for instance, Accounting and Auditing Enforcement Releases (AAERs), financial restatements and the weakness of internal control).

Persistence is regarded as a proxy for earnings quality because of the maintained assumption that more persistent earnings are more decision useful for equity valuation (Dechow et al., 2010). Under accrual-based earnings system, earnings smooth random fluctuations in the timing of cash payments and receipts making earnings more informative about performance than cash flows. Smoothness is an outcome of an accrual-based system assumed to improve decision usefulness. The metrics including Earnings Response Coefficients (ERC) and the contemporaneous  $R^2$  between earnings and returns (popularized by Lev, 1989) are applied to capture important fundamental properties of financial reporting, such as relevance, timeliness and conservatism. Barth et al. (2001) consider the value relevance is one trait of reported



earnings utilized to evaluate information quality. Association studies measure the contemporaneous relation between financial statement variables and stock returns assuming market efficiency. Both earnings persistence and timely loss recognition have impact on the decision usefulness of earnings. Statement of Financial Accounting Concepts (SFAC) No. 2 defines conservatism as ‘a prudent reaction to uncertainty to try to ensure that uncertainties and risks inherent in business situations are adequately considered’ (FASB, 1980). Accounting scholars have identified two forms of conservatism: (1) conditional conservatism<sup>41</sup>, and (2) unconditional conservatism<sup>42</sup>. The primary difference is conditional conservatism depends on economic news events, while unconditional conservatism does not (Ruch and Taylor, 2015). Conservatism is regarded as one of the most fundamental features of accounting information (Basu, 1997; Watts, 2003a). The Basu’s (1997) metric is the most widely accepted proxy for conservatism. However, some researchers argue that conservatism biases accounting information and compromises neutrality to result in inefficient decision-making (Gigler et al., 2009; Guay and Verrecchia, 2006; FASB, 2010).

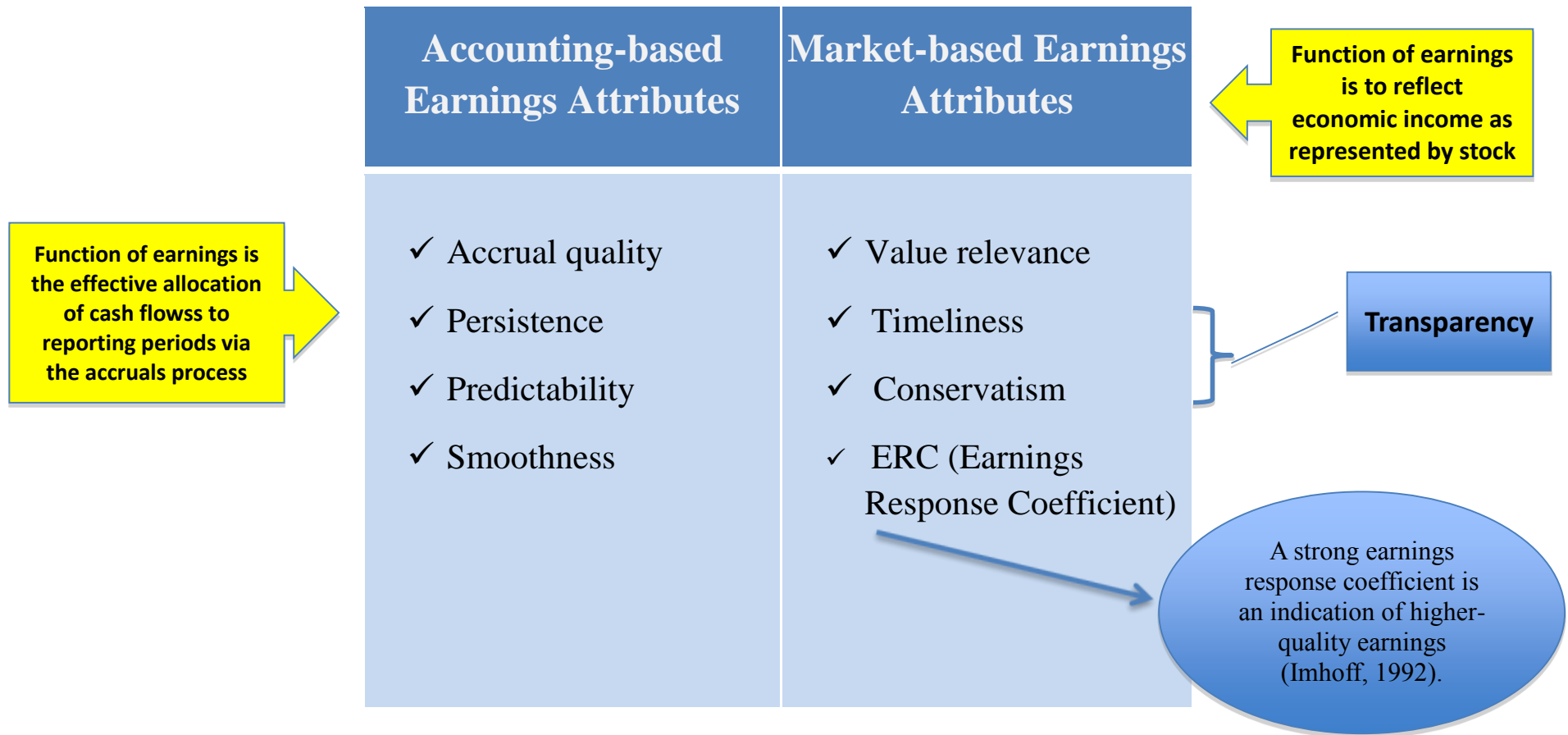
Dechow et al. (2010) argue that there is no single measure of earnings quality that is superior for all decision models. It is difficult to conclude that one or the other measure is a ‘better’ metric for earnings quality. However, an insight from Ewert and Wagenhofer (2011) provides that accounting-based measures seem to be inferior to market-based measures simply because they cannot capture the sophisticated inferences by rational investors on the price-relevant information incorporated in reported earnings. Therefore, to fully capture the earnings attributes, on the basis of Francis et al. (2004), this analysis classifies accrual quality, persistence, predictability, and smoothness as ‘accounting-based’ earnings attributes and to categorize value relevance, timeliness, and conservatism as ‘market-based’ earnings attributes. More importantly, Earnings Response Coefficient (ERC) is extended as a function of ‘market-based’ earnings quality via detecting earnings surprise according to Dechow et al.’s influential paper (2010). The return-based measures assume market is efficient. [Figure 3.1](#) and [Table 3.1](#) show the summary of proxies for earnings quality in existing literature.

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<sup>41</sup> Conditional conservatism, i.e., asymmetric income timeliness (Basu, 1997), occurs when negative economic news is recognized in accounting earnings in a timelier manner than positive economic news.

<sup>42</sup> Unconditional conservatism (Beaver and Ryan, 2005) also called news-independent conservatism (Chandra *et al.*, 2004), occurs through the consistent under-recognition of accounting net assets. Unlike conditional conservatism, unconditional conservatism does not depend on news events.

Figure 3.1 Proxies for Earnings Quality



Source: based on Dechow et al. (2010) and Francis et al. (2004)

Table 3.1 Proxies for Earnings Quality

Empirical proxy	Theory	Strengths and Weaknesses
$Earnings_{j,t} = \alpha + \beta_{1,j}Earnings_{t-1} + \varepsilon_{j,t}$ <p><math>\beta_{1,j}</math> measures persistence</p>	<p>Firms with more persistent earnings have a more 'sustainable' earnings</p>	<p>Pros: Fits well with a Graham and Dodd view of earnings as a summary metric of expected cash flows useful for equity valuation.</p> <p>Cons: Persistence depends both on the firm's fundamental performance as well as the accounting measurement system. Persistence may be achieved in the short run by engaging in earnings management</p>
<p>Residuals from accrual models (Error term from regressing accruals on their economic drivers)</p>	<p>Residuals from accrual models represent managers' discretion or estimation errors, both of which reduce decision usefulness</p>	<p>Pros: The measure tries to distinguish the managed or error component of accruals. The use of these models has become the accepted methodology in accounting to capture discretion</p> <p>Cons: Tests of the determinants/consequences of earnings management are joint tests of the theory and the abnormal accrual metric as a proxy for earnings management</p>
$Earnings\ Smoothness_{j,t} = \sigma(NIBE_{j,t})/\sigma(CFO_{j,t})$ <p>A lower ratio indicates more smoothing of the earnings stream relative to cash flows</p>	<p>Smoothing transitory cash flows can improve earnings persistence and earnings informativeness. However, smoothing permanent changes in cash flows will lead to a less timely and less informative earnings number</p>	<p>Pros: Income smoothing appears to be a common corporate practice in many countries around the world</p> <p>Cons: It is difficult to disentangle smoothness of reported earnings that reflects smoothness of the (1) fundamental earnings process; (2) accounting rules; and (3) intentional earnings manipulation</p>
<p>Timeliness</p> $EARN_{j,t} = \alpha_{0,j} + \alpha_{1,j}NEG_{j,t} + \beta_{1,j}RET_{j,t} + \beta_{2,j}NEG_{j,t}RET_{j,t} + \varepsilon_{j,t}$ <p>A higher <math>\beta_{1,j}</math> implies more timely recognition of the incurred losses in earnings.</p>	<p>There is a demand for TLR to combat management's natural optimism. TLR represents high quality earnings</p>	<p>Pros: assuming that returns appropriately reflect fundamental information</p> <p>Cons: because TLR results in lower persistence during bad news periods than during good news periods (Basu, 1997). Both persistence and TLR affect the decision usefulness of earnings. TLR is a return-based metric.</p>

<p><b>Benchmarks</b></p> <p>Kinks in earnings distribution  Changes in earnings distribution  Kinks in forecast error distribution  String of positive earnings increases</p>	<p>Unusual clustering in earnings distributions implies earnings management around targets.  Observations at or slightly above targets have low quality earnings</p>	<p>Pros: The measure is easy to calculate, the concept is intuitively appealing, and survey evidence suggests earnings management around targets</p> <p>Cons: In addition to statistical validity issues, evidence that kinks represent opportunistic earnings management is mixed, with credible alternative explanations including non-accounting issues. It is difficult to distinguish firms that are at kinks by chance versus those that have manipulated their way into the benchmark bins</p>
<p><b>ERCs</b></p> <p><math>Abnormal\ Return_{j,t}</math>  <math>= \alpha + b * (EarningsSurprise_{j,t}) + \varepsilon_{j,t}</math></p> <p>More informative components of earnings will have a higher b.</p> <p>More value relevant earnings will have a higher <math>R^2</math></p>	<p>Investors respond to information that has value implications. A higher correlation with value implies that Earnings better reflect fundamental performance.</p>	<p>Pros: This measure directly links earnings to decision usefulness, which is quality, albeit specifically in the context of equity valuation decisions.</p> <p>Cons: Assumes market efficiency. In addition, inferences are impaired by correlated omitted variables that affect investor reaction (including endogenously determined availability of other information), measurement error of unexpected earnings, and cross-sectional variation in return-generating processes</p>

(Source: based on Dechow et al. (2010). *Understanding earnings quality: A review of the proxies, their determinants and their consequences*, Exhibit 1)

### **3.4. Hypotheses Development**

There is a debate whether state-owned enterprises (SOEs) have more incentives to manipulate earnings than in non-state-owned enterprises (NSOEs). With the government's approval, non-negotiable shares can be transferred among different institutional shareholders, including state asset management bureaus, state holding companies, other SOEs, and legal persons. It still remains an empirical question whether government ownership deteriorates the earnings management problem in China. Following Berle and Means (1932), Jensen and Meckling (1976) and Roe (1994) indicate the agency problem stem from the conflict of interests between the shareholders and managers when ownership is diffuse such as in the USA and the UK. However, if ownership is highly concentrated such as the circumstances in East Asia, the agency problem stem from the conflicts between controlling shareholders and minority shareholders. One distinctive feature of Chinese listed companies is that ownership is highly concentrated, which determines the nature of the agency problem in Chinese corporations. Since ownership structure is regarded as the primary determinant of agency cost. It is more difficult to address the agency problem in state-owned companies than in privately-owned companies because there is an extra agency relationship in state-owned companies compared to privately-owned companies, as the controlling owners are themselves agents of the true owners: the state. Ding et al. (2007) show that companies with private ownership thus have a less serious agency problem. Several studies on Chinese SOEs document that state ownership is associated with earnings management in the form of tunneling (Aharony et al., 2010; Chen and Yuan, 2004; and Liu and Lu, 2002). Meanwhile, there is also evidence providing that state-owned firms in China have lower levels of abnormal accruals than non-state-owned firms (Ding et al., 2007). The elusive evidence in existing research suggests that a better understanding of the impact of state ownership on the earnings quality in China is required.

Ball et al. (2003) suggest that management incentives and pressures differ depending on the type of firm in China. To obtain external financing, both SOEs and non-SOEs have incentives to manipulate accounting information. However, the former are affiliated with the government and their objectives are more diverse, which makes them less eager to pursue opportunistic benefits through information manipulation compared with the latter. As discussed in Wang et al. (2008), most local and central SOEs have the advantage to receive subsidies (or known as 'bailout') from the government, when they have financial problems. The Chinese government has such an incentive to provide this kind of bailout because the

large-scale financial distress in SOEs might lead to civil unrest. Thus, there is little pressure for most SOEs to meet the profitability requirement and to face the delisting risk. In contrast, without the protection of government, Non-SOEs are under more pressure to hire reputable (large or non-local) auditors to mitigate the agency problem and provide an early warning of any possible financial distress. Hence, Non-SOEs face more financing constraints than SOEs. It appears that in non-SOEs, managers are well monitored by principals and have incentives to improve corporate governance and maximize firm value. Corporate governance seems to be work better for non-SOEs. However, managers in non-SOEs face fewer political and legal restrictions than do those in SOEs, and they can handle many problems through unofficial channels or illegal means, which managers in SOEs dare not and cannot do. In non-SOEs, compliance with accounting principles and regulations is determined by the integrity of the management or the ultimate shareholders. Because punishments for accounting standard violations are inadequate and other regulations are not strongly enforced, the cost of violation is low for entrepreneurs. This problem is more severe in countries with a weak legal and institutional environment, such as China. Therefore, the political cost for non-SOEs is much lower than that for SOEs. The political pressure on managers in SOEs is much greater as they are constrained by restrictive rules and regulations. Compliance with these directives is the most important consideration for SOE management, as their violation will lead to criticism of management by regulatory authorities and the public, damage the reputation of managers and in extreme cases, ruin the political career of managers.

Regarding timely loss recognition, higher-quality earnings are expected to exhibit a higher frequency of large losses (see Ball et al., 2000; Lang et al., 2003; Leuz et al., 2003; Ball and Shivakumar, 2005; 2006). Ball et al. (2008) using the  $R^2$  and  $b_1$  coefficient estimate from the Basu (1997) reverse regression, find that loss recognition is timelier for firms in countries with greater prominence of debt markets relative to equity markets. Ball et al. (2003) also find that East Asian countries except China, which share a common law origin but are asserted to have lower equity capital markets incentives, do not have more timely loss recognition than code law countries. The higher level of accounting conservatism in SOEs compared to non-SOEs may be due to downward earnings management by the former to hide abnormal profits accruing from a government monopoly. In China, firms are more likely to report higher earnings because of the goals or planned objectives that government has set for them. Both SOEs and non-SOEs tend to report higher earnings, but the former are a little more conservative than the latter, perhaps because the former have less incentive to manage

earnings to ‘fool’ the market. Nevertheless, Chen et al. (2008) find that in China, the accounting reports of privately owned firms are more conservative than those of SOEs.

Referring to value relevance, prior empirical research suggests that higher quality earnings are more value relevant (Lang et al., 2003; Leuz et al., 2003; Lang et al., 2006). Ewert and Wagenhofer (2005) document that accounting standards could constrain opportunistic managerial discretion and result in more value-relevant accounting earnings. Some studies examine the value relevance of accounting numbers reported under IFRS and Chinese GAAP and find that earnings and book values of shareholders’ equity reported under IFRS are generally more value-relevant than those reported under Chinese GAAP. Barth et al. (2008) and Hung and Subramanyam (2007) document that accounting quality significantly enhanced after the adoption of IFRS, for instance, providing timelier information. However, by an international study across 51 countries including China, Daske et al. (2008) show that IFRS simply has impact on those countries where there is high transparency and strong legal enforcement. Given the consensus that China has weak investor protection and weak legal enforcement, its mandatory IFRS adoption is not expected to have an immediate and systematic impact on listed firms (Chen and Cheng, 2007). In addition, through investigating the effects of convergence with IFRS on the timeliness of earnings recognition in the emerging Chinese market, Wu et al. (2014) conclude that the timeliness of earnings recognition reported under Chinese GAAP worsened after a series of harmonization and convergence with IFRS in China. When earnings are more value relevant, stronger investor response will be expected (Ronen and Yaari, 2008). Regarding Earnings Response Coefficient (ERC), previous studies provide the evidence that there is a significantly negative relationship between ownership and the ERC. It indicates that the higher the dominant shareholder’s ownership stake is, the less informative earnings becomes.

To sum up, according to financial distress theory, SOEs have the advantage to receive financial subsidies from government while NSOEs face more financing constraints. Therefore, incentives for NSOEs to manipulate earnings are stronger than in SOEs (Wang *et al.*, 2008). The agency theory, however, argues that state ownership in SOEs creates incentives and regulatory backing for self-serving purposes, thus motivating SOEs to manipulate accounting numbers (Liu *et al.*, 2014). The political cost hypothesis complements the agency theory and illustrates that SOEs’ managers manipulate accounting numbers in response to government intervention. Government ownership is probably associated with

higher earnings quality or lower earnings quality depending on how the listed firms view the nature of the government involvement. When governments aim to expropriate the benefits of firms, SOEs would report conservatively to disguise the profits. However, when governments impel firms to enhance performance via stringent government regulations, SOEs would report aggressively to meet specific thresholds.

Hence, this study hypothesizes that there is no difference in the quality of accounting information reported by state-owned vs. non-state-owned firms in China. The null hypothesis is expressed as:

***H<sub>0</sub>***: There is no difference in the quality of reported accounting information between state-owned listed and non-state-owned listed firms.

***H<sub>1</sub>***: State-owned listed firms have higher quality of reported accounting information than the Non-state-owned listed firms.

### **3.5. Empirical Modeling**

A number of attributes have been explained by previous research as the notion of earnings quality. Although Dechow et al. (2010) emphasize that they could not draw a conclusion about the single best measure of earnings quality for all decision models, in recent years there are two abnormal accruals proxies that have gained general acceptance in the academic literature. One is introduced by Dechow and Dichev (2002); another is developed by Francis et al. (2005). The former attempts to more explicitly map cash flows into the accruals generating process on the basis of Jones model (1991) which was originally designed to capture earnings management. The Dechow and Dichev model (2002) was also designed from the outset as a proxy for both intentional and unintentional factors affecting earnings quality. Francis et al. (2005) primarily split the variation in earnings quality into the portion resulting from the innate application of the accounting system and the portion attributable to management discretion. Dechow and Schrand (2004) document that earnings-based models outperform cash flows-based models for measuring firm value based on large sample size.

Earnings quality has multiple dimensions of attributes, such as accrual persistence, estimation errors in the accrual process, and the absence of earnings manipulation as well as the reporting conservatism, which have been frequently discussed in prior literature. Besides, more diverse measures of earnings quality are employed. For example, Dechow and Dichev (2002) introduce the strength of the correlation between current accruals and past, present,



and future cash flows. Penman and Zhang (2002) regard ‘sustainable earnings’ as high-quality earnings. Sloan (1996) and Richardson et al. (2005) deem the reliability of accruals captured by earnings persistence as one trait of earnings quality. Consistent with Lang et al. (2006) and Barth et al. (2008), this study considers the measures which are important to the informativeness of accounting data, i.e., earnings smoothing, tendency to manage earnings towards a target, timely loss recognition, and value relevance. Multiple measures are employed to mitigate the potential biases that may affect some of the measures. Following prior literature, accrual quality, persistence, predictability, and smoothness are classified as accounting-based earnings attributes, which consequently are simply measured by employing accounting information. According to Francis et al. (2004, p.969), ‘accounting-based earnings attributes derive from an implicit assumption that the function of earnings is the effective allocation of cash flows to reporting periods via the accruals process, while market-based attributes derive from an implicit assumption that the function of earnings is to reflect economic income as represented by stock returns.’

Ewert and Wagenhofer (2011) argue that accounting-based measures seem to be inferior to market-based measures simply because they cannot capture the sophisticated inferences by rational investors on the price-relevant information incorporated in reported earnings. Therefore, to fully capture the earnings attributes, on the basis of Francis et al. (2004), this analysis categorizes value relevance, timeliness, and conservatism as ‘market-based’ earnings attributes. More importantly, Earnings Response Coefficient (ERC) is extended as a function of ‘market-based’ earnings quality via detecting earnings surprise according to Dechow et al.’s influential paper (2010). The return-based measures assume market is efficient.

### **3.5.1. Accounting-Based Earnings Attributes**

#### **3.5.1.1 Accrual quality**

Dechow and Dichev (2002) test a measure of earnings quality via capturing the mapping of current accruals into last-period, current-period, and next-period cash flows, and Francis et al. (2004) demonstrate that this measure (which they term accrual quality) is associated with measures of the cost of debt and equity capital. Dechow et al. (2010) imply that the abnormal accruals generated from various accruals models as a measure of earnings quality tends to be positively correlated with the level of accruals. It means that a firm with extreme accruals tends to have extreme abnormal accruals. This is very important for interpreting results in the

literature. Large values of Accrual Quality indicate poor accrual quality, whereas small values indicate good accrual quality.

Total Accruals is defined as the difference between earnings and cash flows from operations.

| Accruals | is the absolute value of Total accruals.

$$\frac{TCA_{j,t}}{ASSETS_{j,t}} = \varphi_{0,j} + \varphi_{1,j} \frac{CFO_{j,t-1}}{ASSETS_{j,t}} + \varphi_{2,j} \frac{CFO_{j,t}}{ASSETS_{j,t}} + \varphi_{3,j} \frac{CFO_{j,t+1}}{ASSETS_{j,t}} + \varepsilon_{j,t}$$

(Equation 3.1)

Where

$TCA_{j,t}$  = firm j's total current accruals in year t, is defined as the difference between earnings and cash flows from operations

$ASSETS_{j,t}$  = firm j's total assets in year t

$AccrualQuality_{j,t} = \sigma(\varepsilon_{j,t})$  equals to the standard deviation of firm j's estimated residuals.

Abnormal accruals have been the focus of much empirical research in the accounting area. It has been used as a proxy for earnings quality to test predictions in almost all of the determinants and consequences categories. One disadvantage of this model is that it cannot be used to identify distortions induced by long-term accruals, such as impairments of PPE and goodwill, which are likely to reflect earnings management or accounting distortions.

### 3.5.1.2 Earnings Persistence

It is assumed that firms with more persistent earnings have more sustainable earnings and more persistent earnings will yield more decision useful inputs to equity valuation models. As a part of earnings, accruals are the most studied determinant of persistence. Dechow et al. (2010) show that high accrual firms are more likely to have high 'discretionary' accruals, tend to have less persistent earnings. Persistence and variability of earnings are accepted widely as indicators of earnings quality (Dechow, Sloan, and Sweeny, 1995; Schipper and Vincent, 2003). Persistence detects earnings sustainability; hence, persistent earnings indicate recurring earnings (e.g., Penman and Zhang 2002; Revsine et al. 2002, 245; Richardson 2003). Recurring earnings are a desirable element for the analysts to predict the companies' future earnings.

Based on previous studies (e.g., Lev, 1983; Ali and Zarowin, 1992; Francis et al., 2004), this study measures earnings persistence as the slope coefficient from auto-regression of current earnings on lagged earnings (i.e., using an AR1 model with drift of annual earnings), rather than a higher order specification suggested by Finger (1994) and Baginskie et al. (1999). This measurement is used as this research expects to estimate firm-specific persistence measures for a broad sample of firms over rolling five-year windows<sup>43</sup>. Using higher-order specifications increases the number of parameters to be estimated and, therefore, increases the length of the time-series needed for the estimation; in turn, it restricts the sample to firms with the necessary data.

$$Earnings_{j,t} = \alpha + \beta_{1,j}Earnings_{t-1} + \varepsilon_{j,t}$$

*(Equation 3.2)*

For each firm-year, *Equation 3.2* is estimated by using maximum likelihood estimation and rolling five-year windows. This procedure produces firm- and year-specific estimates of slope coefficient  $\beta_{1,j}$ , which capture the persistence of earnings. Values of  $\beta_{1,j}$  close to 1 imply highly persistent earnings, while values of  $\beta_{1,j}$  close to 0 imply highly transitory earnings. In order to conform this variable to our ordering of attributes, this study employs the negative of the AR1 parameter, Persistence =  $-\beta_{1,j}$ , so that larger (smaller) values of persistence correspond to less (more) persistent earnings.

The lower persistence of the accrual component does not imply that accruals are not useful. The outcome simply informs us that when earnings are composed predominantly of accruals, they will be less persistent than when earnings are composed predominantly of cash flows. Researchers have clarified that earnings produce smaller forecast errors than cash flows in valuation models; that earnings are more strongly associated with stock returns than are cash flows; that earnings are more persistent than cash flows, and that earnings are less volatile than cash flows (Dechow et al., 2010).

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<sup>43</sup> A rolling analysis of a time series model is often used to assess the model's stability over time. When analysing financial time series data using a statistical model, a key assumption is that the parameters of the model are constant over time. However, the economic environment often changes considerably, and it may not be reasonable to assume that a model's parameters are constant. A common technique to assess the constancy of a model's parameters is to compute parameter estimates over a rolling window of a fixed size through the sample. If the parameters are truly constant over the entire sample, then the estimates over the rolling windows should not be too different. If the parameters change at some point during the sample, then the rolling estimates should capture this instability (Zivot, E. and Wang, J., 2006, *Modelling Financial Time Series with S-PLUS*, Springer).

As stated in Collins and Kothari (1989), a key question that remains is whether time series persistence estimates fully and accurately capture economic growth opportunities. It is deemed as problematic in the existing literature for at least two reasons. Firstly, time series analysis cannot distinguish correlation in successive earnings numbers caused by mere expansion (i.e., earnings reinvestment through time or increases in external financing) versus economic growth. Secondly, ARIMA models typically assume parameter stability. Hence, any trend term that embodies earnings expansion and/or growth is constrained to be a constant. This is a limiting assumption, particularly when estimates are based on annual data for a 20-30-year time span (see Kormendi and Lipe, 1987). It implies that the persistence estimates from time series models are deficient in accurately reflecting current growth opportunities.

### **3.5.1.3 Earnings Predictability**

Following Lipe (1990), earnings predictability is the ability of earnings to predict itself. Predictability is an element of relevance in FASB's Conceptual Framework, and is therefore a desirable earnings attribute from the perspective of standard setters. Based on Francis et al. (2004) and Lipe (1990), the square root of the estimation error variance from Equation 3.2 (the firm- and year-specific AR1 model) is adopted to measure Earnings Predictability  $=\sqrt{\sigma^2(\varepsilon)}$ . Large (small) values of Predictability imply less (more) predictable earnings.

### **3.5.1.4 Earnings Smoothness**

Dechow et al. (2010) deem 'smoothness' an outcome of an accrual-based system assumed to improve decision usefulness; it is not the ultimate goal of the measurement system. The assessment of smoothness as a measure of earnings quality is the impact of a firm's accounting choices (see Lambert, 1984; Demski, 1998; and Kirschenheiter and Melumad, 2002). Earnings smoothness is a desirable earnings attribute. Managers generally use their private information about future income to smooth out earnings volatility and thereby achieve a more favorable reported earnings number. Smoothness is typically seen as a desirable attribute of earnings. Financial analysts and investors regard volatility of earnings as undesirable and indicative of low quality of earnings. Smoothness is a natural result of accrual accounting. This study follows the definition of smoothness by Francis et al. (2004) as the ratio of firm *i*'s standard deviation of net income before extraordinary items scaled by total assets, to its standard deviation of cash flows from operations scaled by total assets.

$$\text{Earnings Smoothness}_{j,t} = \sigma(NIBE_{j,t})/\sigma(CFO_{j,t})$$

*(Equation 3.3)*

Where *CFO* is cash flows from operations (measured as income from continuing operations less total accruals, where total accruals equal total current accruals minus the depreciation and amortization expense). Larger values of Smoothness indicate less earnings smoothness. Previous studies predicated that losses are less persistent than profits because companies are more likely to abandon or restructure operations which generate losses. Defined by Basu (1997), conservative accounting recognizes bad news in earnings more quickly than good news; it leads to lower persistence of negative earnings changes.

### **3.5.2. Return-Based Earnings Attributes**

Beaver et al. (1980) argue that prices and earnings can be characterized as joint signals from a larger set of publicly available information regarding the economic state of a firm. Ball et al. (2009) find that the common factors of earnings and returns are highly correlated and interpret this as evidence that earnings and returns are jointly determined. Earnings Response Coefficients (ERC) and the contemporaneous  $R^2$  between earnings and returns (popularized by Lev, 1989) are applied to capture important fundamental properties of financial reporting. Association studies measure the contemporaneous relation between financial statement variables and stock returns assuming market efficiency.

Generally speaking, the returns/earnings relation is investigated by using either an ‘events’ study<sup>44</sup> or an ‘association’ study method (Collins and Kothari, 1989). In essence, the ‘event’ study focuses on whether earnings announcements convey information about future cash flows. On the other hand, in an association study, returns over relatively long periods (fiscal quarters or years) are regressed on unexpected earnings or other performance measures such as cash flows (e.g. Rayburn, 1986) or replacement cost earnings (see Beaver, Griffin, and Landsman, 1982). Association studies assume that market agents learn much about earnings

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<sup>44</sup> The event studies infer whether the earnings announcement, per se, causes investors to revise their cash flows expectations as revealed by security price changes measured over a short time period (typically, 2-3 days) around the earnings announcement. Examples include Foster (1977), Hagerman, Zmijewski, and Shah (1984), and Wilson (1986, 1987). The justification for using shorter windows is that they reduce the effects of confounding information. These studies seek evidence concerning the market’s response to the actual release of earnings data.

and valuation-relevant events from non-accounting information throughout these long periods. Hence, association studies concentrate on examining whether the earnings determination process captures the valuation relevant events in a meaningful and timely manner.

The analysis of Collins and Kothari (1989), argues that association studies that use a holding period corresponding to a firm's fiscal period (or between earnings announcement dates) understate the earnings/returns association. Holding periods with a longer time horizon can enhance the earnings/returns association relative to the conventional twelve-month holding periods, particularly for larger firms. Prior literature documents that the association is maximized when returns are measured over 15 months. Varying the return window will ensure the unexpected earnings proxy matching up closely with the true, but unobservable, market earnings expectation. It will ensure the estimated response coefficient fully captures the market's valuation of unexpected earnings. Different return intervals will give the opportunity to assess how they affect the earnings/returns association as measured by adjusted  $R^2$  across firm size. Therefore, this study attempts to use a holding period that ranges from 12 to 18 months.

Major accounting standard setting bodies such as the Financial Accounting Standards Board (FASB) and the International Accounting Standards Committee (IASB) have adopted this investor oriented information usefulness perspective and specifically stated that the primary purpose of accounting is to meet the needs of capital markets (FASB, 1978; IASB, 1994). Consequently, it is not surprising that an important objective of the Chinese accounting reform is to improve the usefulness of financial reporting in the stock market (Winkle et al., 1994; Xiang, 1998; Chen et al., 1999). Since Ball and Brown (1968), accounting researchers have produced numerous studies documenting the association between accounting earnings and stock returns. Differences in country characteristics are an important element of returns. Drummen and Zimmerman (1992) and Eftekhari and Satchell (1999) all discover that country factors predominated over other factors (e.g. world factors and industry trends) in the determination of stock returns. The current study extends this line of inquiry into the emerging Chinese stock market. Because of the unique institutional setting of the Chinese market, the results of this study have implications for both theory and practice in China and beyond.

### 3.5.2.1. Value relevance

Value-relevance studies generally examine the strength of association between accounting numbers and share prices/stock returns to infer whether capital market participants consider accounting information to be sufficiently relevant and reliable to make effective investment decisions. These studies rely on share prices/stock returns as proxies for expected future cash flows providing indirect evidence on accounting information reliability. Maines and Wahlen (2006, p.417) summarize value-relevance studies are joint tests of: (1) the capital markets' perception of relevance of a specific piece of accounting information for the future cash flows of the firm; (2) the capital market's perception of the reliability of that accounting information; and (3) market efficiency.

Higher values of relevance imply lower value relevant earnings and therefore poorer earnings quality. The value relevance of earnings (that is, the ability of earnings to explain variations in returns or prices) is a desirable attribute as it is usually seen as a direct measure of the decision usefulness of earnings. This construct is often measured as the ability of earnings to explain variation in returns, where greater explanatory power is viewed as desirable. One stream of this research interprets value relevance as a direct measure of decision usefulness (e.g., Joos and Lang 1994; Collins et al. 1997; Francis and Schipper 1999; Lev and Zarowin 1999). This interpretation rests on the view that value relevance measures capture combined *relevance and reliability*, two significant concepts in the FASB's Conceptual Framework. The measure of value relevance is the explanatory power of earnings level and change for returns as follows.

$$RET_{j,t} = \beta_{0,j} + \beta_{1,j}EARN_{j,t} + \beta_{2,j}\Delta EARN_{j,t} + \varepsilon_{j,t} \quad (\text{Equation 3.4})$$

Where:

$RET_{j,t}$  = firm j's 13-month return, 15-month return and 18-month return ending one month, three months and six months respectively after the end of fiscal year t;  $EARN_{j,t}$  = firm j's income before extraordinary items in year t (NIBE), scaled by market value at the end of year t-1; and  $\Delta EARN_{j,t}$  = change in firm j's NIBE in year t, scaled by market value at the end of year t-1.

Value relevance is estimated for each firm over rolling five-year windows. To conform this variable to our ordering scheme, this study takes the negative of the adjusted  $R^2$  from Equation 3.4,  $\text{Relevance} = -R^2_{j,t}$  (Equation 3.4). Large (small) values of Relevance imply less (more) value relevant earnings.

### 3.5.2.2. Timeliness and Conservatism

Higher values of timeliness imply less timely earnings and poorer earnings quality. Earnings that reflect the information incorporated in stock returns more quickly are seen by investors as being of higher quality. Earnings conservatism is measured in terms of the asymmetric incorporation into earnings of economic losses (measured as negative stock returns) and economic gains (measured as positive stock returns). Conservative accounting is expected to reveal information that managers might have incentives to hide otherwise (Martínez-Jerez, 2008), so investors usually see conservatism as a desirable attribute of earnings. Conservatism is also considered a desirable attribute for monitoring and contractual purposes. The degree of reporting conservatism is another attribute of financial reporting. This measure has been employed by a number of studies (e.g., Basu 1997; Ball and Shivakumar, 2005).

$$EARN_{j,t} = \alpha_{0,j} + \alpha_{1,j}NEG_{j,t} + \beta_{1,j}RET_{j,t} + \beta_{2,j}NEG_{j,t}RET_{j,t} + \varepsilon_{j,t}$$

*(Equation 3.5)*

Where  $NEG_{j,t} = 1$  if  $RET_{j,t} < 0$  (indicating economic losses, i.e. bad news) and 0 otherwise (indicating economic gains, i.e. good news); all other variables are as previously defined. Ball et al. (2008) and Chan (2014) indicate that the coefficient  $\beta_{1,j}$  on stock return measures the timeliness of gain recognition (timely gain recognition coefficient); the coefficient  $\beta_{2,j}$  on the product of stock return and the return dummy measures the incremental timeliness of loss recognition (incrementally timely loss recognition coefficient); timely loss recognition is measured by  $(\beta_{1,j} + \beta_{2,j})$  and asymmetrically timely loss recognition implies  $\beta_{2,j} > 0$ . Overall income timeliness, for both gains and losses combined, is measured by the adjusted  $R^2$  of the regression. Although the Basu (1997) model has been criticized in several studies (e.g. Dietrich et al., 2007; Givoly et al., 2007), the asymmetric timeliness of earnings is the most direct indicator of earnings conservatism and Basu-based-conservatism measure still best captures conditional conservatism and has been widely used in empirical studies (Ball and Shivakumar, 2005; Ball et al., 2008; Chung and Wynn, 2008; Dechow et al., 2010; Ettredge et al., 2012; Francis and Wang, 2008; and García Lara et al., 2009 and Ruddock et al., 2006).



*Equation 3.5* is also estimated on a firm- and year-specific basis, using rolling five-year windows. Following Basu (1997) and Ball et al. (2008) and Bushman et al. (2004) and Dechow et al. (2010), the measure of Timeliness is based on the explanatory power of *Equation 3.5*; similar to Relevance, the negative of the adjusted  $R^2$  is derived from *Equation 3.5*,  $\text{Timeliness} = -R^2_{j,t}$  (*Equation 3.5*). Following Basu (1997), Pope and Walker (1999), Givoly and Hayn (2000) and Ball et al. (2008) and Chan (2014), the measure of Conservatism in this research is the negative of the ratio of the coefficient on bad news to the coefficient on good news,  $\text{Conservatism} = -(\beta_{1,j} + \beta_{2,j})/\beta_{1,j}$ . Larger values of Timeliness and Conservatism imply less timely and less conservative earnings, respectively.

### 3.5.2.3. Earnings Response Coefficient (ERC)

A measure of investor responsiveness to earnings mainly includes studies that examine an earnings response coefficient (ERC). Extant studies explicitly state that investor responsiveness to earnings is a straight-forward proxy for earnings quality (Holthausen and Verrecchia, 1988; Liu and Thoma, 2000). Academic accounting researchers have employed a return-based earnings response coefficient as a measure of earnings quality (e.g. Beaver, 1968; and Ball and Brown, 1967; 1968). Imhoff (1992) suggests that a strong earnings response coefficient is an indication of higher-quality earnings by using judgments obtained from security analysts who were members of the Financial Analysts Federation. The results of DeFond and Park (2001) are also consistent with the interpretation of the ERC as a measure of earnings quality. They conclude higher ERCs when abnormal accruals restrain the magnitude of earnings surprises and lower ERCs when abnormal accruals exaggerated the magnitude of earnings surprises.

In accounting research, there is a basic premise that earnings with more persistency and relevant value will have stronger ERCs. Some significant results on ERCs provide insights into earnings persistence. It is noteworthy that Liu and Thomas (2000) recognize the extent to which the ERC captures decision usefulness is influenced by the degree of heterogeneity in the correlation between unexpected earnings and earnings forecast revisions within the sample: this heterogeneity results in low values of the regression  $R^2$ . Therefore, sample specific characteristics, such as growth, that affect within- sample heterogeneity, are crucial. Consistent with the findings from Liu and Thomas (2000), Dechow et al. (2010) conclude that a correlation between ERCs and its availability indicates that the ERC can be viewed as a

reasonable proxy for earnings quality only when the availability of other information is homogeneous within the sample. Dechow et al. (2010) emphasize that ERC as a proxy for earnings informativeness potentially suffer from an omitted variable bias if the variable of interest is correlated with a firm's information environment.

ERC is defined as the estimated  $b$  from the firm-level regression of annual returns on earnings:

$$Abnormal\ Return_{j,t} = \alpha + b * (Earnings\ Surprise_{j,t}) + \epsilon_{j,t}$$

(Equation 3.6)

Where  $\alpha$  is the intercept

$b$  = firm  $j$ 's earnings response coefficient (ERC);

**Abnormal Return** = Stock abnormal return as the market-adjusted return

**Earnings Surprise $_{j,t}$**  = Firm-specific unexpected earnings, equals to firm  $j$ 's fiscal year-end reported earnings per share minus the consensus (median) analyst forecast EPS at the period of  $t$ , scaled by stock closing price at the end of period  $t-1$ ; or using a time series expectation of annual earnings to obtain Earnings Surprise;

$\epsilon_{j,t}$  is a disturbance term.

All earnings per share are adjusted for stock splits and stock dividends. More informative components of earnings will have a higher  $b$ , indicating that earnings surprise has greater valuation implication. Earnings Response Coefficient (ERC) measures the weight of earnings in price movements, which is regarded as a function of 'market-based' earnings quality via detecting earnings surprise. *Earnings Surprise $_{j,t}$*  (scaled by stock closing price at the end of period  $t-1$ ) is measured in two ways: (a) the deviation of actual earnings from a predicated amount based on a time-series model of earnings and (b) the deviation of actual earnings from the consensus (median) analyst forecast (analyst forecast error). The median analyst forecast is computed using each analyst's latest forecast before the earnings announcement. Collins and Kothari (1989) suppose that the ERC varies cross-sectionally with the holding period return interval and conclude that a conventional 12-month return period understates the earnings/returns association, particularly for larger firms. The association is maximized when returns are measured over 15 months. Hence, all further analysis is performed using returns measured over the 13-month, 15-month and 18-month intervals correspondently in ERC model for comparison (i.e. 1 month, 3 months and 6 months after the fiscal year end).

Kothari and Sloan (1992) indicate that the limitation of a time-series predicted earnings is that the market's expectation is based on a richer information set. Therefore, earnings surprise will be measured with error and the slope coefficient on earnings surprise will be biased towards zero. Because 'stock price adjustment to some factors reflected in annual earnings may have occurred in previous years'. This is supported by previous studies (e.g., Watts and Zimmerman, 1986). According to Collins and Kothari (1989), if firm size is a proxy for information environment differences, then different size firms will exhibit different ERCs on measuring  $EarningsSurprise_{j,t}$  over a fixed holding period for all firms. Many previous studies suggest a relationship between firm size and several earnings attributes but with mixed results. Some predict that firm size is negatively associated with earnings quality because larger firms would make income-decreasing accounting method choices in response to greater political and regulatory scrutiny (Jensen and Meckling, 1976; and Watts and Zimmerman, 1986). Therefore, this study controls firm size (natural logarithm of total assets) which may affect earnings quality in this analysis in *Equation 3.6*. Earnings Response Coefficient (ERC) measures the weight of earnings in price movements. When earnings are more value relevant, stronger investor response will be expected (Ronen and Yaari, 2008). The relationship between stock return and earnings has been examined since the publication of Ball and Brown (1968). A larger ERC indicates that a dollar of earnings surprise has greater valuation implications.

### 3.6. Sample Selection and Empirical Results

The sample is selected from listed A-share firms in China from 2004 to 2013. A firm is classified as an SOE if it is ultimately controlled by the government, including central government, local government at the provincial, municipal, and county level, and other governmental institutions. A firm is considered to be a non-SOE when its ultimate controlling shareholder is an individual or a non-state entity, including a town–village enterprise, foreign enterprise, or other non-state-controlled enterprise. The state ownership information is defined by CCER and CSMAR database.

The sample firms in this study are listed in the A-share stock market, which are required to report under Chinese GAAP.<sup>45</sup> B shares, H shares, overseas shares; firms that are dual-

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<sup>45</sup> A shares market is open to domestic investors. B shares market is open to foreign investors and is traded in foreign currencies. H shares are firms listed in the Hong Kong stock exchange. Firms listed as B shares

listed/cross-listed are excluded because they are subject to either different accounting standards or different listing regulations. This study focuses on the A shares market only because the small sample sizes in either B shares market or H shares market does not allow for a reasonably powerful test. Meanwhile, financial, insurance and banking firms are excluded from the samples because their accounting standards and earnings properties are different from the rest of firms and thus non-comparable. In order to keep the consistency and better examine the time effect on firm-specific earnings quality, the sample firms do not include the new entry and delisted firms between 2004 and 2013. It implies that each sample firm in our sample has ten consecutive years of observations. Hence, it is a strong-balanced panel data. The financial data are obtained from the China Stock Market and the Accounting Research (CSMAR) Database, for example, earnings forecasts and actual earnings obtained from CSMAR database, all per share data adjusted for splits and stock dividends using the CSMAR adjustment factors and stock price and return data collected from CSMAR monthly tape.

After eliminating missing values, a total of 9860 firm-year observations are collected between the fiscal year of 2004 and 2013. Following prior research (e.g., Lev 1983; Ali and Zarowin 1992; Francis et al., 2004), earnings persistence is evaluated as the slope coefficient estimate from an autoregressive model of order one (AR1 with drift)<sup>46</sup> for annual split-adjusted earnings per share (EPS). Augmented Dickey-Fuller test is employed for testing unit root and First Order Difference Transformation for Stationary Test, and 311 firm-specific observations with non-stationary earnings in terms of p value ( $p > 0.05$ ) have been removed. The final sample size for this study, except return/earnings model for ERC, is 675 firms which are listed in the A-shares market for ten consecutive years from 2004 to 2013. All the earnings attributes tested by this analysis, except ERC, are measured on a firm- and year-specific basis using rolling five-year windows. Regarding to the return/earnings model for ERC, there are only 626 firms in our sample. The time span ranges from 2008 to 2013, because there is insufficient data or missing information on analysts' forecast before 2008 in

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are required to report under international accounting standards. Firms listed as H shares are required to report under Hong Kong GAAP.

<sup>46</sup> We use an AR1 model (with drift) of annual earnings, rather than a higher order specification suggested by Finger (1994) and Baginski et al. (1999), because we wish to estimate firm-specific persistence measures for a broad sample of firms over rolling 5-year windows. In addition, Francis et al. (2004, p.980) point out that 'using higher-order specifications increases the number of parameters to be estimated and increases the length of the time-series needed for the estimation; in turn, this restricts the sample to firms with the necessary data.'

the CSMAR database. The securities analyst industry in China has a low starting point. For instance, until December 2002, Securities Analysts Committee was established in Beijing under Securities Association of China.

In China, state-owned listed firms and non-state-owned listed firms are subject to the same accounting standards but to differing government intervention. This allows us to examine the effects of institutional incentives on different types of firms while holding the accounting standards constant. Tables 3.2a and 3.2b describe the sample firm-year distributions by year and by industry respectively. Table 3.2a presents that the state-owned enterprises' (SOE) and non-state-owned enterprises' (Non-SOE) distribution between 2004 and 2013. SOEs accounts for 73.33% of the sample size, almost three time of the number of Non-SOEs (26.67%). Tables 3.2b shows the sample firms' distribution by industry according to Industry Classifying Guidelines of Listed Companies (2001) released by the CSRC. Manufacturing Industry has the largest number of firms (with 415 firms each year) while Conglomerates has the lowest number (with 27 firms each year). From the ownership nature of the ultimate controller, SOEs within each industry category is over 60% of the firm observations.

Table 3.3 presents descriptive statistics on firm-year characteristics by ownership type. As shown in Table 3.3, state-owned firms and non-state-owned firms are, on average, very close in firm size as measured by the log of market value. There is no significant difference between the two types of firms according to the market value variable. However, with respect to their total accruals, the state-own firms are much larger than the non-state owned firms. This is also evident on the earnings per share (EPS), which is 0.2573 for state-owned firms slightly lower than non-state-owned firms with the value as 0.2832. Regarding the abnormal return with three different return windows, only 15-month returns are positive for both SOE and Non-SOEs; and non-state-owned firms outperform state-owned firms. In summary, it appears that non-state-owned firms have higher market value, earnings per share, stock abnormal returns and operating cash flows than state-owned firms, but lower total accruals. The total accruals are negative for both SOEs and non-SOE in Table 3.3, but the figure in SOEs is approximately 150 times larger in size, indicating SOEs are more likely to manipulate down the earnings than non-SOEs, manifesting the government generally expropriates the benefits of SOEs, according to *Political Cost Hypothesis*. According to Givoly and Hayn (2000) and Sohn (2012), a consistent predominance of negative accruals of a firm over a long period is an indication of conservatism. The rationale behind using

negative accruals is that accounting conservatism uses the mechanism of accruals to defer the recognition of economic gains and accelerate the recognition of economic losses. Through such a process of delaying gains and accelerating losses, the level of accumulated accruals in a firm gradually becomes more negative (Givoly and Hayn, 2000). The higher level of accounting conservatism in SOEs compared to non-SOEs may be due to downward earnings management by the former to hide abnormal profits accruing from a government monopoly.

Table 3.2a Firm-year distribution by year

Year	Observation	State-owned	Percentage of total observation (%)	Non-state-owned	Percentage of total observation (%)
2004	675	495	73.33	180	26.67
2005	675	495	73.33	180	26.67
2006	675	495	73.33	180	26.67
2007	675	495	73.33	180	26.67
2008	675	495	73.33	180	26.67
2009	675	495	73.33	180	26.67
2010	675	495	73.33	180	26.67
2011	675	495	73.33	180	26.67
2012	675	495	73.33	180	26.67
2013	675	495	73.33	180	26.67
Total	6750	4950	73.33	1800	26.67

Table 3.2b Firm-year distribution by industry

Industry Code	Industry Name	Observations	SOEs	Percentage (%)	Non-SOEs	Percentage (%)
2	Utilities	710	490	69.01	220	30.99
3	Real Estate	830	510	61.45	320	38.55
4	Conglomerates	270	190	70.37	80	29.63
5	Manufacturing	4150	3080	74.22	1070	25.78
6	Trade	790	680	86.08	110	13.92
	Total	6750	4950	73.33	1800	26.67

Table 3.3 Descriptive statistics on firm-year characteristics by ownership type

	State-owned			Non-state-owned		
	Mean.	SD	Median	Mean.	SD	Median
Market Value	7310.512	13164.120	3963.398	7342.667	9859.695	4593.794
Total Accruals	-324.9972	3597.172	-52.6856	-1.9381	915.0891	-21.2980
EPS	0.2573	0.4962	0.2000	0.2832	0.4417	0.1890
Firm size	22.2064	0.8841	22.1004	22.2748	0.8847	22.2480
Abnormal Return_13	-0.0085	0.3608	-0.0256	0.0040	0.3906	-0.0088
Abnormal Return_15	0.0302	0.3647	0.0111	0.0458	0.4023	0.0278
Abnormal Return_18	-0.0223	0.3954	-0.0268	-0.0109	0.4307	-0.0132

\*Market Value is the market capitalization of the firm (in millions RMB).

\*Total Accruals is defined as net income minus operating cash flows (in millions RMB).

\*EPS is the annual earnings per share deflated by the price at the beginning of the period.

\*The abnormal return is defined as the market-adjusted return; Abnormal Return\_13 represents firm *j*'s market-adjusted 13-month return ending one month after the end of fiscal year *t*; Abnormal Return\_15 represents firm *j*'s market-adjusted 15-month return ending three months after the end of fiscal year *t*; Abnormal Return\_18 represents firm *j*'s market-adjusted 18-month return ending six months after the end of fiscal year *t*.

Tables 3.4 and Table 3.5 illustrate descriptive statistics on the earnings attributes (four accounting-based earnings attributes and three market-based earnings attributes measured on the basis of 13-month/15-month/18-month stock return) and other variables employed in this analysis. The values of each attribute are winsorized at the tails of 99 percent and 1 percent to avoid outlier concerns. Table 3.4 presents descriptive statistics on the variables used in our analyses. The mean (median) value of Accrual Quality is 1.2016 (0.6395). Compared with Francis et al.'s result (2004) which is 0.026 (0.019), it implies that the accrual quality in China is much worse than that in the USA. After removal of the outliers, consistent with Francis et al. (2004), this study captures earnings persistence as the negative value of slope coefficient estimate, i.e. Earnings Persistence =  $-\beta$ . Hence, larger (smaller) values of persistence correspond to less (more) persistent earnings. The mean (median) value obtained here is 0.3101 (0.3551). Contrasted with Francis's findings (2004) on earnings persistence, which correspondently is -0.482 (-0.520), the test results are larger standing for less persistent earnings in Chinese samples.

Based on Francis et al. (2004) and Lipe (1990), the square root of the estimation error variance from the abovementioned *Equation 3.2* is measured as Earnings Predictability  $=\sqrt{\sigma^2(\varepsilon)}$ . Here, the empirical results for earning predictability with the value of mean (median) 0.4009 (0.2180) show that the earnings from the large sample of Chinese listed companies are more predictable than the U.S. samples with mean (median) value of 0.876 and 0.536. This is because large values of predictability imply less favorable outcomes. Finally, for earnings smoothness test, which captures the variability of income relative to the variability of cash flows, Francis et al. (2004) obtain the mean (median) value of 0.640 (0.578). Leuz et al. (2003) report a mean smoothness measure of 0.765 (for all U.S. firm-year observations, 1990-1999) and Hunt et al. (2000) report descriptive data implying a mean ratio of income volatility to cash volatility of 0.51. However, based on this study's samples which are listed in the A-shares stock market firm- and year- observations for ten consecutive years, a mean value of smoothness measure is reported as 4.6992, larger than the US samples. Larger values of Smoothness indicate less earnings smoothness in China.

Referring to the market-based earnings attribute measures, which follow Francis et al., (2004) with one difference: one more return-based proxy, i.e. Earnings Response Coefficient (ERC), is extended as one dimension of Earnings Quality in the regression of abnormal stock returns on earnings surprise according to Liu and Thomas (2000) and Dechow (2010). Meanwhile, the stock price 1 months, 3 month and 6 month after the fiscal year end are utilized as alternative measures for stock return (that is firm j's 13-month, 15-month and 18-month return correspondently). In [table 3.4](#), Value Relevance (the negative of the adjusted  $R^2$  in a returns-earnings regression) has a mean (median) value of -0.6158 (-0.6717), -0.6271 (-0.6779) and -0.6260 (-0.6845) correspondently with the 13-months, 15-month and 18-month stock market return. Francis et al. (2004) define their  $RET_{j,t}$  as the firm j's 15-month return ending three months after the end of fiscal year t and present their mean (median) value of adjusted  $R^2$  as -0.423 (-0.416). Large (small) values of Relevance imply less (more) value relevant earnings. All the three groups of smaller value relevance of Chinese listed firms indicate that the earnings are more value relevant. The mean (median) values of Timeliness (the negative of the adjusted  $R^2$  in a reverse regression of earnings on returns) are -0.7641 (-0.8725), -0.7467 (-0.8596) and -0.7175 (-0.8317) respectively with 13-month, 15-month and 18-month stock return, close to Francis et al.'s results, and better than the US samples. With respect to Conservatism, the negative of the ratio of the coefficients on negative returns to the



coefficient on positive returns in a reverse regression of earnings on returns, our measure for conservatism derived from firm-specific regressions get a mean (median) value of -1.3308 (-1.3197), -1.3809 (-1.2707) and -1.2268 (-1.2059) correspondently based on the 13-months, 15-month and 18-month stock market return. These results are much smaller in magnitude than the value of -0.547 (-1.000) reported by Francis et al. (2004), suggesting that the Chinese listed sample firms' earnings are more conservative.

From the perspective of different stock return windows (13-month, 15-month and 18-month), for both the value relevance and conservatism of Chinese listed firms' reported earnings with 15-month stock return are better than other two return windows. It might be because 15-month abnormal returns are positive for both SOEs and Non-SOEs. It is consistent with Collins and Kothari's conclusion (1989), that a conventional 12-month return period understates the earnings/returns association, particularly for larger firms and the association is maximized when returns are measured over 15 months. Regarding the timeliness in China, it shows that its value for the 13-month return window is superior to others.

Kothari (1992) using firm-specific time-series price-earnings regressions over a one-year return interval estimates ERC with a mean of 2.61 and median of 2.00 via utilizing earnings scaled by stock closing price at  $t-1$ . Penman's (1990, table 2) estimate using annual returns/earnings data is 0.894, whereas Kormendi and Lipe (1987, table 1) report a median coefficient of 2.5. Ali and Zarowin (1992), who control for the effect of serial correlation in earnings, report a median earnings response coefficient of 1.59. Use of analysts' earnings forecasts as better proxies for the market's expectation yields coefficients of similar size (for instance, Easton and Zmijewski, 1989a, b; and Brown et al., 1987). Correspondently, ERC results (maximized) are based on the earnings surprise calculated on the basis of the consensus median analyst forecast with 13-month return interval with mean (median) value of 1.3638 (1.4025) (details see [Table 1.4 continued](#)). Earnings response coefficients reported in the literature, however, are considerably smaller than implied by the time-series predicted earnings. Collins and Kothari (1989) suppose that the ERC varies cross-sectionally with the holding period return interval and conclude that a conventional 12-month return period understates the earnings/returns association, particularly for larger firms. The association is maximized when returns are measured over 15 months. This is only applicable to our ERC results which are based on time-series predicted earnings. [Table 1.4 continued](#) shows that ERC\_p\_18 is maximized based on longer returns intervals with 18 months.

Table 3.4 Summary Statistics of Earnings Attributes

<b>Earnings Quality</b>	<b>Mean (Median)</b>	<b>SD (Variance)</b>	<b>Skewness (Kurtosis)</b>	<b>25% (75%)</b>	<b>Minimum (Maximum)</b>
Accrual Quality	1.2016 (0.6395)	1.3974 (1.9527)	1.9229 (5.9169)	0.2882 (1.4503)	0.1484 (5.5031)
Earnings Predictability	0.4009 (0.2180)	0.5713 (0.3263)	6.3383 (87.8000)	0.1067 (0.4826)	-0.0614 (12.8696)
Earnings Persistence	0.3101 (0.3551)	0.3978 (0.1583)	-0.6165 (2.7622)	0.0724 (0.6296)	-0.8009 (0.9854)
Earnings Smoothness	4.6992 (2.3785)	5.5452 (30.749)	1.9209 (5.8261)	1.1906 (5.5333)	0.5186 (21.623)
Value Relevance_13	-0.6158 (-0.6717)	0.2789 (0.0778)	0.4927 (2.1076)	-0.8514 (-0.4021)	-1.0000 (-0.0003)
Value Relevance_15	-0.6271 (-0.6779)	0.2774 (0.0769)	0.5327 (2.1739)	-0.8691 (-0.4225)	-1.0000 (-0.0009)
Value Relevance_18	-0.6260 (-0.6845)	0.2831 (0.0801)	0.5370 (2.1512)	-0.8725 (-0.4178)	-1.0000 (0.0000)
Conservatism_13	-1.3308 (-1.3197)	2.3824 (5.6756)	0.8927 (19.2839)	-1.8364 (-0.9348)	-12.4895 (12.1467)
Conservatism_15	-1.3809 (-1.2707)	2.5100 (6.3002)	-0.3992 (17.1128)	-1.8461 (-0.9289)	-14.1407 (11.0081)
Conservatism_18	-1.2268 (-1.2059)	2.4039 (5.7789)	1.2377 (18.0206)	-1.7470 (-0.8983)	-11.8583 (12.1377)
Timeliness_13	-0.7641 (-0.8725)	0.2631 (0.0692)	1.1051 (3.1321)	-0.9812 (-0.6121)	-1.0000 (0.0000)
Timeliness_15	-0.7467 (-0.8596)	0.2738 (0.0750)	1.0216 (2.8922)	-0.9772 (-0.5745)	-1.0000 (-0.0001)
Timeliness_18	-0.7175 (-0.8317)	0.2922 (0.0854)	0.8682 (2.4962)	-0.9724 (-0.5127)	-1.0000 (0.0001)

Table 1.4 Summary Statistics of Earnings Attributes (Continued)

<b>Earnings Quality</b>	<b>Mean (Median)</b>	<b>SD (Variance)</b>	<b>Skewness (Kurtosis)</b>	<b>25% (75%)</b>	<b>Minimum (Maximum)</b>
Erc_p_13	0.9870 (0.8373)	0.5720 (0.3272)	0.3402 (1.5443)	0.5642 (1.6116)	0.3339 (1.7373)
Erc_a_13	1.3638 (1.4025)	0.7721 (0.5961)	-0.148 (1.6360)	0.6643 (2.1451)	0.3185 (2.2501)
Erc_a1_13	1.1453 (1.3157)	0.6146 (0.3777)	-0.358 (1.5120)	0.5256 (1.5986)	0.3078 (1.8083)
Erc_p_15	1.0454 (0.8562)	0.6208 (0.3854)	0.4278 (1.5406)	0.5716 (1.7841)	0.3677 (1.8366)
Erc_a_15	1.1326 (1.0454)	0.6378 (0.4068)	-0.031 (1.7955)	0.7642 (1.8514)	0.2279 (1.8615)
Erc_a1_15	0.9047 (0.9344)	0.4996 (0.2496)	-0.067 (1.6143)	0.4989 (1.2747)	0.2379 (1.5481)
Erc_p_18	1.0472 (0.6548)	0.7828 (0.6128)	0.6840 (1.6872)	0.5859 (1.8572)	0.3199 (2.2109)
Erc_a_18	0.8822 (0.9126)	0.7341 (0.5389)	0.0441 (1.6895)	0.1138 (1.4613)	0.0097 (1.8832)
Erc_a1_18	0.6213 (0.7371)	0.6639 (0.4408)	-0.133 (1.8944)	0.0652 (0.9756)	-0.310 (1.5234)

(Three Different Return Interval: 13-month window, 15-month window, 18-month window)

\* The return-based earnings quality proxies (such as value relevance, conservatism and timeliness and ERC) are based on earnings/returns association with abnormal returns which are measured in three holding periods with a 13-month, 15-month and 18-month abnormal return correspondently. Because Collins and Kothari (1989) conclude that a conventional 12-month return period understates the earnings/returns association, particularly for larger firms and the association is maximized when returns are measured over 15 months. Hence, three different abnormal return periods allow for comparison.

\* ERC<sub>p</sub> indicates ERC based on earnings surprise measured by the deviation of actual earnings from a predicated amount based on a time-series model of earnings;

\* ERC<sub>a</sub> indicates ERC based on earnings surprise measured by the deviation of actual earnings from the consensus (median) analyst forecast (analyst forecast error);

\* ERC<sub>a1</sub> indicates ERC based on earnings surprise measured by the deviation of actual earnings from the single most recent analyst forecast (analyst forecast error).

As in the aforementioned [Table 3.2](#), it shows that the state-owned enterprises (SOEs) are predominant in our sample size between 2004 and 2013, accounting for 73.33% of the whole sample firms. Liu et al. (2014) suggest that if the management of the state-owned listed firms recognizes that tunneling not only hurts minority shareholders but also hurts itself by draining off its cash, they will not align with their parent companies in earnings manipulation. Consistent with the political theories of North (1990) and Olson (1993), if managers of state-owned listed firms deem tunneling by the parent companies as disadvantageous expropriation by the government, they may report earnings numbers conservatively to avoid a high political cost (Healy and Wahlen, 1999).

For instance, Kothari (1992) using firm-specific time-series price-earnings regressions over a one-year return interval estimates ERC with a mean of 2.61 and median of 2.00 via utilizing earnings scaled by stock closing price at t-1. Correspondently, the empirical results are close to Kothari's when the earnings surprise is calculated on the basis of the consensus median analyst forecast with 13-month return interval (details see [Table 3.5a](#)). The earnings quality literature typically controls for industry when measuring earnings quality, but surprisingly the estimates of earnings quality by industry are rarely reported.

Earnings response coefficients reported in the literature, however, are considerably smaller than implied by the time series properties of earnings. For example, Penman's (1990, table 2) estimate using annual returns/earnings data is 0.894, whereas Kormendi and Lipe (1987, table 1) report a median coefficient of 2.5. Ali and Zarowin (1992), who control for the effect of serial correlation in earnings, report a median earnings response coefficient of 1.59. Use of analysts' earnings forecasts as better proxies for the market's expectation also yields coefficients of similar size (for instance, Easton and Zmijewski (1989a, b) and Brown, Griffin, Hagerman, and Zmijewski (1987) who use Value Line's quarterly earnings forecasts).

Using analyst forecasts to infer earnings quality rather than using market prices has the advantage that the analyst forecast relates only to earnings, while a market price reflects information other than earnings. Hence, tests that infer earnings quality using market prices and assuming market efficiency confound interpretation of the impact of earnings quality alone on decision usefulness. A disadvantage of using analyst forecasts, however, is the necessary assumption that analysts are unbiased and expert forecasters, and evidence on the

validity of these assumptions is questionable. Several studies conclude that when analysts can rationally anticipate accruals management, they appropriately incorporate the implications of accruals into their forecasts (Kim and Schroeder, 1990; Coles et al., 2006; Burgstahler and Eames, 2003). However, Bradshaw et al. (2001) and Elliott and Philbrick (1990) provide contradictory evidence. Abarbanell and Lehavy (2003) possibly reconcile these results. They show that analysts fundamentally understand the implications of accruals for earnings predictability, as evidenced by their recommendation decisions, but that forecasts are nonetheless biased. Furthermore, [Table 3.5a](#) ERC by year (six groups data in total) clearly demonstrates that ERC based on time-series predicted earnings group is stronger than that based on the analyst forecasts. It may be explained that the analyst forecast efficiency is challenged compared to the information relying on historical earnings during 2008 and 2009. From 2010, things become slightly different. ERC based on analysts' forecasts is found overall to be stronger than the time-series predicted earnings group.

[Table 3.5a](#) presents an overall uptrend for ERC year by year from the perspective of both time-series predicted earnings and analysts' forecast earnings. The ERC based on the analyst forecast in 2013 is obviously higher than that in other years. This suggests a potential forecast quality-based explanation for the increase in slope of the relation between earnings surprises and returns. Easton, Harris and Ohlson (1992), who focus on the explanatory power of price-earnings regressions, suggest that a longer window is expected to be more effective than a shorter one in reducing the bias stemming from earnings anticipation. Longer windows for both returns and earnings yield less biased earnings response coefficient estimates. This is supported by the results based on time-series predicted earnings in this analysis. In the process of testing return-based metrics, the stock market is hypothesized as efficient in China and the stock returns are assumed to effectively capture the underlying firm-specific economic performance. However, as Morck et al. (2000) point out, China's stock market is of high synchronicity where stock returns capture low amounts of firm-specific information. This may lead the observed  $R^2$  not to reliably measure value relevance. [Table 3.5a](#) compares how the explanatory power of the earnings/returns relation is enhanced by varying the return interval. However, the high volatility of Chinese stock prices and the great uncertainty concerning earnings would make the earning price ratio a rather noisy measure, thus explaining the low observed  $R^2$  in the regression.

Table 3.5a Descriptive Statistics of Earnings Response Coefficient by year with R<sup>2</sup>

	2008	2009	2010	2011	2012	2013
ERC_p_13	1.7373	0.3340	1.6117	0.9657	0.7091	0.5643
R <sup>2</sup>	0.0870	0.0576	0.0923	0.0524	0.0408	0.0429
ERC_a_13	1.3975	0.3186	2.2501	1.4077	0.6643	2.1451
R <sup>2</sup>	0.0470	0.0292	0.0797	0.0364	0.0336	0.0828
ERC_a1_13	1.0919	0.3078	1.5986	1.5396	0.5256	1.8083
R <sup>2</sup>	0.0403	0.0278	0.0630	0.0420	0.0198	0.0656
ERC_p_15	1.8367	0.3677	1.7841	0.8515	0.8609	0.5716
R <sup>2</sup>	0.1111	0.0644	0.1061	0.0330	0.0488	0.0474
ERC_a_15	0.9532	0.2280	1.8615	1.1377	0.7642	1.8515
R <sup>2</sup>	0.0514	0.0282	0.0725	0.0198	0.0370	0.0759
ERC_a1_15	0.7269	0.2379	1.1419	1.2748	0.4989	1.5482
R <sup>2</sup>	0.0478	0.0283	0.0585	0.0249	0.0169	0.0609
ERC_p_18	1.8573	0.3199	2.2109	0.5859	0.7012	0.6086
R <sup>2</sup>	0.0866	0.0595	0.1153	0.0126	0.0325	0.0488
ERC_a_18	0.0098	0.1138	1.4613	0.9561	0.8692	1.8833
R <sup>2</sup>	0.0191	0.0256	0.0517	0.0106	0.0387	0.0664
ERC_a1_18	-0.3102	0.0652	0.9756	0.9116	0.5627	1.5234
R <sup>2</sup>	0.0196	0.0251	0.0451	0.0102	0.0197	0.0531

Table 3.5b Earnings Response Coefficient by year SOEs vs Non-SOEs

Year	<u>State-owned</u>					
	2008	2009	2010	2011	2012	2013
ERC_p_13	1.5123	0.2776	1.5870	0.7331	0.9497	0.2588
ERC_a_13	1.5902	0.3205	2.3277	1.1004	0.5520	1.8800
ERC_a1_13	1.3794	0.2837	1.8175	1.3212	0.5000	1.5750
ERC_p_15	1.5822	0.3069	1.8179	0.5603	1.1003	0.2844
ERC_a_15	1.0093	0.2238	1.9602	0.7820	0.6663	1.5668
ERC_a1_15	0.9361	0.2072	1.4300	0.9070	0.5227	1.2900
ERC_p_18	1.6006	0.2426	2.3054	0.3164	0.8750	0.2965
ERC_a_18	-0.1395	0.1438	1.7203	0.6624	0.7590	1.4535
ERC_a1_18	-0.2966	0.0647	1.3531	0.6230	0.6285	1.1008
Year	<u>Non-State-owned</u>					
	2008	2009	2010	2011	2012	2013
ERC_p_13	3.8737	0.6192	1.9464	1.4545	0.2589	1.8710
ERC_a_13	1.0241	0.2973	1.6537	3.2054	1.3921	4.6758
ERC_a1_13	0.6043	0.5139	0.4395	2.5662	0.7001	3.3716
ERC_p_15	4.2658	0.6808	1.7547	1.4848	0.4018	1.8040
ERC_a_15	0.7536	0.2507	1.1785	3.3880	1.3991	4.5788
ERC_a1_15	0.3427	0.5114	-0.1904	3.1978	0.4024	3.2402
ERC_p_18	4.3015	0.4286	1.8264	1.2205	0.3297	1.9469
ERC_a_18	0.7239	-0.0586	-0.4116	2.6155	1.6020	5.7619
ERC_a1_18	-0.4727	0.0964	-0.8904	2.3533	0.2411	3.8952

(Three Different Return Interval: 13-month window, 15-month window, 18-month window)

\*ERC\_p indicates ERC based on earnings surprise measured by the deviation of actual earnings from a predicated amount based on a time-series model of earnings; ERC\_a (ERC\_a1) indicates ERC based on earnings surprise measured by the deviation of actual earnings from the consensus median analyst forecast (the single most recent analyst forecast).

Prior literature discusses the earnings response coefficient's sensitivity to the return-earnings measurement window. This section reports results of estimating earnings response coefficients using a longer, contemporaneous window for stock returns. The motivation is to assess the effectiveness of longer measurement windows in reducing bias in earnings response coefficient estimates. The pooled regressions constrain the ERC to be a cross-sectional constant and yield coefficient estimates similar to the cross-sectional average coefficient from the firm-specific time-series regressions. Ordinary least squares coefficients are estimated without making an adjustment for auto-correlated errors since the ordinary least squares estimates are unbiased (see Kothari and Sloan, 1992). [Table 3.5b](#) shows that Non-SOEs with overall higher ERC than SOEs in the stock return/earnings model indicating higher-quality earnings for Non-SOEs in China during 2008 and 2013.

[Table 3.7](#) shows that both predicted earnings per share based on the time-series model and analyst forecast earnings per share are biased upwards (negative forecast error) resulting in right skewness of the forecast error. According to prior literature, if the actual change in earnings is large, then analysts' forecasts will tend to be less accurate. Generally, it is hypothesized that financial analysts should be able to make far better forecasts than those from simple statistical extrapolations. Analysts use the simple no-change model as one input into their forecasts. In fact, the random walk prediction is probably the starting point in many analysts' forecasting processes. Financial analysts have advantages over time series models in terms of information used, knowledge of forecasts made by other analysts, and timing. In [Table 3.7](#), predicted EPS from time-series statistical model is much closer to actual EPS than analyst consensus forecast earnings (both median and single most recent analyst forecast) during 2008 and 2013. This result is correspondent with the results shown in [Table 3.9A](#) and [Table 3.9B](#). It fully reflects that analyst forecast earnings is less accurate than time-series statistical model predictions in China between 2008 and 2013. This result conflicts with findings in prior literature based on western developed countries, such as the US and the UK, indicating the malfunction of financial analysts in mainland China. It may be due to Chinese listed companies with high 'discretionary' accruals result in less persistent earnings. Persistent earnings imply recurring earnings which are a desirable element for the analysts to predict the firms' future earnings. Meanwhile, this analysis finds that single most recent analyst forecast EPS outperforms consensus median analyst forecast EPS in [Table 3.7](#) and [Figure 3.3](#).

Table 3.6 Descriptive Statistics of other variables

<b>Earnings Quality</b>	<b>Mean (Median)</b>	<b>SD (Variance)</b>	<b>Skewness (Kurtosis)</b>	<b>25% (75%)</b>	<b>Minimum (Maximum)</b>
Actual EPS (adjusted)	0.2639 (0.1998)	0.4830 (0.2333)	0.6993 (19.9809)	0.0600 (0.4100)	-4.2100 (5.8900)
Predicted EPS	0.2126 (0.1067)	0.8658 (0.7496)	1.9068 (31.9208)	-0.0835 (0.4151)	-7.8767 (11.8939)
Analysts EPS (Consensus Forecast)	0.4711 (0.3700)	0.4267 (0.1820)	2.4041 (13.9233)	0.1950 (0.6270)	-0.7100 (4.535)
TCA_ASSETS	0.0783 (0.0510)	0.1085 (0.0118)	6.3288 (70.2602)	0.0221 (0.0967)	0.0000 (1.8756)
TCA_ASSETS	-0.0327 (-0.0258)	0.1298 (0.0168)	6.3288 (70.2602)	-0.0746 (0.0163)	-1.7956 (1.8756)
LagCFO_ASSETS	0.0456 (0.0446)	0.0995 (0.0099)	-3.0218 (144.8918)	0.0075 (0.0860)	-2.8399 (1.6370)
LeadCFO_ASSETS	0.0609 (0.0531)	0.1411 (0.0199)	2.6441 (92.6299)	0.0064 (0.1132)	-2.0754 (3.4441)
LagEarnings_Assets	0.0083 (0.0239)	0.1876 (0.0352)	-12.1241 (245.5097)	0.0070 (0.0470)	-4.9891 (1.6703)
LeadEarnings_Assets	0.0387 (0.0320)	0.1104 (0.0122)	1.5218 (40.7052)	0.0085 (0.0683)	-1.2004 (1.7641)
CFO_ASSETS	0.0542 (0.0506)	0.0926 (0.0086)	0.1316 (13.9095)	0.0090 (0.0999)	-1.0207 (0.9014)
NIBE_Assets	0.0236 (0.0286)	0.0996 (0.0099)	-4.3170 (60.9929)	0.0086 (0.0557)	-1.7985 (1.0927)
Firm Size	21.4770 (21.4140)	1.0180 (1.0360)	0.3240 (3.0300)	20.7460 (22.1360)	18.6650 (24.8460)
Leverage	0.5520 (0.5490)	0.2240 (0.0500)	0.5070 (4.5480)	0.4010 (0.6970)	0.0210 (1.9840)
State Ownership (Percentage)	0.2180 (0.1440)	0.2330 (0.0540)	0.5760 (1.9290)	0.0000 (0.4230)	0.0000 (0.9710)
Sales Growth (Sales- AR) change/TA	0.0940 (0.0730)	0.2130 (0.0460)	1.1160 (11.035)	-0.0030 (0.1730)	-0.8870 (1.8790)



Table 3.7 Summary statistics for actual earnings per share, predicted earnings per share and analyst forecast earnings per share

Period: 2008-2013				
	Actual EPS	Predicted EPS	Analyst Forecast EPS_Median	Analyst Forecast EPS_Single Most Recent
Number of observations	3014	3014	3014	3014
Mean	0.2639	0.3402	0.4711	0.4205
Median	0.1998	0.1905	0.3700	0.3105
Standard Deviation	0.4830	0.8962	0.4267	0.4378
Variance	0.2333	0.8032	0.1820	0.1916
Skewness	0.6993	2.7350	2.4041	2.6434
Kurtosis	19.9809	30.1586	13.9233	16.6185

As shown in [Figure 3.2](#), it presents the distribution of stock abnormal return with 13-month, 15-month and 18-month return windows respectively. Earnings Surprise is calculated by (1) the deviation of actual earnings from a time-series predicted earnings and (2) the deviation of actual earnings from the consensus (median) analyst forecast, this study compares actual reported EPS with time-series predicted EPS and consensus analyst forecast EPS through plotting the related graph to detect which one is closer to actual reported EPS (see [Figure 3.3](#)). The empirical results reveal that the deviation of actual earnings from time-series predicted earnings is smaller than the deviation of actual earnings from the consensus analyst forecast. Collins et al. (1987) suggest that measurement error in Earnings Surprise proxy weakens the ERC and makes it difficult to detect the influences of the ERC's determinants. The bias in an estimated ERC can be substantial and influential. For example, Beaver et al. (1980) document ERCs estimated at the individual security level using a time-series earnings expectation proxy for unexpected earnings understate the 'true' or theoretical ERCs by as much as 70-80%, on average. Brown et al. (1987a, b) also consider analysts' forecasts are better than time series proxies. However, one interesting finding in this study is that earnings forecasts based on the time-series statistical model with drift is more accurate than the consensus analyst forecast (details see [Table 3.9A](#) and [Table 3.9B](#)). It produces an inconsistent result with Beaver et al. (1980) and Brown et al.'s (1987a, b) via comparison with the two metrics for earnings surprise. This finding conflicts with prior literature, and indicates the malfunction of financial analysts in mainland China.

Figure 3.2 Abnormal Stock Returns

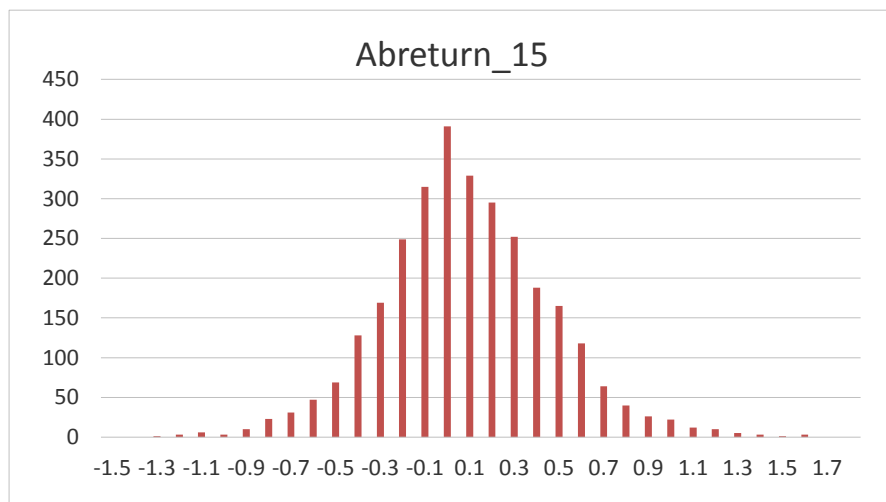
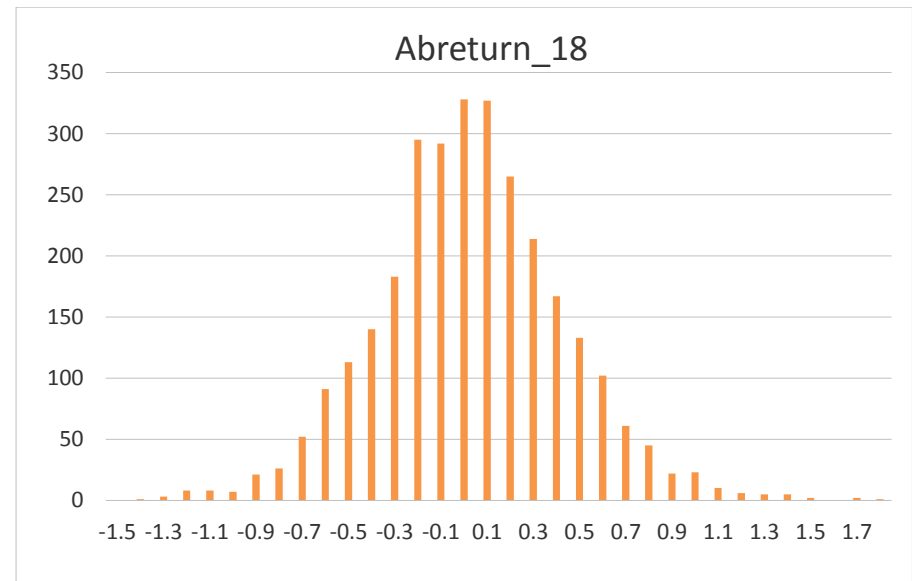
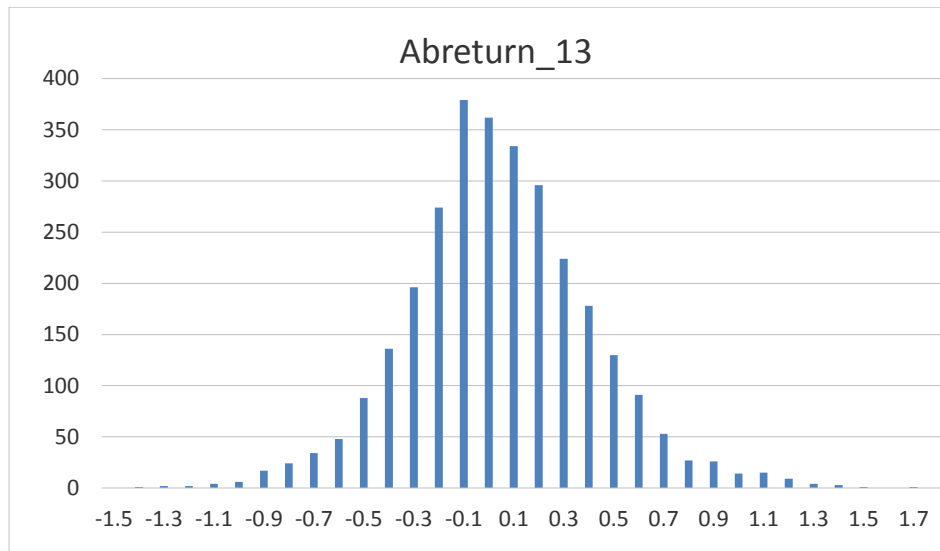


Figure 3.3 Actual EPS vs. Predicted EPS vs. Analyst Forecast EPS vs. Single most recent EPS

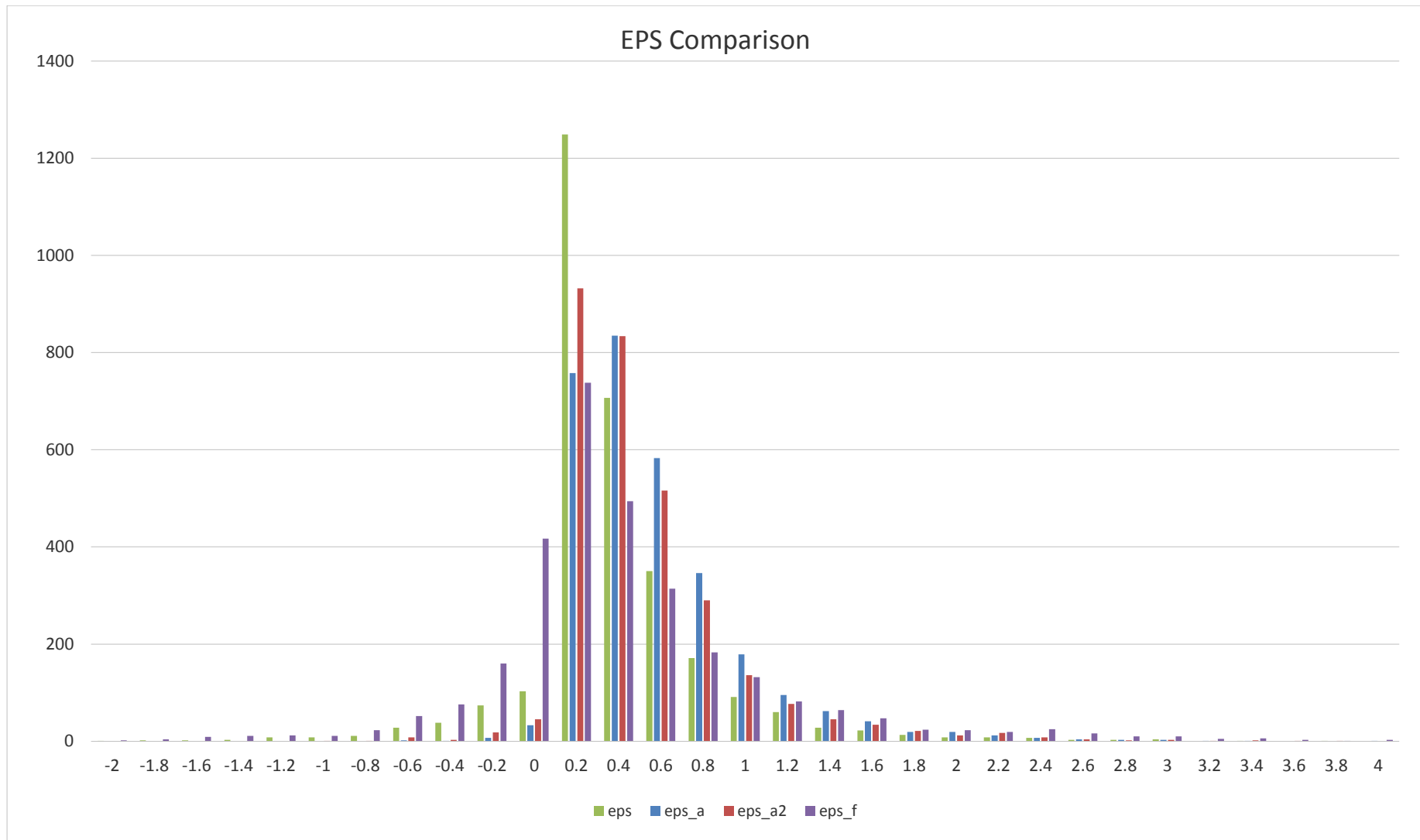


Table 3.8 describes the comparison test results among earnings quality measures except ERC between state-owned and non-state-owned firms. The last two columns report the two-tailed p-value for the difference between state-owned and non-state-owned companies in means and medians respectively. T-tests (Wilcoxon rank tests) are used to test the difference in means and medians (\* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ ). As shown in Table 3.8, the empirical result clearly states that the SOEs are inferior to Non-SOEs in earnings persistence at the 1% significance level, but perform better than Non-SOEs in accruals quality and earnings smoothness at 1% significant level. It indicates that the earnings are more persistent in Non-SOEs than that in SOEs. The value relevance, predictability, conservatism and timeliness for SOEs and Non-SOEs are very close with no substantial difference. Simply according to the values, there are slightly higher value relevant earnings and more predictable earnings and less conservative earnings (with 13-month and 18-month return interval) in Non-SOEs reflecting higher earnings quality; but less timely earnings in Non-SOEs. It is consistent with previous studies that conservatism reduces earnings persistence and predictability, facilitates earnings management, reduces analyst forecast accuracy, and may decrease the value relevance of earnings (e.g., Basu, 1997; Ball et al., 2008; Dichev and Tang, 2008; and Chen et al., 2014). Compliant with the political theories of North (1990) and Olson (1993), if managers of state-owned listed firms deem tunneling by the parent companies as disadvantageous expropriation by the government, they may report earnings numbers conservatively to avoid a high political cost (Healy and Wahlen, 1999), which supports political cost hypothesis. However, the conservatism with 15-month adjusted market return for SOEs is obviously inferior to that for Non-SOEs at 10% significance level, which means Non-SOEs' reported earnings are more conservative than SOEs in China. Table 3.5b exhibits Non-SOEs with overall higher ERC (earnings response coefficient) than SOEs based on both predicted earnings and consensus analyst forecast earnings, indicating higher earnings quality in Non-SOEs in China during 2008 and 2013. It is consistent with prior literature, which provides evidence that earnings with more consistency and relevance will have stronger ERC (Kormendi and Lipe, 1987; Collins and Kothari, 1989; and Easton and Zmijewski, 1989). To sum up, this study concludes that SOEs overall exhibit a lower earnings quality than Non-SOEs, rejecting the null hypothesis. It supports the agency theory, which argues that state ownership in SOEs creates incentives and regulatory backing for self-serving purposes, thus motivating SOEs to manipulate accounting numbers (e.g., Liu *et al.*, 2014).

Table 3.8 Earnings Quality Comparison\_ SOEs vs. Non-SOEs

Variables	State-owned			Non-state-owned			P-Value	
	mean	sd	median	mean	sd	median	mean	median
Earnings Predictability	0.4055	0.5756	0.2198	0.3883	0.5592	0.2135	0.3963	0.6960
Earnings Persistence	0.3202	0.3944	0.3633	0.2824	0.4060	0.3294	0.0075 ***	0.0360
Value Relevance_13	-0.6159	0.2767	-0.6658	-0.6156	0.2850	-0.6862	0.9781	0.1100
Value Relevance_15	-0.6282	0.2747	-0.6792	-0.6240	0.2847	-0.6771	0.6672	0.9150
Value Relevance_18	-0.6284	0.2806	-0.6847	-0.6193	0.2897	-0.6843	0.3633	0.9720
Conservatism_13	-1.3387	2.4394	-1.3267	-1.3095	2.2221	-1.2987	0.7498	0.4370
Conservatism_15	-1.3328	2.5112	-1.2841	-1.5138	2.5035	-1.2297	0.0737*	0.1040
Conservatism_18	-1.1837	2.4596	-1.1881	-1.3413	2.2468	-1.2656	0.1115	0.0370
Timeliness_13	-0.7649	0.2608	-0.8703	-0.7619	0.2696	-0.8778	0.7490	0.5700
Timeliness_15	-0.7471	0.2728	-0.8579	-0.7455	0.2767	-0.8657	0.8707	0.5220
Timeliness_18	-0.7151	0.2910	-0.8262	-0.7243	0.2953	-0.8462	0.3772	0.1550
Accrual Quality	1.1533	1.3606	0.6046	1.3345	1.4865	0.7281	0.0003***	0.0010
Smoothness	4.5586	5.4321	2.3236	5.0858	5.8302	2.5930	0.0075***	0.0600

*Accrual Quality* = the standard deviation of firm  $j$ 's residuals from a regression of current accruals on lagged, current and future cash flows from operations; Large (small) values of Accrual Quality indicate poor(good) earnings quality.

*Earnings Persistence* = the negative of firm  $j$ 's slope coefficient from an AR1 model of annual earnings with drift; larger (smaller) values of persistence correspond to less (more) persistent earnings.

*Earnings Predictability* = the square root of the error variance from firm  $j$ 's AR1 model; Large (small) values of Predictability imply less (more) predictable earnings.

*Earnings Smoothness* = the ratio of firm  $j$ 's standard deviation of earnings before extraordinary items (scaled by assets) to the standard deviation of cash flows from operations (scaled by assets); Larger values of Smoothness indicate less earnings smoothness.

*Relevance* = the negative of the adjusted  $R^2$  from a regression of 13-month, 15-month and 18-month returns on the level and change in annual earnings (before extraordinary items); Large (small) values of Relevance imply less (more) value relevant earnings.

*Timeliness* = the negative of the adjusted  $R^2$  from a reverse regression of annual earnings (before extraordinary items) on variables capturing positive and negative 13-month, 15-month and 18-month returns; Larger values of Timeliness and Conservatism imply less timely and less conservative earnings, respectively.

*Conservatism* = the negative of the ratio of the coefficient on bad news (negative returns) to good news (positive returns) in the reverse regression

The abnormal return for each firm is measured in three holding periods with a 13-month, 15-month and 18-month abnormal return.

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

Table 3.9A Earnings Surprise Based on Predicted EPS and Analyst Forecasts

Group ES_1	N	Mean	SD	Skewness	Kurtosis
-1	1500	-0.0421	0.0687	-6.112	69.22
1	1500	0.0500	0.135	12.38	223.5
Total	3000	0.0052	0.117	9.668	221.7
Group ES_2	N	mean	sd	skewness	kurtosis
-1	2400	-0.0349	0.0669	-8.461	116.9
0	41	0	0	.	.
1	582	0.0149	0.0303	6.805	66.62
Total	3000	-0.0248	0.0642	-7.742	115.4
Group ES_22	N	mean	sd	skewness	kurtosis
-1	2100	-0.0316	0.0670	-9.092	129.00
0	68	0	0	.	.
1	798	0.0140	0.0286	6.518	62.94
Total	3000	-0.0188	0.0619	-8.464	134.90

*Notes: Group ES\_1= Actual Reported EPS – Predicated EPS based on a time-series model  
 Group ES\_2=Actual Reported EPS – Consensus (median) analyst forecast  
 Group ES\_22=Actual Reported EPS – Single most recent analyst forecast  
 -1 here means Negative Earnings Surprise  
 0 here means Actual EPS just meet Analyst Forecast Benchmark  
 1 here means Positive earnings Surprise*

Table 3.9B Earnings Surprise Based on Predicted EPS and Analyst Forecasts by year

Stats	Year	es1	es2	es22
<b>Mean</b>	2008	-0.0147	-0.0207	-0.0175
	2009	0.0238	-0.0335	-0.0230
	2010	0.0052	-0.0089	-0.0069
	2011	-0.0001	-0.0196	-0.0155
	2012	0.0025	-0.0413	-0.0301
	2013	0.0145	-0.0256	-0.0210
	<b>SD</b>	2008	0.0549	0.0365
2009		0.2360	0.1089	0.1051
2010		0.0467	0.0288	0.0299
2011		0.0647	0.0369	0.0370
2012		0.0868	0.0788	0.0756
2013		0.0969	0.0483	0.0475
<b>Median</b>		2008	-0.0140	-0.0111
	2009	0.0017	-0.0102	-0.0044
	2010	0.0044	-0.0053	-0.0027
	2011	0.0033	-0.0115	-0.0077
	2012	0.0037	-0.0215	-0.0098
	2013	0.0072	-0.0131	-0.0092

Figure 3.4 demonstrates the distribution of earnings surprises and exhibits a high frequency of just missing analysts' forecasts (a high frequency of negative earnings surprises) rather than meeting or beating analysts' forecasts in Chinese listed firms. In terms of prior research, earnings management that responds to analysts' forecasts gives rise to an asymmetric distribution of earnings surprises with a disproportionately large number of positive earnings surprises and a disproportionately small number of negative earnings surprises. In this analysis, earnings surprises depend on three variables, actual EPS vs. analysts' forecast EPS and actual EPS vs. time-series predicted EPS. By comparing earnings surprises derived from analysts' forecasts and earnings surprises derived from the predicted earnings generated by a time-series AR1 model, it is clear that analysts' forecasts are likely contribute to the asymmetric distribution of earnings surprises from the above figures. Table 3.10 reports the earnings surprise in SOEs and Non-SOE and finds no substantial differences from the perspective of analyst forecast EPS; however, the earnings surprise in Non-SOEs are much smaller than in SOEs from the perspective of time-series predicted EPS.

Table 3.10 Earnings surprise in State-Owned vs. Non-State-Owned

Group ES_1	N	State-owned		Non-State-owned		
		Mean	SD	N	Mean	SD
-1	1100	-0.0407	0.0621	385	-0.0460	0.0844
1	1200	0.0507	0.1260	380	0.0479	0.1610
Total	2200	0.0068	0.1100	765	0.0007	0.1370
Group ES_2	N	Mean	SD	N	Mean	SD
-1	1800	-0.0357	0.0725	616	-0.0323	0.0470
0	29	0	0	12	0	0
1	445	0.0151	0.0308	137	0.0141	0.0289
Total	2200	-0.0252	0.0690	765	-0.0235	0.0475
Group ES_2A	N	Mean	SD	N	Mean	SD
-1	1600	-0.0320	0.0723	556	-0.0303	0.0488
0	50	0	0	18	0	0
1	607	0.0144	0.0305	191	0.0124	0.0214
Total	2200	-0.0188	0.0662	765	-0.0189	0.0468

**Notes:** Group ES\_1= Actual Reported EPS – Predicated EPS based on a time-series model  
 Group ES\_2=Actual Reported EPS – Consensus (median) analyst forecast  
 Group ES\_2A=Actual Reported EPS – Single most recent analyst forecast  
 -1 here means Negative Earnings Surprise  
 0 here means Actual EPS just meet Analyst Forecast Benchmark  
 1 here means Positive earnings Surprise

Figure 3.4 Distribution of Earnings Surprise

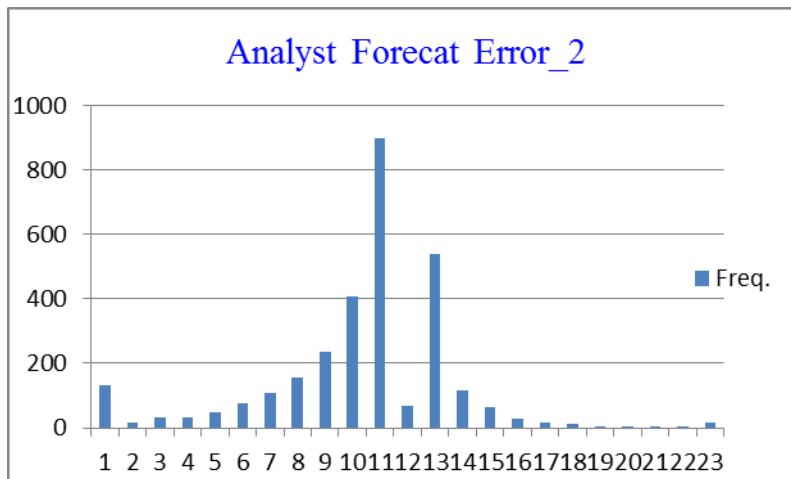
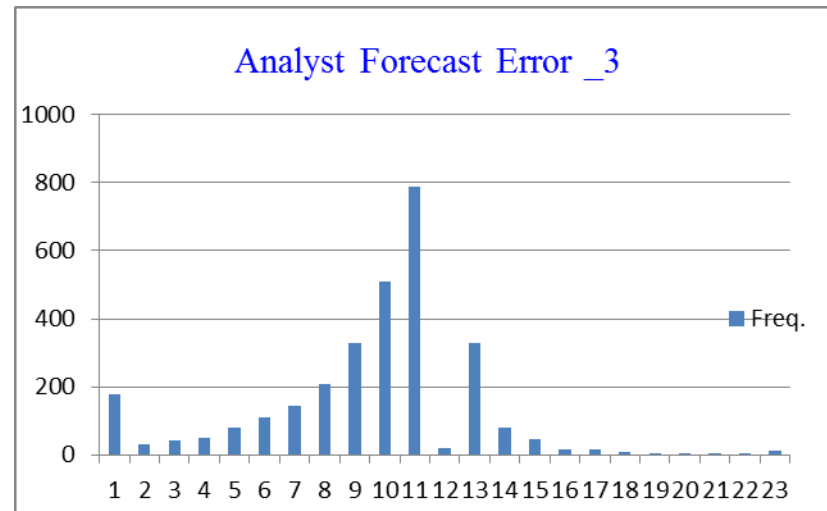
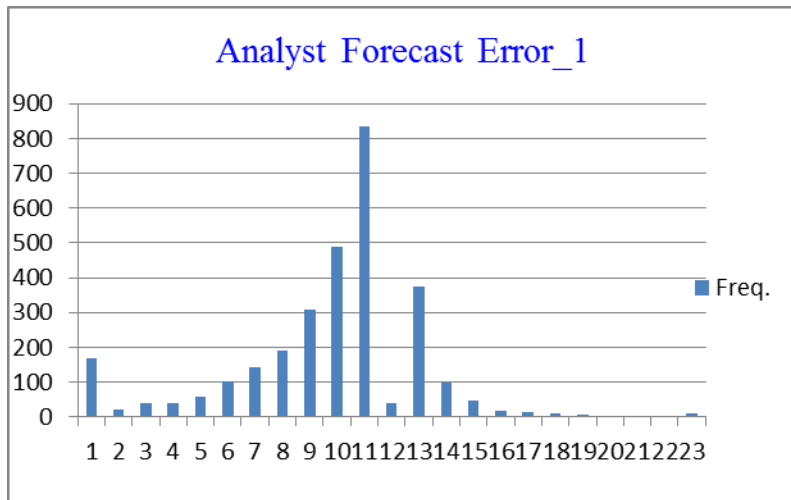




Table 3.11 presents Spearman Correlations between different Earnings Quality Proxies. The Correlations between the earnings properties demonstrate that Earnings Predictability is positively related with Earnings Persistence and Earnings Smoothness at the 5% significance level. Earnings persistence is significantly negative with both value relevance 13-month return window and conservatism with 18-month return windows. The value relevance is strongly positive with Timeliness with all three different return windows. Meanwhile, Accruals Quality is positively correlated with Earnings Smoothness at the 5% significance level. As noted, while the proxies represent properties of the same reported earnings number, the quality proxies measure different attributes of earnings. The point of presenting the correlations is to emphasize that the empirical tests should exploit variation across the measures to make predictions about the specific features of earnings that make them decision useful. Early research by Kormendi and Lipe (1987), Collins and Kothari (1989), and Easton and Zmijewski (1989) provide evidence that more persistent earnings have a stronger stock price response, indicating there is a positive relation between earnings persistence and ERC. A series of early papers following Ball and Brown (e.g., Kormendi and Lipe, 1987; Collins and Kothari, 1989) show that ERCs are positively related to earnings persistence. The motivation for this research is an assumption that more persistent earnings have greater implications for expected future cash flows associated with the firm's fundamental performance. Turning finally to Earnings Response Coefficient, previous studies provide the evidence that there is a significantly negative relationship between ownership and the earnings response coefficient. It indicates that the higher the dominant shareholder's ownership stake is, the less informative earnings becomes. In terms of Ronen and Yaari (2008), Earnings Response Coefficient (ERC) measures the weight of earnings in price movements. When earnings are more value relevant, stronger investor response will be expected. The correlation matrix is largely consistent with findings reported in prior literature. Analyst Forecast errors are highly correlated with their contemporaneous abnormal returns, confirming the general earnings/return relationship.

### **3.7. Robustness Test**

Earnings quality is a multidimensional concept and difficult to measure. To mitigate the potential effects of measurement errors and omitted variables, this research fully measures the earnings quality through both accounting-based and market-based earnings attributes: accruals quality, persistence, predictability, smoothness, value relevance, timeliness,

conservatism and earnings response coefficient (ERC).

To check the robustness, all market-based earnings attributes in this empirical analysis further presents and summarizes how the explanatory power of the earnings/returns relation is enhanced by varying the return interval (13-month, 15-month and 18-month window, details see Table 3.5a, Table 3.5b and Table 3.8). There are no substantial differences. Besides consensus median analyst forecasts, the single-most recent analyst forecast issued prior to the earnings announcement is applied as an alternative of consensus analyst forecasts in this study. O'Brien (1988) and Brown (1991) and Ayer (2006) argue that the single-most recent analyst forecast is more accurate in predicting actual earnings than the consensus mean forecast (details see Table 3.10, Table 3.9A and Table 3.9B and Table 3.7).

Based on O'Brien (1988) and Brown (1991) and Ayers (2006), this study utilizes the single-most recent analyst forecast issued prior to the earnings announcement as an alternative forecast benchmark. Because the single-most recent analyst forecast is perceived as more accurate in predicting actual earnings than the consensus mean (median) forecast. Likewise, Brown and Kim (1991) find that the single-most recent analyst forecast more accurately reflects the market's earnings expectation than the consensus mean forecast. Assuming that firms intend to meet or beat market expectations, using a more current forecast proxy should provide a more powerful test of whether firms use discretionary accruals to meet or beat analyst forecasts. *Earnings Surprise<sub>j,t</sub>* (unexpected earnings) is defined as firm j's year t actual earnings per share minus the single-most recent analyst forecast provided prior to the earnings announcement, both are available from the CSMAR analyst forecast database from 2008 to 2013.

Table 3.11 Spearman Correlations between Earnings Quality Proxies

	Earnings Predictability	Earnings Persistence	Value Relevance_1 3	Value Relevance_1 5	Value Relevance_1 8	Conservati sm_13	Conservati sm_15	Conservati sm_18	Timeline ss_13	Timeline ss_15	Timeline ss_18	Accr uals	Smoot hness
Earnings Predictability	1												
Earnings Persistence	0.0324*	1											
Value Relevance_13	0.0254	-0.0486*	1										
Value Relevance_15	0.0116	-0.0294	0.8631*	1									
Value Relevance_18	-0.0234	0.0172	0.5521*	0.6991*	1								
Conservatism _13	0.0004	-0.0136	-0.0130	-0.00560	-0.0061	1							
Conservatism _15	-0.0156	-0.0192	0.0310	0.0196	0.0225	0.0036	1						
Conservatism _18	-0.0025	-0.0393*	0.0005	-0.0009	-0.0117	-0.0014	0.0021	1					
Timeliness_1 3	-0.0075	-0.0077	0.3569*	0.3099*	0.1774*	-0.0019	0.0477*	-0.0013	1				
Timeliness_1 5	-0.0107	0.0052	0.3231*	0.3632*	0.2443*	0.0054	0.0339	-0.0084	0.5716*	1			
Timeliness_1 8	-0.0272	-0.0003	0.2363*	0.2679*	0.3387*	-0.0054	0.0161	0.0144	0.3170*	0.4011*	1		
Accrual Quality	-0.0239	-0.0042	-0.0082	-0.0105	-0.0042	-0.0012	-0.0033	0.0023	-0.0269	-0.0183	-0.0166	1	
Smoothness	0.1302*	0.0262	0.0120	0.0152	-0.0212	0.0005	-0.0051	0.0023	-0.0400*	-0.0192	-0.0314*	0.12 32*	1

Notes: \*p&lt;0.05

### 3.8. Summary

There is a debate whether state-owned enterprises (SOEs) have more incentives to manipulate earnings than in non-state-owned enterprises (Non-SOEs). Since there is one more type of agency cost in SOEs, i.e. the agency cost between the state and the controlling owner, and this type of agency cost cannot be addressed simply by ownership concentration, the entrenchment effect of ownership concentration on earnings management is more serious in SOEs than in Non-SOEs. According to financial distress theory, SOEs have the advantage to receive financial subsidies from government while NSOEs face more financing constraints. Therefore, incentives for Non-SOEs to manipulate earnings are stronger than in SOEs (Wang *et al.*, 2008). The agency theory, however, argues that state ownership in SOEs creates incentives and regulatory backing for self-serving purposes, thus motivating SOEs to manipulate accounting numbers (Liu *et al.*, 2014). The political cost hypothesis complements the agency theory and illustrates that SOEs' managers manipulate accounting numbers in response to government intervention. When governments aim to expropriate the benefits of firms, SOEs would report conservatively to disguise the profits. However, when governments impel firms to enhance performance via stringent government regulations, SOEs would report aggressively to meet specific thresholds.

This study contributes to provide a better understanding of the nature of accounting information quality by measuring the effect of government ownership and its associated institutional incentives on listed firms' earnings quality in Chinese context with its unique political, social, cultural and economic environment and huge sample size. It investigates the impact of state ownership on earnings quality by comparing a sample of Chinese state-owned versus non-state-owned firms through tracking the ultimate controllers instead to grade government intervention. To fully capture the earnings attributes, this research examines the quality of reported earnings in China from the perspective of both accounting-based and market-based earnings attributes. Several variables are employed to proxy for Earnings Quality based on prior research (for instance, Ayers *et al.*, 2006; Dechow *et al.*, 2010 and Francis *et al.*, 2004). Accrual quality, persistence, predictability, and smoothness are classified as 'accounting-based' earnings attributes. Value relevance, timeliness, and conservatism and are categorized as "market-based' earnings attributes. Earnings Response Coefficient (ERC) is extended as a function of 'market-based' earnings quality via detecting

earnings surprise, which is measured by: (a) the deviation of actual earnings from a predicated amount based on a time-series model of earnings *and* (b) the deviation of actual earnings from the consensus (median) analyst forecast, computed using each analyst's latest forecast before the earnings announcement. In addition, it tests whether analysts' forecasts are more accurate than time-series predicted statistics with random walk. This study further presents and summarizes how the explanatory power of the earnings/returns relation is enhanced by varying the return interval (13-month, 15-month and 18-month window).

In the process of testing return-based metrics, the stock market is hypothesized as efficient in China and the stock returns are assumed to effectively capture the underlying firm-specific economic performance. However, as Morck et al. (2000) argued, Chinese stock market is of high synchronicity where stock returns capture low amounts of firm-specific information. This may lead the observed  $R^2$  not to reliably measure value relevance. Since the high volatility of Chinese stock prices and the great uncertainty concerning earnings would make the earning price ratio a rather noisy measure, thus explaining the low observed  $R^2$  in the regression. The issue of stock liquidity is another factor that may explain the variations of value relevance among firms in China. Gaio (2010) provides evidence that the country environment is important in explaining the variation in market-based earnings attributes. Although individual and institutional holdings constitute a company's total tradable shares as in other stock markets, retail investors generate most of the trading volume in the Chinese market.

The empirical results show that Chinese state-owned firms overall exhibit a lower earnings quality than non-state-owned firms supporting the agency theory. Since Chinese government ownership creates incentives and regulatory backing for self-serving purposes that negatively impact the listed firms' financial reporting. This analysis clearly states that the SOEs are inferior to Non-SOEs in earnings persistence at the 1% significance level, but perform better than Non-SOEs in accruals quality and earnings smoothness at 1% significant level. It indicates that the earnings are more persistent in Non-SOEs than that in SOEs. The value relevance, predictability, conservatism and timeliness for SOEs and Non-SOEs are very close with no substantial difference. Simply according to the values, higher value relevant earnings and more predictable earnings and less conservative earnings (with 13-month and 18-month return interval) in Non-SOEs represent higher earnings quality; but less timely earnings in Non-SOEs implies lower earnings quality. It is consistent with previous studies that

conservatism reduces earnings persistence and predictability, facilitates earnings management, reduces analyst forecast accuracy, and may decrease the value relevance of earnings (e.g., Basu, 1997; Ball et al., 2008; Dichev and Tang, 2008; and Chen et al. (2014). Compliant with the political theories of North (1990) and Olson (1993), if managers of state-owned listed firms deem tunneling by the parent companies as disadvantageous expropriation by the government, they may report earnings numbers conservatively to avoid a high political cost (Healy and Wahlen, 1999). However, the conservatism with 15-month adjusted market return for SOEs is obviously inferior to that for Non-SOEs at 10% significance level, which means Non-SOEs' reported earnings are more conservative than SOEs in China. Ewert and Wagenhofer (2012) present that tightening accounting standards will increase the ERC, which is also an important attribute of earnings quality. Non-SOEs with overall higher ERC (earnings response coefficient) than SOEs based on both predicted earnings and consensus analyst forecast earnings indicates higher earnings quality in Non-SOEs in China during 2008 and 2013. It is consistent with prior literature, which provides evidence that earnings with more consistency and relevance will have stronger ERC (Kormendi and Lipe, 1987; Collins and Kothari, 1989; and Easton and Zmijewski, 1989). To sum up, consistent with prior studies, this study reports a very robust result in its analysis.

However, one interesting finding is that predicted earnings based on the time-series statistical model with drift are more accurate than the consensus analyst forecast earnings, i.e. the deviation of actual earnings from analyst forecast earnings is larger than the deviation of actual earnings from the time-series predicated earnings. This result conflicts with findings in prior literature based on western developed countries, such as the US and the UK, indicating the malfunction of financial analysts in mainland China. Furthermore, SOEs manipulate down the earnings much more than Non-SOEs, manifesting the government generally expropriate the benefits of SOEs, according to the political cost hypothesis. The ERC<sub>p</sub> findings indicate SOEs still manipulate earnings more than Non-SOEs from 2008-2010, rejecting the financial-distress theory, probably because the Chinese ¥4-billion fiscal scheme from late 2008 wasn't designed in favour of SOEs.

There are some limitations in the earnings quality measures. One initial concern related to the market-based earnings attributes is how well stock returns can proxy for economic income, particularly in emerging markets like China. Since emerging markets have very distinctive characteristics and are structurally different from both developed markets and each other.

Drummen and Zimmerman (1992) and Eftekhari and Satchell (1999) all demonstrate that country specific factors predominate over other factors (e.g. world factors and industry trends) in the determination of stock returns. This study relied on the assumption that the Chinese stock market is efficient and the stock returns effectively reflect and capture the fundamental firm-specific economic performance. However, Morck et al. (2000) argue that the stock market in China is of high synchronicity where stock returns capture low amounts of firm-specific information. It may cause the observed  $R^2$  not to reliably measure value relevance. The second concern is related to this study's accruals quality measure. Wysocki (2006) presume that Dechow and Dichev's model (2002) fails to capture a firm's earnings quality because there is a strong negative correlation between contemporaneous cash flows and accruals. Studies find that common law countries do not necessarily have higher quality in every attribute of earnings (e.g. Boonlert-U-Thai et al., 2006; Bushman and Piotroski, 2006). Meanwhile, all abnormal accruals models suffer from the inherent limitation that is difficult to validate the accuracy of their predictions. For example, it is unable to verify whether the estimates of discretionary accruals are the result of management's opportunistic accounting choices, or just an artifact of the particular model employed. This is a construct validity problem, which means that these proxies utilized in this study are unable to reliably measure the underlying theoretical constructs they are intended to measure. The final concern is the analyst forecast error. Bartholdy and Feng (2013) investigate the quality of securities firms' earnings forecasts and stock recommendations in China and find that both earnings forecasts and stock recommendations are biased upwards and stock markets regard stock recommendations as having new information. They show the forecast error in the Bear market from September, 2002 to October, 2005 was larger than that in the Bull market between November, 2005 and October, 2007. The sample period for ERC model in this research is during the year of 2008 and 2013, which is deemed as a stage of Bear market. It will be a critical factor which has an impact on the analyst forecast accuracy.

**Chapter 4 Earnings Management and  
Earnings Surprises: Management's  
Incentives to meet or beat Analysts'  
Forecast Benchmark in China**



## **Chapter 4 Earnings Management and Earnings Surprises: Management's Incentives to meet or beat Analysts' Forecast Benchmark in China**

### **4.1. Introduction**

Understanding a company's earnings quality requires expertise in finance, accounting, and corporate strategy and a strong knowledge of the industry and background in which the company operates and the corporate governance mechanisms monitoring and rewarding employees and managers. An analyst with such knowledge and expertise provides the capital markets with an important value-added service (Healy and Palepu, 2001; Dechow and Schrand, 2004). Ronen and Yaari (2008) identify analysts as one of the gatekeepers researching firms they followed and making predictions of future earnings and recommendations<sup>47</sup> on whether to buy or sell shares. Financial analysts are deemed as prominent information intermediaries to monitor management and improve earnings quality in capital markets. The activities in which financial analysts are engaged and the competition among them are considered to enhance the informational efficiency of capital markets for regulators and other market participants (Givoly and Lakonishok, 1979; Lys and Sohn, 1990; and Francis and Soffer, 1997). Prior literature argues that analysts reduce information asymmetry between investors and management (Brennan and Hughes, 1991; Brennan and Subrahmanyam, 1995; Bushman and Smith, 2001; Easley et al., 1998; Healy and Palepu, 2001; Houston et al., 2006). Although extensive research in accounting and finance has examined the role of financial analysts in developed economies, this issue has not been thoroughly examined in an emerging market setting. The term 'emerging market'<sup>48</sup> refers to the securities markets of developing economies which have been gradually becoming an integral and indispensable part of the world capital markets (Liaw, 1999).

Reported earnings are considered as a primary indicator of information quality (Dechow, 1994; Dechow et al., 1998; Ronen and Yaari, 2008). Earnings are composed of accruals and

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<sup>47</sup> Recommendation terminologies are varying by firms and analyst. Common recommendations range from 'strong buy' and 'buy' through 'hold' to 'sell' and 'strong sell'. (see Ronen and Yaari, 2008)

<sup>48</sup> Emerging markets are defined as economies with low to middle per capita income in a state of transition to developed economy status (*The World Bank*).

cash flows from operations. Accruals consist of both discretionary and non-discretionary components, and since discretionary accruals are believed to better reflect managerial judgment, most earnings quality research focuses on discretionary accruals. Sloan (1996) finds that the accrual portion of earnings is less persistent than cash flows, implying that firms with high levels of accruals have lower quality earnings. Some studies suggest that managers affect the direction and magnitude of accruals (e.g., Healy and Whalen, 1999; Dechow et al., 1996; and Richardson et al., 2003). Researchers have investigated whether companies manipulate earnings to meet analysts' consensus forecasts based on quarterly earnings. Researchers identify that firms have incentives to manipulate earnings to beat such desirable benchmarks. For instance, Degeorge et al. (1999) state that managers consider three thresholds when they report earnings: (1) to report earnings above zero (i.e. positive profits); (2) to sustain recent performance, that is, retain at least last year's earnings; and (3) to meet analysts' consensus earnings expectations. Why do companies care about meeting or beating targets? Since accounting numbers are meaningless without making comparison with some benchmarks (Ronen and Yaari, 2008).

A rising prevalence of firms playing the numbers game provide empirical results indicating that manipulators prefer to meet or narrowly beat analyst earnings forecasts rather than to beat them by a large margin (see Degeorge et al., 1999; Burgstahler and Eames, 2006; Ayers et al., 2006). It results in zero or small positive earnings surprises, because both earnings management and expectation management are costly.<sup>49</sup> When a firm fails to meet analysts' earnings expectations, investors will have doubts about management's ability and their bonuses and stock options awards may suffer. Such doubts are much less likely to arise if the analysts' earnings forecasts are just met. However, the analysts' consensus forecast is endogenous. Although executives try to report earnings to meet or exceed analysts' forecasts, analysts try to anticipate actual reported earnings (Abarbanell and Bernard, 1992). Prior evidence suggests that executives, realizing the importance of meeting or exceeding the analysts' consensus, actively try to influence analysts' expectations downward, especially

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<sup>49</sup> Manipulating earnings by shifting accruals from a future period to the current period reduces earnings in the future, making it more difficult to meet future earnings expectations. Meanwhile, managing earnings upward in current period will raise expectations about future earnings, further lowering the likelihood of meeting future earnings target. Manipulating analyst expectations is also costly; it increases stock price volatility as well as decreases the credibility of the managers with analysts. As Degeorge, Patel, and Zeckhauser (1999) and Burgstahler and Eames (2006) present, firms try to meet or beat analyst forecasts by a small margin.

when the earnings announcement date is approaching. Prior studies document that managers manipulate earnings and/or analyst expectations to avoid missing analyst earnings forecasts (for instance, DeFond and Park, 1997; Degeorge et al., 1999; Matsumoto, 2002; Burgstahler and Eames, 2006). Former SEC chairman Arthur Levitt (1998) suggests that managers are concerned about failing to meet earnings expectations set by analysts' forecasts and that 'earnings manipulation' is a tool they can use to ensure capital markets are not disappointed. Such manipulations are referred to as the 'numbers game'.

Analyst forecast research has evolved considerably since the early studies documented a bias towards optimism in forecasts and recommendations. Frankel et al. (2006) demonstrate the informativeness of analyst forecasts complements the quality of financial statements. Analysts' earnings forecasts have been found to be generally more accurate than time-series statistical models of earnings, presumably because they are able to incorporate timelier news into their forecasts (see Brown and Rozeff, 1978; Brown et al., 1987; Givoly, 1982; Bradshaw et al., 2012). Since fluctuations in stock prices are driven by information, one critical factor reflecting a capital market's maturity is transparency of information which is related to the amount and quality of information that firms are required to disclose, and the informativeness of existing accounting reporting system.

Burgstahler and Dichev (1997) demonstrate that firms are able to manage both cash flows and discretionary accruals around the profit and earnings increase benchmarks. Dechow et al. (2003) suggest that managers work harder around earnings benchmarks. Ayers et al. (2006) emphasize a probably systematic association between discretionary accrual proxies and firm performance: this is one disadvantage of studies on earnings benchmarks. This is because it will be difficult to interpret a positive association between discretionary accrual proxies and the odds of meeting or beating an earnings benchmark if they also represent firm's underlying performance. In addition, trying to meet targets solely through earnings manipulation is not rational if investors assume that earnings that barely meet or beat a target are managed. It implies that rational investors will attribute less value to the earnings which are posited to be managed; this in turn means managers have no incentives to manage earnings in the first place. Some recent evidence implies that investors do not discount earnings that are just over a target (see Burgstahler and Eames 2003; Bartov et al., 2002; Kasznik and McNichols 2002; Matsumoto 2002; Dhaliwal et al., 2002; Abarbanell and Lehavy, 2003). One explanation for

the fact that investors do not discount earnings that are just over a target is that it takes time for them to distinguish manipulators from non-manipulators.

Firth and Gift (1999) suggest a major task of financial analysts working for stockbrokers and investment firms is to forecast future earnings of listed companies. Thus, the usefulness of analysts' work is crucially subject to the forecast accuracy. There are substantial studies which have examined the accuracy, bias, and other characteristics of financial analysts' earnings forecasts based on the U.S. market. In contrast, there is little research on analyst forecast accuracy in other countries, despite the increasingly global nature of investing. Research into the accuracy of analysts' earnings forecasts is valuable for several reasons. Firstly, earnings forecasts and revisions in forecasts are major determinants of stock prices and stock price changes. Assessing the accuracy of forecasts can be used to help improve future forecasting and help investors make choices between analysts. Secondly, earnings forecasts may be used as inputs into the deliberations of regulators and policymakers. Finally, earnings forecasts are often used by researchers as a benchmark in studies on financial markets and accounting issues. Karamanou (2012) indicates that analyst forecast accuracy is anticipated to increase over time as analysts exert more effort and gain valuable forecasting experience following a market opening.

Studies on whether small profit or small loss avoidance is an indication of earnings management is motivated by the observed kink in earnings around zero. Prior literature has documented a 'kink' in the distribution of reported earnings around zero: a statistically small number of firms with small losses and a statistically unusual large number of firms with small profits (Hayn, 1995; Burgstahler and Dichev, 1997). Dechow et al. (2010) identify earnings measures such as small profits and small loss avoidance as earnings management, which is a specific dimension of earnings quality. Meeting or beating an analyst forecast is an indication of earnings management based on the 'kink' in the distribution of forecast errors: actual reported earnings minus consensus analyst forecasts (e.g., Degeorge et al., 1999).

This study aims to provide preliminary evidence on analyst forecast accuracy and further to test whether the managers utilize the discretionary accruals to meet or beat analysts' forecast in the Chinese emerging capital market. Managers are generally assumed to have inside or superior information (i.e., asymmetric information) regarding earnings. Theoretically, if the managers provide informative disclosures and make revisions frequently over the period

before earnings announcements, there will be no or little earnings surprises (i.e. analyst forecast errors). Nevertheless, the sophistication of the managers could have an impact on the quality of information disclosed; for example, having incentives to manipulate disclosed information from earnings smoothing to misrepresentation.

Logit regressions are applied in this chapter to detect whether there is a positive relationship between discretionary accrual proxies and firms' propensity to meet or beat analysts' forecast benchmarks. This study compares firm-year observations across adjacent analysts-based unexpected earnings 'bins' and examines the association between discretionary accrual measures and the probability that a firm reports a higher profit to meet or beat analyst forecast benchmark. Three available analyst forecasts: the mean, the median, and the single most current forecast are utilized in this chapter to do the robustness test. The residuals derived from the Performance Matched Discretionary Accrual Measure (Kothari et al., 2005) and Forward-looking model (Dechow et al. 2003) and Modified Jones Model (1995) as utilized as the estimates of Discretionary Accruals. Unexpected earnings/earnings surprise as defined by firm  $j$ 's year  $t$  actual earnings per share<sup>50</sup> minus the single-most recent analyst forecast or consensus mean (median) analyst forecast provided prior to the earnings announcement. This research assigns firms to 'analysts-based earnings surprise' bins based on the firm's unexpected earnings per share (in cents). Larger earnings surprises lead to larger stock market reactions. Consistent with prior research (for example, Degeorge et al. 1999; Payne and Thomas 2003; and Phillips et al. 2003),  $EarningsSurprise_{jt}$  is rounded to the nearest cent. Each just-beat and just-miss bin has a width of 0.01, and each firm-year observation appears once in a just-beat group and once in a just-miss group. According to Dechow et al. (1995), Guay et al. (1996) and Kasznik (1999) and McNichols (2000), one disadvantage of this study is that the discretionary accruals proxies employed for testing earnings management may capture non-discretionary accruals.

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<sup>50</sup> Basic EPS: Basic EPS is calculated by dividing profit or loss attributable to ordinary equity holders of the parent entity (the numerator) by the weighted average number of ordinary shares outstanding (the denominator) during the period. (IAS 33.10<sup>50</sup>)

Diluted EPS: Diluted EPS is calculated by adjusting the earnings and number of shares for the effects of dilutive options and other dilutive potential ordinary shares. (IAS 33.31) The effects of anti-dilutive potential ordinary shares are ignored in calculating diluted EPS. (IAS 33.41)

The earnings numerators (profit or loss from continuing operations and net profit or loss) used for the calculation should be after deducting all expenses including taxes, minority interests, and preference dividends. (IAS 33.12)

### **4.1.1. The development of China's securities analyst industry**

The capital market is an information-driven open market. High-quality information is the premise of capital resource allocation and particularly important for the Chinese stock market. It is determined by the structure and characteristics of the investors in mainland China. As the information users, Chinese investors have the following characteristics: (1) a large proportion of retail investors on investor distribution; (2) most retail investors have lack of investment experience; every year there is a large number of new investors access to the stock market; (3) investors have limited access to acquire information<sup>51</sup> (Liping Song, General Manager of Shenzhen Stock Exchange, 2009). Song (2008) suggests at the awarding ceremony of the 6th New Fortune Best Analyst, that the securities analyst industry is becoming more normative. However, with the advancement of the current economy and a deeper market reform, the securities analyst industry is encountering new demands and challenges. A growing number of innovative small and medium sized enterprises (SMEs<sup>52</sup>) with new business modes and new economies are accessing the stock market in China. These enterprises have differences in assets, operations and managements from those of traditional enterprises. The transformations of economic setup and the construction of a multi-layered capital market also create new challenges.

In 2005 there were 73 securities firms with about 700 analysts. According to [Table 4.1](#), by June, 2015 the number of securities firms increased to 109 firms with more than 2300 analysts. The securities analyst industry in China has a low starting point. Until 1<sup>st</sup> April 1998, the China Securities Regulatory Commission under State Council promulgated the 'Securities and Futures Investment Advisory Management Provisional Regulations'. According to the provisional regulations, securities consulting professionals are able to engage in securities and futures advisory activities after being recognized by the China Securities Regulatory Commission. It symbolizes the birth of a securities analyst industry with a clear definition and identification in mainland China. In December 2002, Securities Analysts Committee was established in Beijing under Securities Association of China. The Committee's main duties include: enhancing self-regulation of securities analysts and investment advisers; researching and establishing relevant self-regulatory rules and practice standards; boosting the level of

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<sup>51</sup> <http://www.szse.cn/main/aboutus/bsyw/39740455.shtml>

<sup>52</sup> The small and medium enterprises (SMEs) in China have achieved rapid and sustainable growth in the past two decades. Such growth has increasingly contributed to China's economic development. (Liu, 2008, National Development and Reform Commission)

practice of securities analysts and investment advisers; facilitating exchanges among securities analysts and investment advisers and reporting their opinions and suggestions, protecting their lawful rights and interests and aiding their career development (Securities Association of China). Securities analysts are required to follow the principles of independence, objectivity, fairness, prudence, professionalism and integrity. (Securities analysts Professional Code of Conduct<sup>53</sup>, September, 2012)

**Table 4.1 The development of China's securities analyst industry**

Up to June 2015	Number of Securities Companies	Securities Qualified Practitioner	Number of Securities Analysts	Percentage of Securities Analysts
Total	109	259212	2391	0.92%

(Source: Securities Association of China<sup>54</sup>)

'*New Fortune Best Securities Analyst*', sponsored by New Fortune Magazine, is China's first indigenous market analysts' rankings since 2003. Under the principle of 'openness, fairness and justice' and with its extensive influence, *New Fortune Best Securities Analyst* activity has been widely accepted by the market. However, the overall quality of securities analysts' expertise and standard-ability is controversial in China. Hu (2005) compares analysts' research reports in China and the United States via selecting three big securities companies respectively (Merrill Lynch, US Bancorp and Wedbush Morgan Securities versus Shenyin Wanguo, Guangda Securities and Shanghai Securities). His findings show that domestic analysts neither provide detailed calculation methods nor explain the data source used to make predictions in their research reports: it impairs the reports' reliability and affect decision making. However, US counterparts elaborate on the selection of forecasting model and sample data in their reports.

#### **4.1.2. Contribution and Frame Structure**

This research makes potential contributions in several aspects. Firstly, it improves upon previous studies by considering firms' earnings management with respect to analysts' forecasts based on the Chinese emerging capital market. It will provide both theoretical and

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<sup>53</sup> [http://www.sac.net.cn/flgz/zlgz/201207/t20120703\\_43727.html](http://www.sac.net.cn/flgz/zlgz/201207/t20120703_43727.html)

<sup>54</sup> <http://person.sac.net.cn/pages/registration/sac-publicity-report.html>

practical implications for accounting standards setters in China. Secondly, detecting earnings management from the analysts' perspective, this analysis also contributes to earnings management research by empirically investigating managers' use of their reporting discretion to 'meet or beat' analysts' forecasts. It provides a better understanding of the properties of analysts' forecasts (e.g., analyst forecast accuracy) by modelling firms' earnings management practices and analysts' response to them. Finally, some evidence shows a relation between discretionary accruals and meeting or beating analyst forecasts, and firms managing earnings upward or downward to meet consensus forecasts; this poses a challenge to researchers attempting to link the two activities. This study investigates the competing explanations for the positive associations between discretionary accrual proxies and firms' propensity to beat earnings benchmarks.

The remainder of this chapter proceeds as follows. Section 4.2 explains the theoretical framework for this empirical chapter. Section 4.3 reviews the literature related to earnings quality. Section 4.4 makes hypotheses development. Section 4.5 explains the research methodology applied in this analysis. Section 4.6 describes the sample selection. Section 4.7 presents the descriptive statistics and empirical results. Section 4.8 reports the robustness test results. Section 4.9 summarizes and concludes.

## **4.2. Theoretical Framework**

Gleason and Mills (2008) indicate that beating external targets is an indication of earnings management, supporting evidence that consistently meeting targets are important. Some studies on target beating are probably attributable to the presumed assumption of market or analyst efficiency (e.g. Abarbanell and Lehavy, 2003; Bartov et al., 2002; Bhojraj et al., 2009; Burgstahler and Eames, 2003). In an efficient market, stock prices are posited to reflect the best (most precise) information available at any point in time. Disclosure studies presume that, even in an efficient capital market, managers have superior information to outside investors on their firms' expected future performance. A mechanism to reduce agency problems is the board of directors, whose role is to monitor and discipline management on behalf of external shareholders. Kawakatsu and Morey (1999) investigates the relationship between financial liberalization and the Efficient Markets Hypothesis and find little evidence that deregulation improves the efficiency of the markets. If the stock market is efficient in anticipating analysts' rational behavior, the market should adjust for the skewness-induced bias in analyst forecasts.



### 4.2.1. Analyst Forecast Efficiency

Financial analysts as information intermediaries engage in private information production to reveal any manager misuse of firm resources, and mitigate agency problems (information asymmetry) between corporate insiders and outside shareholders (Brennan and Hughes, 1991; Brennan and Subrahmanyam, 1995; Bushman and Smith, 2001; Easley et al., 1998; Healy and Palepu, 2001; Houston et al., 2006). Financial analysts have long been considered to make sophisticated and unbiased judgements, to incorporate all publicly available (firm-specific, industry, financial and market) information and to be well informed about the arrival of any new information. They are presumed to be rational experts who forecast future earnings and make recommendations on an unbiased basis; they are considered to be less likely to misunderstand the implications of financial information than naïve investors. Prior literature on financial analysts refers to '*Analyst Forecast Inefficiency*' as forecasts that fail to accurately incorporate new information on a timely basis and/or that are biased (often described as irrational or suboptimal). Easterwood and Nutt (1999) emphasize that analysts' rational behavior hypothesizes that the analysts immediately and fully incorporate public information into their forecasts without bias. Several studies document that analysts (1) make biased forecasts and (2) tend to misinterpret new information. It has been evidenced that analysts generally produce upwardly biased forecasts (Fried and Givoly, 1982; O'Brien, 1988; Butler and Lang, 1991; Brous, 1992; Brous and Kini, 1993; Francis and Philbrick, 1993; Kang et al., 1994; and Dreman and Berry, 1995). Analysts are supposed to systematically underreact to bad news (Lys and Sohn, 1990; Abarbanell, 1991; Abarbanell and Bernard, 1992; Ali et al., 1992; Elliot et al., 1995; and Teoh and Wong, 1997). However, DeBondt and Thaler (1990) and Brown (1993) conclude that analysts systematically overreact to good news. Whether analysts systematically underreact or overreact depends on the nature of the earnings information they receive. However, neither under-reaction nor over-reaction is consistent with rational forecasts and an efficient market for expert information.

Analysts' under-reaction to bad news or overreaction to good news implies that analysts are systematically optimistic when they consider the implications of new information. Specifically speaking, analysts appear to overreact (underreact) to good (bad) news in prior year earnings, which is consistent with incentive-based explanations of analyst optimism. They do not fully recognize transitory working capital accruals and thus do not make corresponding adjustment for earnings forecast. Easterwood and Nutt (1999) explain two

reasons for analysts to exhibit systematically optimistic interpretations. Firstly, the sell-side analysts are generally employed by brokerage and investment banking firms and have economic incentives to promote the purchase of stocks, rather than to produce statistically optimal forecasts (supported by Schipper, 1991; Pratt, 1993; Womack, 1996; and Carleton, Chen, and Steiner, 1998 and the references therein). Secondly, analysts derive part of their expertise from the close relationship with the top management of the firms they follow, allowing access to more inside information. This access might be diminished if analysts did not give a favorable recommendation. In some cases, there is also a possibility for analysts to be pessimistic about the future of the firms. However, it is less likely that the consensus forecast would be pessimistic because analysts do not have motivations to behave in this manner.

Generally speaking, the more experienced the analysts are, the more efficient is their use of historical earnings and accuracy (Mikhail et al., 2003). Under the *Analyst Efficiency Hypothesis*, analysts are deemed as unbiased and qualified predictors of future expected earnings. The variation in their forecast accuracy reflects attributes of earnings that are related to Earnings Quality. Francis et al. (2004) summarize the evidence on analysts' incentives to make accurate and unbiased forecasts. Analyst forecast error (referring to earnings surprise or unexpected earnings here) is measured as the difference between reported actual EPS and analysts' forecast EPS. This measure introduces behavioral influences in at least two forms. Firstly, it contains the impact of analysts' self-selection biases, cognitive biases, and their incentives for optimism. Previous studies have documented optimistic bias in earnings forecasts by security analysts. Secondly, it contains the effects of management 'guidance' to analysts (see Bartov et al. 2002). Both influences are expected to affect forecast errors, but do not necessarily affect the quality of information contained in the earnings number itself. However, management manipulations of earnings to affect analyst forecast errors may influence the quality of the information in earnings.

The aggregated forecast errors are regarded as a function of aggregated items such as the general level of analysts' ability in that country, the unexpected macro-economic events affecting corporate profits in general, and the country's capital market transparency. Emerging markets also display differences in the characteristics of analyst forecasts. Chang et al. (2000) found that analyst forecast accuracy differs remarkably among countries. The

market transparency is reflected in the general level of private incentives to voluntarily disclose information, the rigor of its regulatory requirements, and the integrity of its accounting standard. They are in support of the role of transparency in affecting the analysts' ability to make forecasts. Error decreased with a higher mean number of analysts, increased analyst activity, increased accounting disclosure, and lower variability of returns, and when an English-style legal system existed. Analyst following (a determinant of accuracy) increased with firm size, capital market development, and the quality of accounting standards. These country-specific measures explained a large part of the variation in the accuracy and extent of analyst activity among countries. The variation in analyst following and performance do not appear to be entirely a function of country development. Firth and Giff (1999) find that accuracy is generally greater in more mature markets, and that composite and financial risks are more significant determinants of accuracy than firm size and analyst following. Hope (2003a, 2003b) investigates how differences in regulations across countries affect the information environment and the characteristics of analysts' forecasts. They report that across countries, a strong enforcement of accounting standards is associated with improved forecast accuracy, and the level of disclosure about accounting policies is inversely related to forecast errors and dispersion. Barniv et al. (2005) conclude that consistent with legal and financial reporting environments influencing analyst activities, superior analysts maintain superiority in common-law countries, but not in civil-law countries.

#### **4.2.1.1. Analysts' influence on managers**

A question investors may have concern about is whether the analysts' forecasts have value, i.e., the informativeness of analyst forecasts. Prior literature shows that the informativeness of the analysts' forecasts increases monotonically as forecasts are closer to year end. The analysts' earnings forecast are considered to be informative if their forecast is more accurate than the random walk forecast.

In a contemporaneous study, Matsumoto (1999) investigates temporal changes in the earnings surprise distribution. She employs the consensus analyst forecast as the measure of estimates rather than the single most recent forecast. Brown (2001) confirms that managers of growth firms are relatively more likely than managers of value firms to report profits that meet or beat analyst forecasts, and, when they do, they are more likely to report profits that create small positive surprises.

Burgstahler and Dichev (1997) observe that managers attempt to avoid reporting losses and earnings decreases. On their basis, Degeorge, Patel, and Zeckhauser (1999) further propose that managers try to prevent reporting earnings that miss analyst forecasts. Both of them find that avoiding losses is more prevalent than avoiding earnings decreases, and Degeorge et al. conclude that meeting or beating analyst forecasts is less widespread than avoiding losses or earnings decreases. Burgstahler and Eames (1998) confirm that managers tend to report earnings that meet or beat analyst forecasts consistent with the findings of Levitt (1998) and Vickers (1999) and Turner (2000). Analysts always interact directly with management during earnings release conference calls, when they are given the opportunity to enquire about a firm's accounting report. Corporate executives, usually the chief financial officers (CFO), have to face and answer those questions. In the question and answer session, analysts often ask a wide range of questions related to the company's financial statements.

Moreover, analysts have other channels to express their concerns about firms, such as through their research reports to their clients, through making recommendations and forecasts to the investors, and through their appearance in the public media, including newspapers and television, often reaching an extensive audience. Analysts also play an active role in corporate fraud detection as gatekeepers. Dyck, Morse, and Zingales (2006) find that the most efficient external whistle-blowers for discovery of corporate fraud are analysts. Because of analysts' active participation in the information distribution process, managers' financial reporting decisions can be influenced by the intensity of analyst coverage.

#### **4.2.2. Management's Motivations to Meet or Beat Analyst Forecast**

Academic studies find consistent evidence of managers taking actions to avoid negative 'bad news' earnings surprises (Payne and Robb 2000; Brown 2001; Burgstahler and Eames 2001). Because managers are likely to be concerned that a negative earnings surprise will lead to significantly lower stock prices and will adversely affect their performance evaluation. Furthermore, Skinner and Sloan (2001) submit that the stock market response to negative earnings surprises tends to be large and asymmetric, particularly for growth stocks, indicating a high cost to missing analysts' expectations. More importantly, Ball et al. (2003) contend that in China managers face pressure from the government. This affects their political future and is thus likely to be a greater influence than either compensation incentives or market forces, as is the case documented in the US literature; for instance, in China, management

may be promoted and transferred to government/large groups, appointed as officials or awarded political titles if their or their firm's performance is excellent. These findings support that managers acquire benefits from manipulating earnings to meet or beat analyst forecasts. In the case of earnings management, managers must implicitly believe that users are neither able to detect earnings management nor do find it cost effective to do so.

Matsumoto (2002) detects what factors have influence on managers to take actions to avoid negative earnings surprises in her study and explores the mechanisms through which managers achieve this goal. Her findings exhibit that firms with the following characteristics are more likely to meet or beat analysts' forecasts: (1) higher transient institutional ownership; (2) greater reliance on implicit claims with their stakeholders; and (3) greater value-relevance of reported earnings. Managers generally manipulate earnings upward if unmanaged earnings fail to reach analysts' expectations. Managers have strong incentives to avoid negative earnings surprises because such negative surprises often lead to negative price revisions (Brown et al. 1987) and overall negative impact on the publicity for the firm.

Managers place greater emphasis on meeting or exceeding analysts' expectations, hence, both reported earnings and earnings forecasts are manipulated to achieve this aim: several studies provide the evidence (see Burgstahler and Dichev, 1997; Matsumoto, 1999; Richardson, Teoh and Wysocki, 1999; Burgstahler and Eames, 2001; and Brown, 2001). The pressure imposed on management to meet analysts' earnings expectation is sometimes explained as the single most important cause of earnings management. As stated by Barth et al. (1999), the market rewards companies that consistently report positive earnings surprise and penalize those which miss analysts' forecasts. Furthermore, managers of growth firms are expected to be more likely than those of value firms to meet or beat analyst estimates. The growth firms (market value of common equity/book value of common equity=large ratios) are more likely than value firms (market value of common equity/book value of common equity=small ratios) to experience adverse valuation consequences when their managers report earnings that miss analysts' estimates (Dreman and Berry, 1995; Fox, 1997; Skinner and Sloan, 1998).

McDonald and McGough (1999) and *The Economist* (1999) suggest that managers from growth firms have relatively more compensation in stock and options which are closely bundled with the firms' stock price. A significant portion of managerial compensation in the

U.S. is in the form of stock-based option. Prior literature shows that short-run stock prices are sensitive to meeting analyst forecasts (Bartov, Givoly and Hayn, 2002; Kasznik and McNichols, 2002; Skinner and Sloan, 2002). Such positive investor reaction to just meeting the analyst forecast creates a favorable environment for managers who attempt to sell their shares. From the trading incentives, McVay et al. (2006) predict that management's upcoming insider sales help explain the earnings discontinuity around the analyst forecast threshold. However, as Ding *et al.* (2007) and Tricker (2009) argued, the CSRC simply allowed listed companies to remunerate managers with stock options from 2005.

### **4.3. Empirical Literature Review**

Earnings convey important and valuable information for investment decisions. Degeorge et al. introduce behavioral thresholds for earnings management. They identify earnings management attempting to exceed three vital thresholds: (1) report positive profits, (2) sustain recent performance, and (3) meet analysts' expectations. Burgstahler and Dichev (1997) examine the manipulation behavior of earnings to meet the first two thresholds. Payne and Robb (1997) show that managers use discretionary accrual to align earnings with analysts' expectations. Prior research investigating firms' reported earnings with respect to analysts' forecasts generally assume that analysts' earnings forecasts are one of the benchmarks by which the market evaluates the underlying performance of a firm. Many researchers assert that firms manipulate earnings and/or guide analysts' expectations to meet or slightly exceed analysts' earnings forecasts (Burgstahler and Eames, 1998; Brown, 1997; Degeorge et al., 1999; Dechow et al., 2000; Matsumoto, 2002).

Gleason and Mills (2008) propose that target beating is an indication of earnings management based on their findings. In other words, they deem meeting or beating a target as a censored measure of earnings management. However, there are contradictory results in other studies. For instance, Bhojraj et al. (2009) argue, based on their findings that the market does not view target beating as evidence of earnings management.<sup>55</sup> Bartov et al. (2002) also document a higher contemporaneous quarterly return associated with meeting or beating analyst forecasts, implying that the market consider target beating as an outcome of efficient

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<sup>55</sup> Bhojraj et al. (2009) find that firms that just beat analyst forecasts by using accruals or by cutting discretionary expenses experience short-term stock price improvement. Assuming that the accruals adjustments undermine earnings quality, and assuming market efficiency, these results suggest that the market does not view target beating as evidence of earnings management.

contracting rather than an evidence of an erosion in decision usefulness. In addition, Abarbanell and Lehavy (2003) and Burgstahler and Eames (2003) demonstrate that analysts do not detect earnings management to meet or beat targets, although Libby et al. (2008) suggest an alternative explanation for these findings is that the complicated incentives of analysts lead them to neglect earnings management .

There is a negative relationship between the accruals and subsequent earnings forecast errors, indicating that analysts are not aware that large accruals in prior periods will result in predictable declines in earnings in subsequent periods (Bradshaw, Richardson and Sloan, 2001). Yet some studies conclude that when analysts can rationally anticipate accruals management, they appropriately incorporate the implications of accruals into their forecasts (Kim and Schroeder, 1990; Coles et al., 2006; Burgstahler and Eames, 2003). Previous studies compare different discretionary accrual proxies for firms that just beat and just miss earnings benchmarks to examine whether firms take advantage of discretionary accruals to meet or beat earnings benchmarks (e.g., Dechow et al. 2003; Phillips et al. 2003; Ayers et al., 2006). It shows that the observed asymmetric distribution of earnings surprises results not only from firms' earnings management behavior, but also from analysts' anticipation of such behavior. Brown (2001) and Matsumoto (2001) find a disproportionate number of cases in recent years where earnings per share (EPS) are slightly (by a few cents) above analysts' forecasts. They further find an increase over the years in the number of cases where actual EPS are exactly on target. Degeorge et al. (1999) ascertain that the MBE (meet or beat expectations) strategy is one of three performance thresholds that management tries to meet. Evidence provided by other studies suggests that both earnings manipulation and expectations management are used to accomplish this objective. Burgstahler and Eames (1998) provide evidence that downward revisions of forecasts occur more frequently when the revision would be sufficient to avoid a negative earnings surprise, suggesting managers' influence on analysts' forecast revisions. Such influence is also supported by Skinner (1997), Kasznik and Lev (1995), Francis et al. (1994) and Soffer et al. (2000), who show that companies increasingly tend to warn investors about forthcoming unfavorable earnings.

The evidence that earnings manipulated by managers when firms just meet or beat consensus analyst forecast is more persuasive. This stream of literature discusses three different perspectives: (1) the first perspective describes the mechanisms that firms adopt to boost

earnings that just meet or beat a target. For instance, firms make accounting choices such as managing tax expense (Dhaliwal et al., 2004), managing the classification of items within the income statement (McVay, 2006), and managing the creation and reversal of restructuring charge accruals (Moehrl, 2002). Ayers et al. (2006) find a correlation between discretionary accruals and meeting or beating analyst forecasts and reporting small earnings increases. In order to meet or beat analyst forecasts, firms are likely to engage in real activities such as repurchasing shares (Bens et al., 2003; Hribar et al., 2006), selling fixed assets or marketable securities (Herrmann et al., 2003); (2) the second perspective detects the relation between target beating and firms' equity market incentives to meet or beat a benchmark which includes the ownership structure of the firm (Matsumoto, 2002; Beatty et al., 2002) or managers' compensation/stock ownership (Cheng and Warfield, 2005; McVay et al., 2006). Abarbanell and Lehavy (2003) indirectly link earnings management activities to equity market incentives; and (3) the third perspective is from the association between target beating and firms' opportunities to meet or beat a target. Frankel et al. (2002) document a correlation between target beating and lower audit quality. Brown and Pinello (2007) demonstrate that small negative analyst forecast errors (negative earnings surprises) are more prevalent in unaudited interim quarters, since there is a stronger kink in the distribution of earnings around the consensus analyst forecast in interim quarters in which the earnings management is greater. This finding contradicts with the previous evidence of a stronger kink around zero in the fourth quarter supported by Kerstein and Rai (2007) and Jacob and Jorgensen (2007), who argue that the small profits represent earnings management in the kink around zero.

Researchers have reported a 'kink' in the distribution of reported earnings around zero: a statistically small number of firms with slight losses and an unusually large number of firms with small profits (e.g. Hayn, 1995; Burgstahler and Dichev, 1997). A common but controversial explanation is that firms with unmanaged earnings just less than zero (i.e., firms with small losses) intentionally manage earnings upward to report a small profit. Therefore, earnings measures such as small profits and small loss avoidance have been identified as an indication of earnings management, and as one specific dimension of earnings quality. Similarly, researchers have proposed that meeting or beating an analyst forecast is an indication of earnings management based on the 'kink' in the distribution of forecast errors: reported earnings less consensus analyst forecasts ( Degeorge et al., 1999). Burgstahler and Eames (1998) observe that there are a disproportionately large number of small positive



earnings surprises and a disproportionately small number of negative earnings surprises. That is, more firms beat analysts' forecasts than fail to do so. It implies that earnings management that responds to analysts' forecasts leads to an asymmetric distribution of earnings surprises. Earnings surprise depends upon two variables, actual reported earnings and analysts' forecasts. Some evidence shows that firms probably manage earnings upward or downward to meet consensus forecasts. Matsumoto (2002) suggest that the analyst forecast target can be managed (forecast guidance). Researchers rely on the assumption that, in the absence of earnings management and/or forecasts guidance, the distribution of earnings surprises would be symmetrical around zero. Degeorge et al. (1999) document that firms will manage earnings downwards to report small positive earnings surprises rather than large ones (analyst forecast error) if actual earnings sufficiently exceed forecasts. Meanwhile, they evidence that avoiding loss or avoiding earnings decreases is more important than avoiding negative earnings surprises for managers.

However, Brown and Caylor (2004) have different opinions and show that avoiding negative earnings surprises has become the primary goal for managers since the mid-1990s. Large negative earnings surprises will give rise to a dramatic decline in stock price (see Skinner and Sloan, 1999). Brown (1997) and Barua et al. (2003) argue that firms will manage earnings downwards even further in order to build up accounting reserves when they find analysts' forecasts benchmark are unattainable. Evidence from recent empirical work provides that managers prefer to take actions to avoid negative earnings surprises. Burgstahler and Eames (2001) find a larger-than-expected proportion (assuming a smooth distribution) of zero and small positive forecast errors in the distribution of analysts' forecast errors. Brown (2001) presents an overall increase in the percent of zero and positive forecast errors over time. Richardson et al. (1999) also find evidence of a temporal decline in the extent to which actual earnings fall short of analysts' expectations. Francis and Philbrick (1993) and Lin and McNichols (1998) focused on incentives for analysts to bias their forecasts.

Previous studies on whether small profits and loss avoidance indicate earnings management provide mixed evidence. Dechow et al. (2003) find that discretionary accruals are similar in both the small profit group and the small loss group on the basis of a large sample. Beaver et al. (2003) find that small profits are associated with earnings management via discretionary loss reserves at P&C insurers. Phillips et al. (2003) discover that deferred tax expense is

useful in detecting earnings management to meet benchmarks such as avoiding losses. Small positive profits associated with greater incentives for earnings management in the fourth quarter documented by Kerstein and Rai (2007) and Jacob and Jorgensen (2007) and with greater opportunities to manipulate earnings due to low audit effort evidenced by Caramanis and Lennox (2008). As suggested in Ayers et al. (2006), they find a significant positive association between discretionary accrual proxies and beating the benchmark. They draw the conclusion that there is an intensified relation regarding earnings management around the analysts' forecast benchmark.

Prior literature support that firms manipulate earnings in order to beat expectations. Bannister and Newman (1996) find that firms that may fail to beat analysts' forecasts participate in income-increasing earnings management more than those whose earnings exceed the expectations. Abarbanell and Lehavy (2003) observe that firms which received 'buy' recommendations are more likely to manage reported earnings to meet analysts' expectations. Kasznik (1999) shows that firms manage earnings in order not to disappoint the market given expectations formed in response to earlier voluntary disclosures. McVay (2006) shows that firms meet analysts' expectations by expense shifting. The tendency to narrowly beat forecasts is more prominent for growth firms. Growth stocks are punished more severely, relative to value stocks, for the same amount of negative earnings surprise, providing incentives for growth firm managers to avoid negative earnings surprises (Brown, 2001; Skinner and Sloan, 2002). Through detecting the market response to positive and negative forecast errors, Lopez and Rees (2002) investigate whether the capital market rewards and punishes firms for meeting or not meeting analysts' earnings forecasts. Kasznik and McNichols (2001) document that annual market adjusted returns are significantly greater for firms that meet analysts' expectations and find a market premium to meeting or beating analysts' forecasts and a differential response coefficient between firms that beat or miss analysts' forecasts. Consistently, Bartov et al. (2001) demonstrate that investors reward those firms where earnings meet or exceed analysts' forecasts with a higher quarterly return.

#### **4.3.1. Analysts' Forecasts: Proxy for Market Expectations**

Time-series statistical models have been used frequently in previous research to provide earnings expectations. Evidence consistent with earnings management to meet earnings forecast is provided by Kasznik (1999) and Payne and Robb (1997). It is argued that financial

analysts' forecasts may have an advantage over a time-series prediction model for three main reasons: firstly, analysts have an edge with broader information which incorporates non-accounting information on the firm such as industry trend and firm sales and production figures, general macroeconomic information, and other analysts' forecasts, as well as the historical series of earnings. Analysts presumably utilize all publicly available (and occasionally unpublished) information while the time-series prediction model exclusively relies on past earnings. Secondly, the time-series model as a proxy for market expectations is further impaired by the underlying assumptions that the earnings generating processes are stationary with stable parameters and that the model characteristics are applicable to all firms. Finally, financial analysts have a timing advantage in that they can use more recent information about the firm's earnings which only becomes widely available after the fiscal year end. Late forecasts incorporating a greater amount of autonomous information are somewhat better than early forecasts.

Analysts' forecasts of earnings are currently widely used in accounting and finance research as proxies for the unobservable market expectations (i.e. proxies for a future expected earnings). The stock market inclines to rely on analyst forecasts to a greater extent than time series model predictions indicating that analyst forecasts exhibit more desirable quality than time-series model predictions (Fried and Givoly, 1982; Hopwood and McKeown, 1990). Previous studies compare the analysts' forecasts of earnings with that predicted by time-series models and document that analysts' forecasts provide better proxies for market expectations of both revenues and expenses. For instance, Givoly and Lakonishok (1979) demonstrate that financial analysts' forecasts have more information content. They show that prediction errors of analysts are more closely associated with security price movements, hence argue that analysts' forecasts provide a better surrogate for market expectations than forecasts generated by time-series models. Consistently, O' Brien (1988) proposes that financial analysts' forecast of earnings is a better surrogate for market expectations. Moreover, properties of analyst forecasts have been found to be associated with market and firm attributes. For example, analyst following and accuracy (dispersion) have been positively (negatively) associated with the quality of the firm's information environment (Abarbanell et al., 1995; Healy et al., 1999; Hope, 2003; Lang and Lundholm, 1996). Analyst coverage and accuracy have been positively associated with firm value (Lang et al., 2003).

Some evidence suggests that superior analysts exert a greater impact on prices, supporting Brown's (1993) conjecture that forecast accuracy and the association with stock prices should be considered as two sides of the same coin. Mikhail et al. (1997) demonstrate forecast accuracy increases with firm-specific experience, and market reactions are more closely related with the forecast errors of analysts with firm-specific experience. Analysts make cash flows estimates to fill in an information gap when earnings have low quality or decision-relevance. Hong et al. (2000) state that forecast accuracy is directly associated with the likelihood of promotion, particularly for less experienced analysts. The quality (i.e., accuracy) of the earnings forecasted by analysts is described as a function of the following not mutually exclusive factors. They are: (1) the amount of information from voluntary disclosure and from involuntary disclosure issued by regulatory agencies, stock exchanges, and the accounting professionals, and (2) the general macro-economic impact, unexpected events affecting the firm, and the ability of the analysts. The latter factor contains the ability to acquire new information at low cost (i.e., from networking) to gain access to the managers, to process information efficiently and quickly, and to utilize the resources of the brokerage firms. Brokerage firms can take advantage of their economies of scale in acquiring macro-economic information and their economies of scope in sharing relevant information with analysts in the same firm. Jacob et al. (1999) find that analyst forecast accuracy is affected by innate ability, company assignments, brokerage affiliation, and industry specialization. There appears to be little benefit from experience. Gilson et al. (2000) find that, for focused companies, analysts that specialize by industry issue more precise forecasts than non-specialist analysts. Lang and Lundholm (1993) find that firms with more informative disclosures have a larger analyst following, less dispersion in analyst forecasts, and less volatility in forecast revisions.

On the other hand, Ang and Ma (1999) find that analyst forecast earnings for Chinese stocks are less accurate than for Hong Kong listed firms. They provide evidence based on the inability of the sophisticated financial analysts from some leading international and regional brokerage firms to make earnings forecast accurately for Chinese stocks comparable to that for Hong Kong stocks. It implies the analysts often miss their forecasts and by a large degree in China. Their results show analysts' forecast of Chinese listed firms' earnings, over the entire period, incline to overestimate (be optimistic), i.e. analysts' forecasts exceed reported earnings on average. One factor resulting in the difference in firms' earnings may be the

transparency between different stock markets. Earnings forecasts are generally optimistic indicating that analysts try to maintain relationships with managers when recommendations are negative (Francis and Philbrick, 1993; Dugar and Nathan, 1995). One of the most widely held beliefs among accounting and finance academics is that incentives and/or cognitive biases induce analysts to produce generally optimistic forecasts (see, e.g., reviews by Brown, 1993 and Kothari, 2001). This view is repeatedly reinforced when studies that employ analysts' forecasts as a measure of expected earnings present descriptive statistics and refer casually to negative mean forecast errors as evidence of the purportedly 'well-documented' phenomenon of optimism in analyst forecasts. The belief is even more common among regulators (see, e.g., Becker, 2001) and the business press (see, e.g., Taylor, 2002).

Prior literature has employed three common methods to measure analysts' earnings forecasts: (1) the mean of analyst forecasts adopted by Barefield and Comiskey (1975) and Fried and Givoly (1982); (2) a single forecast from value line used by Brown and Rozeff (1978) and Brown et al. (1987a, b); and (3) the median of analyst forecasts employed by Elton et al. (1981) and Brown et al. (1984). The fundamental difference between the most recent forecast as the consensus analyst forecast and either the mean or the median is that the former is constructed using the forecast date, while the latter two are not. O' Brien (1988) contrasts these three proxies for analyst forecasts and concludes that the most recent earnings forecasts are slightly superior to either the consensus mean or median forecasts in accuracy. It supports evidence that forecast dates are more relevant for determining accuracy than individual error, suggesting that forecast timeliness is a characteristic for distinguishing better forecasts.

#### **4.4. Hypotheses Development**

Meeting or beating expectations is regarded as the phenomenon of firms announcing earnings that either meet or beat the consensus analysts' forecasts of earnings (Ronen and Yaari, 2008). The importance of meeting or beating expectations is that earnings are the statistics predicted by analysts with sophistication and financial expertise (DeFond and Hung, 2003). Hence, successfully meeting analysts' forecast or failing to beat them can attract a lot of attentions in the press and from investors. The reason why firms attempt to meet or beat expectations is that the market rewards this behavior. The stock market provide a significant stock price premium (penalty) for meeting or beating (missing) analysts' earnings forecasts, after controlling for the magnitude of forecast error (Barth et al., 1999; Bartov et al., 2002;

Kaszniak and McNichols, 2002; Lopez and Rees, 2002; Bhojraj et al., 2003; Chen, 2003; Das and Zhang, 2003; and Brown et al., 2006). Matsumoto (2002) and Williams (2006) express that firms are under the capital-market pressure to meet or beat expectations in order to sustain their stock prices. The range of earnings surprise over which the market's reaction is the strongest lies in the vicinity of one cent (referring to as 'Fen' in RMB) (+1 cent of MBE firms and -1 cent for firms that missed the forecast). Meeting or Beating Expectations is considered to be another case of managing earnings in order to beat a threshold which is the consensus analysts' forecast.

The 'Information perspective' provided by Healy and Palepu (1993) discuss the existence of information asymmetry between management and other stakeholders, with management having superior information. When information asymmetry is high, such as the phenomenon in China, stakeholders and investors do not have sufficient resources or access to relevant information to monitor manager's behavior, which leads to the practice of earnings management (Schipper, 1989; Warfield et al., 1995). Bhattacharya et al (2012) propose that poor earnings quality represents imprecise information about firms' future cash flows. Furthermore, prior research present that poor earnings quality is associated with higher information asymmetry from the perspective of indirect links. Financial analysts as information intermediaries engage in private information production to reveal any manager misuse of firm resources, and mitigate agency problems (information asymmetry) between corporate insiders and outside shareholders (Brennan and Hughes, 1991; Brennan and Subrahmanyam, 1995; Bushman and Smith, 2001; Easley et al., 1998; Healy and Palepu, 2001; Houston et al., 2006). Under the *Analyst Efficiency Hypothesis*, analysts are deemed as unbiased and qualified predictors of future expected earnings, and to incorporate all publicly available (firm-specific, industry, financial and market) information and to be well informed about the arrival of any new information. They are presumed to be rational experts who forecast future earnings and make recommendations on an unbiased basis; they are considered to be less likely to misunderstand the implications of financial information than naïve investors. The variation in their forecast accuracy reflects attributes of earnings that are related to Earnings Quality.

Management judgment with respect to determining earnings is often associated with discretionary accruals. Managers may use these discretionary accrual choices in an

opportunistic manner (perhaps to increase their own compensation or conceal poor performance) or they may use this discretion to improve the informational value of earnings (perhaps to communicate to investors the long-term performance of the firm). In any case, discretionary accruals are often used as a measure of earnings quality (e.g., Dechow and Dichev, 2002; Francis et al., 2004). In the context of testing market's efficiency with respect to earnings management, the tests are joint tests of the discretionary accrual models and market efficiency.

Are analysts' forecasts biased? Do analysts underreact or overreact to information in prior realizations of economic variables? This empirical literature provides conflicting conclusions and is not converging to a definitive answer to either question. On the one hand, theories that predict optimism in forecasts are consistent with the persistent statistical finding in the literature of cross-sectional negative (i.e., bad news) mean forecast errors as well as negative intercepts from regressions of forecasts on reported earnings. On the other hand, such theories are inconsistent both with the finding that median forecast errors are most often zero and with the fact that the percentage of apparently pessimistic errors is greater than the percentage of apparently optimistic errors in the cross-section.

Abarbanell and Lehavy (2003) present statistical evidence that demonstrates how the two asymmetries in forecast error distributions can indicate analyst optimism, pessimism, or unbiasedness. For example, this study's empirical evidence explains why prior research that relies on parametric statistics always finds evidence of optimistic bias as well as apparent analyst underreaction to prior bad news for all alternative variables chosen to represent prior news. They find that extreme negative unexpected accruals included in reported earnings go hand in hand with observations in the cross-section that generate the tail asymmetry. They also observe that the middle asymmetry in distributions of forecast error is eliminated when the reported earnings component of the earnings surprise is stripped of unexpected accruals. This evidence suggests benefits to refining extant cognitive- and incentive based theories of analyst forecast bias and inefficiency so that they can account for an endogenous relation between forecast errors and manipulation of earnings reports by firms. The evidence also highlights the importance of future research into the question of whether reported earnings are, in fact, the correct benchmark for assessing analyst bias and inefficiency.

Recent evidence suggests that the incidence of earnings management is particularly pronounced when earnings fall below certain thresholds. Three thresholds have been considered in the literature: avoiding reporting a loss; reporting a growth in profits; and meeting the analysts' consensus forecast. Burgstahler and Dichev (1997) and Degeorge et al. (1999) find that there is a higher-than expected frequency of firms in the US with slightly positive reported earnings (and earnings changes) and a lower-than expected frequency of firms with slightly negative reported earnings (and earnings changes). The same pattern has been observed in the UK (Gore et al., 2002). Such discontinuities in the distributions are consistent with managers trying to beat the benchmarks in question. A key issue is how managers decide which benchmark to try to beat when the benchmarks conflict. Degeorge et al. (1999) report that there appears to be a hierarchy to the benchmarks, with firms behaving as if reporting a profit is of most importance, followed by reporting growth in earnings, with meeting analysts' forecasts mattering only if the other two thresholds have been met. Failing to meet a threshold will result in a large decline in stock price. This analysis predicts that board monitoring will constrain income-increasing earnings management when pre-managed earnings undershoot these thresholds. It conjectures that managers are most likely to engage in income-increasing earnings management when pre-managed earnings fall short of key threshold levels.

Assuming that firms intend to meet or beat market expectations, one would expect that results improve when utilizing a forecast proxy that better represents these expectations. This study improves upon previous studies by considering firms' earnings management with respect to analysts' forecasts. Analysts are hypothesized to understand these earnings management practices, and incorporate firms' expected behavior into their forecasts. Analysts account for earnings management practices by lowering the otherwise optimal forecasts. The hypothesis is that analysts are aware of firms' intentions to manage earnings so that they slightly beat forecasts or maximize positive earnings surprises, and that analysts make strategic forecasts in view of firms' anticipated behavior. Therefore, the hypothesis is developed as follows:

***H<sub>0</sub>***: Managers tend to use discretionary accruals to meet or beat analyst forecast.

***H<sub>1</sub>***: Managers do not tend to use discretionary accruals to meet or beat analyst forecast.



## 4.5. Empirical Modeling

### 4.5.1. Proxies for Discretionary Accruals

Prior research suggests that accruals have lower persistence than operating cash flows and discretionary accruals are less persistent than nondiscretionary. Based on prior literature, the residuals are derived from the Performance Matched Discretionary Accrual Measure (Kothari et al., 2005) and Forward-looking model (Dechow et al. 2003) and Modified Jones Model (1995) as the estimates of Discretionary Accruals.

#### 4.5.1.1. Performance Matched Discretionary Accrual Measure

Kothari et al. (2005) develop a performance-matching model to examine discretionary accruals by adding lagged return on assets.

$$TA_{j,t} = \beta_0 + \beta_1 \left( \frac{1}{AVG\ ASSETS} \right) + \beta_2 (\Delta SALES_{j,t} - \Delta AR) + \beta_3 PPE_{j,t} + ROA_{j,t-1} + \varepsilon_{j,t}$$

(Equation 4.1)

All the variables used here are scaled by average total assets except  $ROA_{j,t-1}$ , deflating by average total assets is meant to mitigate heteroskedasticity.

$TA_{j,t}$  (Total Accruals) = Earnings before extraordinary items – Cash flows from operations

$AVG\ ASSETS = (Assets_t + Assets_{t-1}) / 2$

$\Delta SALES_{j,t}$  = Change in Sales Revenue

$\Delta AR$  = annual change of end of fiscal year net accounts receivable

$PPE_{j,t}$  = Net Property, Plant and Equipment

$ROA_{j,t-1}$  = Lagged rate of return on assets

$\varepsilon_{j,t}$  = The residuals from the regression are the estimates of Discretionary Accruals

Kothari et al. (2005) find that having an ROA in the regression reduces discretionary accruals when they expect the null hypothesis of no earnings management to hold. Prior literature demonstrates that accruals are related to performance (McNichols and Wilson, 1988; Dechow,

Sloan, and Sweeney, 1995; Kasznik, 1999). McNichols (2000, p. 333) states that 'researchers comparing firms that differ in earnings performance or growth characteristics may well observe (or not observe) differences in estimated discretionary accruals that relate to the performance characteristics of these firms rather than their incentives to manage earnings.' Ronen and Yaari (2008) point out that performance affects the estimation of earnings management because NDA (Nondiscretionary Accruals) may be erroneously classified as DA (Discretionary Accruals) when performance is abnormal and the relationship between accruals and performance is non-linear.

One advantage of this analysis relative to performance-matched discretionary accruals (Kothari et al. 2005) is that it does not need to specify the exact nature of the correlation between discretionary accruals and performance (e.g., ROA). Relative to performance-matching, this analysis may result in more powerful tests of earnings management around earnings benchmarks as it does not generate 'noise' in the tests via the matching process. Accordingly, this method may reduce the likelihood of falsely accepting the null hypothesis of no earnings management due to low power tests.

#### **4.5.1.2. Forward-looking model**

Dechow et al. (2003) develop the forward-looking model to capture the discretionary accruals as follows (*Equation 4.2*).

$$TA_{j,t} = \alpha + \beta_1((1 + k)\Delta SALES - \Delta AR) + \beta_2 PPE + \beta_3 TA_{j,t-1} + \beta_4 GR\_SALES_{j,t+1} + \varepsilon_{j,t}$$

*(Equation 4.2)*

All variables are deflated by average total assets except GR\_SALES<sub>j,t+1</sub>

Where:

**TA<sub>j,t</sub>** (Total Accruals) = Earnings before extraordinary items – Cash flows from operations

**ΔAR** = α + kΔSALES + ε

**ΔAR** = annual change of end of fiscal year net accounts receivable

**ΔSALES<sub>j,t</sub>** = Change in Sales Revenue

**k** = is the slope coefficient from a regression of ΔAR on ΔSALES

**PPE<sub>j,t</sub>** = Net Property, Plant and Equipment

**TA<sub>j,t-1</sub>** = Lagged Total Accruals, i.e., Total Accruals<sub>t-1</sub>

**GR\_SALES<sub>j,t+1</sub>** = (SALES<sub>j,t+1</sub> – SALES<sub>j,t</sub>) / SALES<sub>j,t</sub> (i.e., growth in sales)

**ε<sub>j,t</sub>** = The residuals from the regression are the estimates of Discretionary Accruals

In this forward-looking model, Dechow et al. (2003) regress the change in accounts receivable,  $\Delta AR$ , on the change in sales,  $\Delta SALES_{j,t}$ .  $k$  measures the sensitivity of the change in nondiscretionary accounts receivable to sales revenue.  $k = 1$  if 100% of the change in accounts receivable is nondiscretionary and  $k = 0$  if all the change is discretionary.  $k$  times sales separates Non-discretionary accruals from Discretionary accruals in the accounts receivable. This adapted Jones model adds back the nondiscretionary accounts receivable,  $k\Delta SALES$ , to the change in cash sales,  $\Delta SALES - \Delta AR$ , which yields  $[\Delta SALES - \Delta AR] + k\Delta SALES = (1 + k)\Delta SALES - \Delta AR$ .

Dechow et al. (2003) find that  $k$  takes value between 0 and 0.392, with an average of 0.07 (median of 0.068), in their 637 cross-sectional regressions, obtained from all two-digit SIC Compustat firms that were not financial institutions in the 1998-2000 period.

Previous studies have suggested the value of including lagged total accruals in the regressions to enhance the accruals model's ability and the adjusted  $R^2$  (Kang and Sivaramakrishnan, 1995; Beneish, 1997; Chambers, 1999; Nwaeze, 2001): past accruals has been controlled for reversals. Dechow et al. (2003) also control for the growth in sales. They measure it as the ratio of sales in the following period to sales in the current period minus one. The NDA model this incorporates a forward-looking variable. Growth is a characteristic of firm.

McNichols (2000) reports that young firms are characterized by high growth and high normal accruals. A failure to take into account these features might lead to erroneously classifying NDA as DA. McNichols measures growth as the median of analysts' long-term earnings growth forecasts (reported by I/B/E/S) in the last month of the fiscal year. The regression of DA on the rate of returns on assets (ROA) and the growth variable yields a significant positive association between DA and growth.

#### **4.5.1.3. Modified Jones Model**

Dechow et al. (1995) present a modified Jones model. All the variables used here are scaled by average total assets.

$$TA_{j,t} = \alpha + \beta_1(\Delta SALES - \Delta AR) + \beta_2 PPE + \varepsilon_{j,t} \quad (\text{Equation 4.3})$$

Where:

$TA_{j,t}$  (Total Accruals) = Earnings before extraordinary items – Cash flows from operations

$\Delta SALES_{j,t}$  = Change in Sales Revenue

$\Delta AR$  = annual change of end of fiscal year net accounts receivable

$PPE_{j,t}$  = Net Property, Plant and Equipment

$\epsilon_{j,t}$  = The residuals from the regression are the estimates of Discretionary Accruals

One disadvantage of this study we should concern about is that the discretionary accruals proxies for earnings management may be capturing nondiscretionary accruals (Dechow et al., 1995; Guay et al., 1996; Kasznik, 1999; and McNichols, 2000).

#### 4.5.2. Proxy for Earnings Surprise

Although the quality of analyst research can be measured by several methods, this study examines one important attribute of analyst earnings forecasts: analyst forecast error/ earnings surprise (i.e. forecast accuracy). Forecast accuracy has been documented to be beneficial to capital markets. Forecast accuracy has been shown to be related to the level of firm disclosure (Lang and Lundholm, 1996), and to be positively associated with firm value (Lang et al., 2003). The disclosure quality and transparency are important to the investment decision of foreign investors (Kim and Singal, 2000). As markets open, more foreign investors enter the market, increasing the demand for better information (Karamanou, 2012). Aggarwal et al. (2005) find that US institutional investors prefer to invest in countries with high quality accounting standards. Prior US research has identified that the stock market inclines to rely more on analyst forecasts than the predictions generated by time-series models (Fried and Givoly, 1982; Hopwood and McKeown, 1990). This reflects the timing and informational advantage of analysts (Brown et al., 1987; Fried and Givoly, 1982; Hopwood and McKeown, 1990; Kross et al., 1990).

Earnings surprise/unexpected earnings are defined as firm  $j$ 's year  $t$  actual earnings per share (EPS) minus the single-most recent analyst forecast or consensus (mean/median) analyst forecast provided prior to the earnings announcement: both are available from the CSMAR database. Basic EPS is calculated by dividing profit or loss attributable to ordinary equity holders of the parent entity (the numerator) by the weighted average number of ordinary shares outstanding (the denominator) during the period (IAS 33.10<sup>56</sup>). Diluted EPS is

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<sup>56</sup> <http://www.iasplus.com/en/standards/ias/ias33>

calculated by adjusting the earnings and number of shares for the effects of dilutive options and other dilutive potential ordinary shares (IAS 33.31). The effects of anti-dilutive potential ordinary shares are ignored in calculating diluted EPS (IAS 33.41). The earnings numerators (profit or loss from continuing operations and net profit or loss) used for the calculation should be after deducting all expenses including taxes, minority interests, and preference dividends (IAS 33.12).

Negative forecast errors reflect analyst optimism, and positive forecast errors reflect pessimism. Both the single-most recent analyst forecast and consensus analyst forecast are employed as the analyst forecast benchmark. O'Brien (1988) and Brown (1991) suggest that the single-most recent analyst forecast is more accurate in predicting actual earnings than the consensus mean forecast. Likewise, Brown and Kim (1991) find that the single-most recent analyst forecast more accurately reflects the market's earnings expectation than the consensus mean forecast. Assuming that firms intend to meet or beat market expectations, using a more current forecast proxy should provide a more powerful test of whether firms use discretionary accruals to meet or beat analyst forecasts. Recent research suggests that firms 'walk down' analyst forecasts during the sample period (Richardson et al. 2004).

According to the CSMAR Database, analysts' earnings forecasts do not include unusual or non-recurring charges, so the reported earnings per share (EPS) exclude the extraordinary items. The literature commonly normalizes EPS by deflators such as price per share or assets per share in an attempt to homogenize the distribution from which the different observations are drawn. However, because EPS is measured (and reported and forecast) rounded to the closest penny, spurious patterns can arise in the distribution of such normalized EPS. This problem appears to have been overlooked previously (Degeorge et al., 1999).

### **4.5.3. Logit Analyses across Adjacent Unexpected Earnings Group**

$$EM_{jt} = \alpha + \beta_1 DisAccruals_{jt} + \beta_2 \Delta CashFlows_{jt} + \beta_i \sum_i IND_{jt} + \varepsilon_{jt}$$

*(Equation 4.4)*

Where:

$\Delta CashFlows_{jt}$  = the change in Cash flows from Operations from year t-1 to year t, scaled by average total assets.

Sample firms are assigned to 'analysts-based unexpected earnings' bins based on the firm's unexpected earnings per share (in cents). Consistent with prior research (e.g., Degeorge et al. 1999; Payne and Thomas 2003; Phillips et al. 2003), in this research  $EarningsSurprise_{jt}$  is rounded to the nearest penny. Each just-beat and just-miss bin has a width of 0.01, and each firm-year observation appears once in a just-beat group and once in a just-miss group. Based on Ayers et al. (2006), this research investigates 19 *pseudo* targets in these analyses consisting of firms with earnings surprise between negative ten cents per share and positive ten cents per share. Meanwhile,  $EM_{jt}$  is redefined to equal 1 if  $EarningsSurprise_{jt}$  equals X cents per share, and 0 if  $EarningsSurprise_{jt}$  equals X minus one cent per share. X refers to the unexpected earnings target, and X equals 0 for the actual analysts' forecast benchmark. In addition, the performance variable is controlled on the basis of Phillips et al. (2003) by utilizing the annual change of cash flows as  $\Delta CashFlows$  in the analysis. Following prior literature, this analysis applies Logit regressions to detect whether there is a positive relationship between discretionary accrual proxies and beating analysts' forecast benchmarks.

#### 4.6. Sample Selection

The sample data focus on firms listed in the A-share stock market, which are required to report under Chinese GAAP.<sup>57</sup> B shares, H shares, overseas shares, and firms that are dual-listed/cross-listed are excluded because they are subject to either different accounting standards or different listing regulations. The reason why the sample concentrates on firms in the A-shares market only is because the small sample sizes in either the B shares market or H shares market do not allow for a reasonably powerful test. In addition, Ang and Ma (1999) find the forecast errors are found to be related to type of listing (e.g., H shares versus B shares), and size of the firm, but have little or no relation to the number of analysts forecasting the firm.

Meanwhile, financial institutions, insurance and banking firms are excluded from the samples because their accounting standards and earnings properties are different from the rest of firms and thus non-comparable. Furthermore, the regulated firms are likely to face different earnings management incentives than non-regulated firms. In order to keep the consistency

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<sup>57</sup> A shares market is open to domestic investors. B shares market is open to foreign investors and is traded in foreign currencies. H shares are firms listed in the Hong Kong stock exchange. Firms listed as B shares are required to report under international accounting standards. Firms listed as H shares are required to report under Hong Kong GAAP.

and better examine the time effect on firm-specific earnings quality, the sample firms do not include the new entry and delisted firms between 2008 and 2013. It implies that each sample firm in the sample has six consecutive years of observations. Hence, the panel data is strongly balanced. The financial data are collected from both the CCER and CSMAR database. To mitigate the effect of extreme observations, the outliers are winsorized in the top or bottom one percentile (e.g. the modified Jones model abnormal accruals, Performance Matched Discretionary Accrual and forward-looking model abnormal accruals greater than 100 percent (in absolute value) of lagged total assets, details see DeFond and Subramanyam 1998; Dechow et al. 2003; Phillips et al. 2003). Finally, each firm-year observation must have sufficient information available to calculate the requisite variables in the Logit regression.

The data about analysts' earnings forecasts and reported actual earnings are acquired from CSMAR database. All per share data are adjusted for splits and stock dividends using the CSMAR adjustment factors. There are 626 listed firms in the final sample. The time span ranges from 2008 to 2013, because there is insufficient data or missing information on analysts' forecast before 2008 in the CSMAR database. The securities analyst industry in China has a low starting point. For instance, until December 2002, Securities Analysts Committee was established in Beijing under Securities Association of China. Therefore, after deducting missing values, in total there are 3130 firm-year observations between the fiscal year of 2008 and 2013.

## 4.7. Descriptive Statistics and Empirical Results

### 4.7.1. Variable Definitions

$EarningsSurprise_{jt}$  = the unexpected earnings (firm  $j$ 's year  $t$  actual earnings per share minus the single-most recent analyst forecast or consensus (median) analyst forecast provided prior to the earnings announcement both available from the CSMAR database; and  $EarningsSurprise_{jt}$  is rounded to the nearest cent (Fen in RMB);

$EM_{jt} = 1$  if  $EarningsSurprise_{jt}$  equals  $X$  cents (Fen in RMB) per share and 0 if  $EarningsSurprise_{jt}$  equals  $X$  less one cent per share.  $X$  refers to the unexpected earnings target, and  $X$  equals zero for the *actual* analysts' forecast benchmark;

Total Accruals = Earnings before extraordinary items – Cash flows from operations, scaled by average total assets;

Discretionary Accruals = The residuals from the regression are the estimates of Discretionary Accruals in the modified Jones model (1995) and Forward-looking model (Dechow et al. 2003) and Performance Matched Discretionary Accrual Measure (Kothari et al., 2005). Discretionary Accruals Model is estimated cross-sectionally by year and industry;

$\Delta CashFlows$  = Annual change of cash flows from operations;

$\sum_j IND_{jt} = 1$  (0) if firm  $j$  is (is not) in industry  $j$  in year  $t$ , based on CSRC Industry Code.

## 4.7.2. Descriptive Statistics and Results

### 4.7.2.1. Analysts' Forecast Benchmark Analyses

Table 4.2 Panel A reports the univariate analyses for the analysts' forecast benchmark. Panel A indicates that *Performance Matched Discretionary Accruals*, *Forward-looking Discretionary Accruals*, and *Modified Jones Discretionary Accruals* are significantly smaller (more positive or less negative) in the *actual* just-beat bin relative to the *actual* just-miss bin.<sup>58</sup> Consistent with Ayers et al. (2006), the results of this analysis for analysts' forecast benchmark analyses, show little positive correlation between the discretionary accruals derived from three different measures and the earnings surprise bins. The Spearman correlation coefficients in Table 4.2 Panel C for *Performance Matched Discretionary Accruals*, *Forward-looking Discretionary Accruals*, and *Modified Jones Discretionary Accruals* and  $\Delta CashFlows$  are 0.0154, 0.0198, 0.0155, and 0.0549\* ( $p < 0.10$ ), respectively. Table 4.2 Panel C presents that none of the correlations are statistically significant, except the change of cash flows. Likewise, Panel C reports that none of three discretionary accrual proxies have a significant positive correlation with *Earnings Surprise*.

The results in Table 4.3 Logit Analyses across Adjacent Unexpected Earnings Group provide little evidence of a positive association between discretionary accrual measures and beating pseudo targets derived from analysts-based earnings surprise through the comparisons of the coefficients for Performance-matched Discretionary Accruals, Forward-looking Discretionary Accruals, and Modified Jones Discretionary Accruals. In addition, this study finds no relations between  $\Delta CashFlows$  and beating the analysts' forecast benchmark.

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<sup>58</sup> Using the the single most recent analyst forecast exhibits the smallest bias from CSMAR database as the analyst forecast benchmark, prior research (Dechow et al. 2000; Phillips et al. 2003) reports no significant differences in univariate comparisons of *Total Accruals*, *Performance Matched Discretionary Accruals*, *Forward-looking Discretionary Accruals*, and *Modified Jones Discretionary Accruals* for just-beat and just-miss firms around the *actual* analysts' forecast benchmark. This study finds similar results to prior research when the single most recent analyst forecast from CSMAR is employed as the analysts' forecast benchmark.



Panel A

Table 4.2 Analysts' Forecast Benchmark Analyses

Earnings Surprise	Performance Matched Dis. Accruals	Forward-looking Dis. Accruals	Modified Jones Dis. Accruals	$\Delta cfo$
$ES_{it} = -0.09$	0.0459	0.0484	0.0436	-0.0836
$ES_{it} = -0.08$	-0.0407	-0.0422	-0.0412	0.0224
$ES_{it} = -0.07$	-0.0325	-0.0256	-0.0325	0.0194
$ES_{it} = -0.06$	-0.0143	0.0001	-0.0120	0.0251
$ES_{it} = -0.05$	-0.0026	0.0013	-0.0018	-0.0230
$ES_{it} = -0.04$	0.0017	-0.0018	0.0022	-0.0092
$ES_{it} = -0.03$	0.0048	0.0034	0.0058	-0.0617
$ES_{it} = -0.02$	0.0058	0.0070	0.0066	-0.0028
$ES_{it} = -0.01$	0.0087	0.0075	0.0092	-0.0003
$ES_{it} = 0.00$	0.0032	0.0007	0.0030	0.0130
$ES_{it} = 0.01$	0.0135	0.0129	0.0135	0.0333
$ES_{it} = 0.02$	-0.0014	-0.0078	-0.0031	0.0999
$ES_{it} = 0.03$	-0.0029	-0.0013	-0.0019	0.1851
$ES_{it} = 0.04$	-0.0081	-0.0099	-0.0097	0.0529
$ES_{it} = 0.05$	0.0174	0.0168	0.0152	0.0923
$ES_{it} = 0.06$	0.0319	0.0306	0.0337	0.0021
$ES_{it} = 0.07$				
$ES_{it} = 0.08$	0.0319	0.0242	0.0303	0.1074
$ES_{it} = 0.09$	0.1169	0.1133	0.1154	0.0364

Notes:  $ES_{it}$  = the unexpected earnings surprise (actual earnings per share minus the single-most recent analyst forecast provided prior to the earnings announcement both available from CSMAR database)

$ES_{it} = -0.01$  actual just miss bin;  $ES_{it} = 0$  actual just meet bin;  $ES_{it} = 0.01$  actual just beat bin

**Table 4.2 Analysts' Forecast Benchmark Analyses (Continued)**

Panel B: Descriptive Statistics

Variables	Obs.	Mean (Median)	SD (Variance)	Skewness (Kurtosis)	25% (75%)	Min. (Max.)
	3014					
<i>Consensus Median</i>		0.4711 (0.3700)	0.4267 (0.1820)	2.4041 (13.9233)	0.1950 (0.6270)	-0.0300 (2.0500)
<i>Single most recent</i>		0.4205 (0.3105)	0.4378 (0.1916)	2.6434 (16.6185)	0.1500 (0.5500)	-0.2000 (2.1300)
<i>Consensus Mean</i>		0.4890 (0.3850)	0.4301 (0.1850)	2.2483 (12.4463)	0.2073 (0.6460)	-0.0200 (2.0571)

Table 4.2 Panel B provides some descriptive statistics for the sample related to consensus analyst forecast collected from CSMAR database. There are 3014 firm- and year- specific observations in total during 2008 and 2013 after removing the missing values. Table 4.2 Panel C demonstrates the Spearman Correlation between the proxies for earnings management (discretionary accruals absolute values) and the unexpected earnings surprise based on the single most recent analyst forecast. To provide more descriptive evidence on the behaviour of analysts' forecasts, Table 4.5 presents the distribution statistics for unexpected earnings (i.e. analyst forecast error), suggesting majority companies are centred on the just-missing bin group in terms of the large number of frequency.

**Table 4.2 Analysts' Forecast Benchmark Analyses (Continued)**

Panel C: Spearman Correlations

	Earning Surprise	Performance Matched abs Dis. Accruals	Forward-looking abs Dis. Accruals	Modified Jones abs Dis. Accrual	$\Delta cfo$
Earning Surprise	1.0000				
Performance Matched Dis. Accruals	0.0154	1.0000			
Forward-looking Dis. Accruals	0.0198	0.9642*	1.0000		
Modified Jones Dis. Accruals	0.0155	0.9918*	0.9613*	1.0000	
$\Delta cfo$	0.0549*	-0.0003	0.0016	0.0034	1.0000

Notes: \* $p < 0.10$

Table 4.3 Logit Analyses across Adjacent Unexpected Earnings Group

			Performance-Matched Dis. Accrual			Forward-looking Dis. Accruals			Modified Jones Dis. Accruals		
<i>Just-Beat</i>	<i>Just-Miss</i>	<i>N</i>	e_1	detcfo	pseudo $R^2$	e_2	detcfo	pseudo $R^2$	e_3	detcfo	pseudo $R^2$
$ES_{it} = -0.09$	$ES_{it} = -0.10$	58	5.970**	-1.682	0.156	5.219*	-1.818	0.138	5.543**	1.708	0.145
$ES_{it} = -0.08$	$ES_{it} = -0.09$	73	-5.201*	1.468	0.153	-4.897	1.501	0.154	-4.758*	1.634	0.147
$ES_{it} = -0.07$	$ES_{it} = -0.08$	87	0.549	0.163	0.001	1.425	0.663	0.006	0.584	0.184	0.001
$ES_{it} = -0.06$	$ES_{it} = -0.07$	127	-0.100	-1.607	0.019	0.147	-1.439	0.020	-0.049	-1.585	0.019
$ES_{it} = -0.05$	$ES_{it} = -0.06$	195	0.777	0.295	0.003	0.173	0.070	0.000	0.668	0.266	0.002
$ES_{it} = -0.04$	$ES_{it} = -0.05$	290	0.702	0.235	0.002	-0.132	0.087	0.000	0.686	0.237	0.002
$ES_{it} = -0.03$	$ES_{it} = -0.04$	396	0.060	-0.163	0.002	0.335	-0.095	0.002	0.092	-0.160	0.002
$ES_{it} = -0.02$	$ES_{it} = -0.03$	1050	-0.002	0.057	0.000	0.536	0.152	0.001	-0.013	0.055	0.000
$ES_{it} = -0.01$	$ES_{it} = -0.02$	1363	0.368	0.049	0.000	0.192	0.119	0.000	0.330	0.046	0.000
$ES_{it} = 0.00$	$ES_{it} = -0.01$	928	-0.391	0.034	0.001	-0.636	-0.078	0.001	-0.443	0.030	0.001
$ES_{it} = 0.01$	$ES_{it} = 0.00$	263	1.107	0.465	0.006	1.749	0.916	0.012	1.135	0.472	0.006
$ES_{it} = 0.02$	$ES_{it} = 0.01$	92	0.543	1.665*	0.028	0.398	1.698	0.031	0.420	1.620	0.028
$ES_{it} = 0.03$	$ES_{it} = 0.02$	51	0.315	0.475	0.011	0.721	0.497	0.013	0.411	0.483	0.011
$ES_{it} = 0.04$	$ES_{it} = 0.03$	27	-0.890	-0.741	0.025	-1.201	-0.762	0.027	-0.953	-0.746	0.026
$ES_{it} = 0.05$	$ES_{it} = 0.04$	20	2.214	0.997	0.027	2.179	0.475	0.017	2.146	1.001	0.026
$ES_{it} = 0.06$	$ES_{it} = 0.05$	13	0.175	-3.258	0.076	-0.058	-2.958	0.042	0.631	-3.165	0.077
$ES_{it} = 0.07$	$ES_{it} = 0.06$	3									
$ES_{it} = 0.08$	$ES_{it} = 0.07$	2									
$ES_{it} = 0.09$	$ES_{it} = 0.08$	4									
Industry Effect			Yes			Yes			Yes		

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

#### 4.7.2.2. Analyst Forecast Error (Earnings Surprise)

For each firm year, analyst forecast error is defined as the difference between the actual reported earnings per share (EPS) and the analyst consensus (median) forecast, as well as the single most recent analyst forecast scaled by the closing stock price at the end of last year, and is expressed in percentage (see Brown and Caylor's analysis in 2005). There might be concerns about the results which rely on the particular measure of analysts' forecasts adopted. Hence, the single most recent analyst forecast and analyst consensus forecast are utilized as the alternatives method to test the magnitude of analyst forecast error for robustness.

$$FERR_{jt} = \frac{Actual\ EPS_{jt} - Analyst\ Forecast_{jt}}{Price_{jt-1}} * 100$$

(Equation 4.5)

$$AbsoluteFERR_{jt} = \frac{| Actual\ EPS_{jt} - Analyst\ Forecast_{jt} |}{Price_{jt-1}} * 100$$

(Equation 4.6)

Where:

**AbsoluteFERR<sub>jt</sub>** is the absolute value of the forecast error measured as the difference between actual earnings and the mean (median) analyst forecast deflated by beginning price;

**Actual EPS<sub>jt</sub>** represents actual earnings per share;

**Analyst Forecast<sub>jt</sub>** represents the consensus analyst forecast for firm j and year t;

**Price<sub>jt-1</sub>** is the beginning of the year stock price.

Firth and Gift (1999) find that accuracy is generally greater in more mature markets, and that composite and financial risks are more significant determinants of accuracy than firm size and analyst following. Hope (2003a, 2003b) investigates how differences in regulations across countries affect the information environment and the characteristics of analysts' forecasts. They report that across countries, a strong enforcement of accounting standards is associated with improved forecast accuracy, and the level of disclosure about accounting policies is inversely related to forecast errors and dispersion. Barniv et al. (2005) conclude that consistent with legal and financial reporting environments influencing analyst activities, superior analysts maintain superiority in common-law countries, but not in civil-law countries.

**Table 4.4 Analyst Forecast Error (Earnings Surprise)**

<b>Analyst Forecast Error (%)</b>	<b>Mean (Median)</b>	<b>SD (Variance)</b>	<b>Skewness (Kurtosis)</b>	<b>25% (75%)</b>	<b>Minimum (Maximum)</b>
Actual EPS- Analyst Median	-2.4791 (-1.0813)	6.4177 (41.1876)	-7.7417 (115.4098)	-3.0608 (-0.1699)	-27.3869 (5.2147)
Actual EPS-Analyst Single Most Recent	-1.8814 (-0.6409)	6.1857 (38.2631)	-8.4642 (134.9171)	-2.3350 (0.0528)	-24.3681 (5.7053)
Actual EPS-Analyst Mean	-2.7341 (-1.2887)	6.5022 (42.2783)	-7.4877 (109.2256)	-3.3758 (-0.2722)	-26.4501 (4.9351)

*Notes: Analyst mean = the mean of the available analysts' forecasts;  
 Analyst median = the median of the available analysts' forecasts;  
 Analyst single most recent = the single most recent forecast from an analyst.  
 Negative bias implies overestimates of earnings per share forecasted by analysts.*

Table 4.4 reports that analyst forecast errors under three alternative calculations are predominantly negative (i.e., an optimistic bias results when analyst forecast earnings is subtracted from the actual earnings). The results indicate that both the mean and median value of unexpected earnings remain below zero. The mean (median) value of analyst forecast error based on mean consensus analyst forecast is -2.7341% (-1.2887%) of the stock price, compared with the mean (median) value -2.4791% (-1.0813) and -1.8814% (-0.6409) based on median consensus forecasts and single most recent forecast respectively. Generally, forecast errors exhibit statistically significant negative bias in previous literature. Negative bias corresponds to overestimates of earnings per share (EPS). It consists with some conventional wisdom that analysts prefer optimistic predictions and 'buy' recommendations in order to maintain good relations with firms' management. The median consensus analyst forecasts are replaced by the single most recent forecasts and consensus mean forecasts which generate essentially the same results.

Figure 4.1 shows the result of comparing the three analyst consensus measures; the single most recent analyst forecast (here, es22 referring to as Actual EPS minus Analyst Single Most Recent) exhibits the smallest bias with smallest standard deviation (variance) in these findings, indistinguishable from zero. Abarbanell and Lehavy (2000) suppose that a better matching of forecasts with actual earnings should increase the frequency of 'perfect forecasts' and small surprises, and reduce the frequency of extreme surprises. This study's research findings are consistent with O'Brien (1988) and Brown (1991) and Ayers (2006) and Kim's

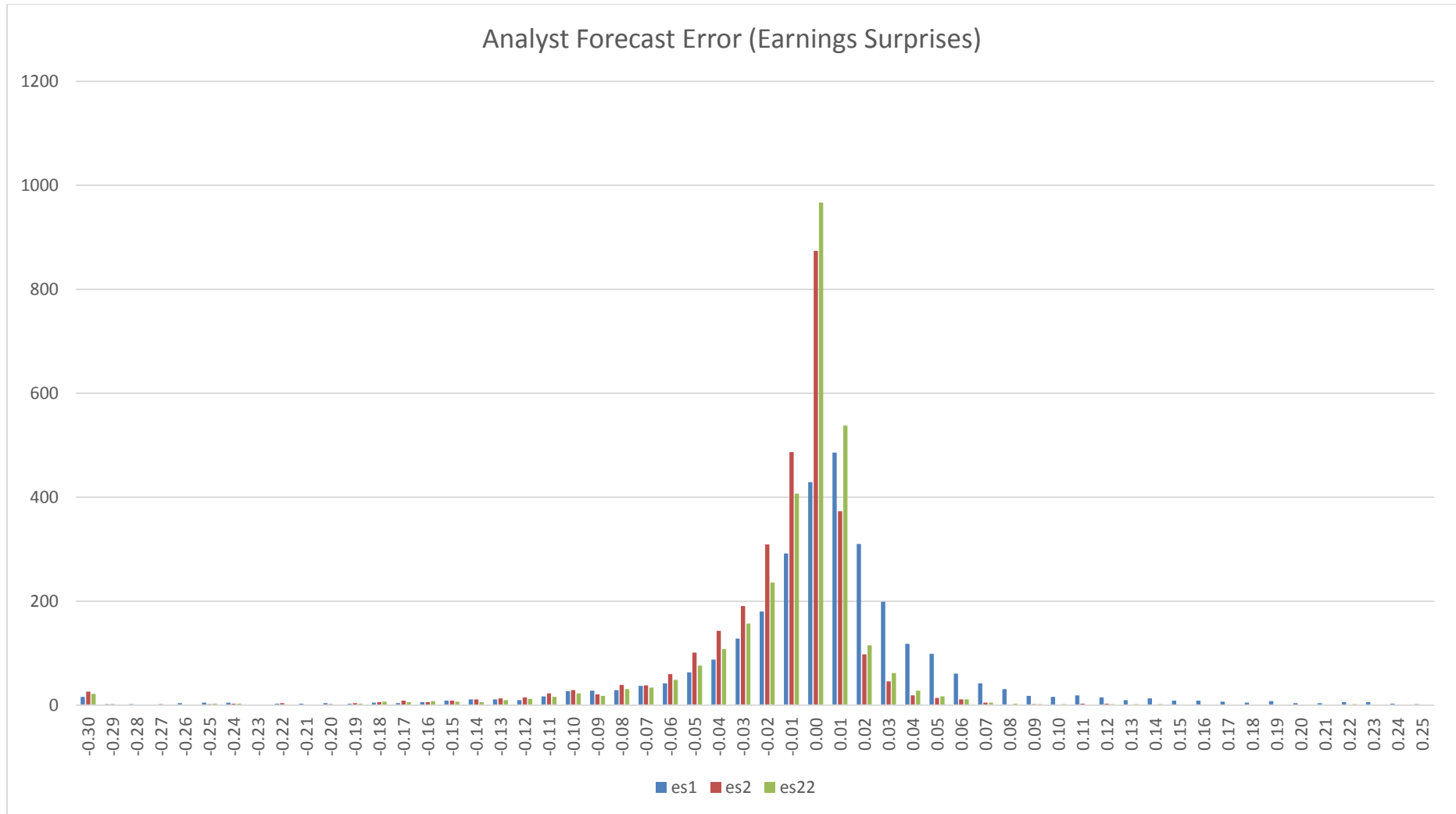
(1991) results. They argue that the single-most recent analyst forecast is more accurate in predicting actual earnings than the consensus mean or median forecast, since the former more accurately reflects the market's earnings expectation than the latter. When firms intend to meet or beat market expectations, a more current forecast proxy is assumed to provide a more powerful test of whether firms use discretionary accruals to meet or beat analyst forecasts. As per prior literature, the single most recent analyst forecast as one of proxies for market expectations has several advantages: (1) it is relatively more accurate than the consensus (e.g., O'Brien, 1988; Brown, 1991); (2) earnings surprises based on it are more highly associated with stock prices rather than the consensus (Brown and Kim, 1991); (3) it better represents the definition of earnings surprise used by researchers who want a timely expectation before earnings announcement. However, with the increasingly competitive nature of the earnings forecasting business, it will pose a potential validity threat to the study's results because the consensus estimates intend to provide a timelier measure of analyst estimates over time.

#### **4.7.2.3. Analyst Optimistic Forecast**

Previous studies provide evidence that accounting conservatism results in noisy, biased, and inefficient earnings forecasts (e.g. Mensah et al., 2004). Helbok and Walker (2004) argue that analyst forecasts are optimistically biased under conditionally conservative accounting practices. Because analysts fail to efficiently incorporate the implications of conservative treatment of economic news into their forecasts until that news becomes available (Pae and Thornton, 2010). There is evidence showing that top management prefers analysts' optimistic forecasts (see Francis and Philbrick, 1993; Das et al., 1998; and Lim, 2001). Consistent with the results exhibited as that analyst forecasts are optimistically biased (analyst forecast above actual earnings) in previous studies (see Brown et al., 1985; Stickel, 1990; Abarbanell, 1991; Dreman and Berry, 1995; and Chopra, 1998), this study obtain the same findings.

The incentives for analysts are rewarded for providing information that generates trading volume and investment banking fees for their brokerage houses. Thus, analysts have incentives to make optimistic forecasts and recommendations when their brokerage house has been hired to underwrite or is being considered to underwrite a new securities issue (see Lin and McNichols, 1998; Dechow et al., 2000).

Figure 4.1 Analyst Forecast Error Comparison



O'Brien et al. (2005) examine the recommendations of analysts following 4,640 firms that issued new equity between 1994 and 2001 period. They find that affiliated analysts treat good and bad news asymmetrically: They respond promptly to good news but prefer not to issue bad news. Analysts overreact (underreact) to earnings with positive (negative) information. Furthermore, each brokerage house has its own list of securities from which it wishes to generate a large volume of trade. Thus, there is additional pressure on analysts from their employers to issue recommendations that shed favourable light on these preferred stocks. Several studies examine the pressure on analysts to issue favourable reports (see Francis and Philbrick, 1993; Dugar and Nathan, 1996; Lin and McNichols, 1998; Francis and Soffer, 1997; Michaely and Womack, 1999; Dechow et al., 2000; Lim, 2001; Chan et al., 2003; O'Brien et al., 2005; and Agrawal and Chen, 2006). This asymmetry in the reaction explains analysts' observable over-optimistic forecasts. Analysts' compromise under pressure from management suggests that analysts are weak gatekeepers. For example, analysts rarely warn the public of impending revelations of pernicious earnings opportunistic behavior.

Consistent with Bartholdy and Feng (2013), the findings in this study show that both earnings forecasts and stock recommendations are generally biased upwards in Chinese local securities firms. They show the forecast error in the Bear market from September, 2002 to October, 2005 was larger than that in the Bull market between November, 2005 and October, 2007. The sample period in this analysis for ERC model is during the year of 2008 and 2013, which is deemed as part of the Bear market. It will be a critical factor that has an impact on the analyst forecast accuracy. Firth and Gift (1999) analyse the significant differences in forecasting accuracies across different nations and explain a multitude of potential reasons for the differences. One potential dimension they investigated is the financial risk. Other reasons for the significant differences between countries in their analysis include disclosure regulations, accounting rules, tax regimes, corporate governance structures, and national economic policies and conditions.

#### **4.8. Robustness Test**

Prior literature provides an alternative measure of earnings management through examining the discontinuity of earnings distributions around earnings benchmarks. Ronen and Yaari (2008) refer to it as the distributional approach. Burgstahler and Dichev (1997) and Degeorge, Patel and Zeckhauser (1999) discover that there is a much higher percentage of firms that



slightly meet or beat earnings targets than those that slightly miss earnings targets, indicating the existence of earnings management. Previous studies that employ this approach show that there is a kink in the distribution function of the earnings management object around the benchmark. Yu (2008) points out both the advantage and disadvantage of a distribution approach. A distribution approach relies on fewer assumptions and can capture earnings management not only through accounting manipulations but also via real transactions. Its limitation is that it does not provide firm-level variations. From an earnings management perspective, researchers assume that unmanaged earnings are a draw from the normal distribution. Hence, earnings management is established if the distribution of earnings of all firms deviates from the normal distribution (Hayn, 1995; Burgstahler and Dichev, 1997a; Kang, 2005). [Table 4.5](#) reflects that Analyst Forecast Error is predominately distributed around the just-miss analyst forecast benchmark group (i.e., 11<sup>th</sup> bin group). [Figure 4.1](#) Distribution of Analyst Forecast Error Comparison illustrates the identical result.

Analyst forecast (expectation) is used as one earnings benchmark; managers try to avoid earnings disappointment (loss/negative earnings) through manipulating reported earnings. The sample is divided into 23 bin groups according to the magnitude of earnings surprise and count the number of firms that fall into different bins. The study also makes a comparison with the discontinuity around analyst expectations, measured by the consensus (median) analyst forecast and single most recent analyst forecast and consensus (mean) analyst forecast. The bin on the immediate right-hand side of earnings targets contains firms that either narrowly meet or beat earnings targets. The bin on the immediate left hand side of earnings targets contains firms that narrowly fail to meet earnings targets. Among all the observations, there are averagely 56% more firms in the left-hand bin than in the right-hand bin. This result is contrary to the results of Burgstahler and Dichev (1997) and Degeorge, Patel and Zeckhauser (1999) on the discontinuity of earnings distributions in general. They report that 36% more firms in the right-hand bin than in the left-hand bin. An alternative explanation for the difference in the discontinuity of earnings distribution is that it is the outcome of manipulations of analyst expectation, not the outcome of direct manipulation of earnings. In practice, consensus analyst forecasts for earnings could be easily found from many sources, such as major finance websites. Hence, earnings targets for companies with a large number of following analysts are salient and explicit. One concern is that the quality of consensus by only a few analysts is not as good as that by a greater number of analysts. Thus, the forecast

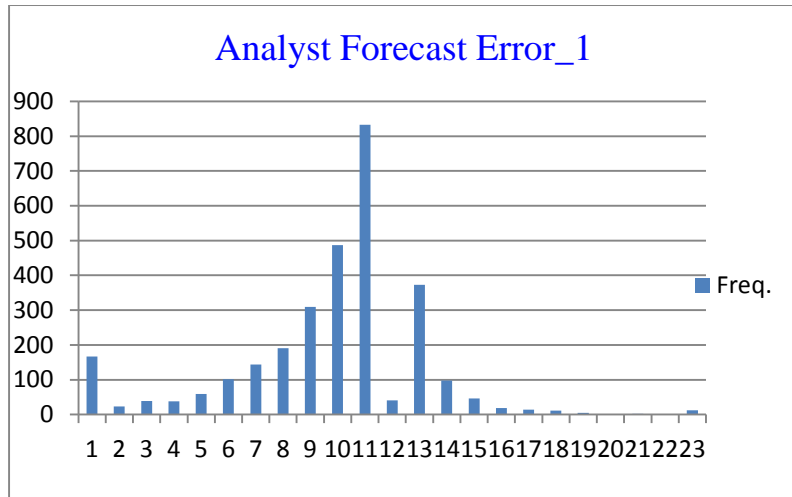
precision could be affected by the number of following analysts (Yu, 2008), which is not discussed in this study.

**Table 4.5 Distribution of Analyst Forecast Error**

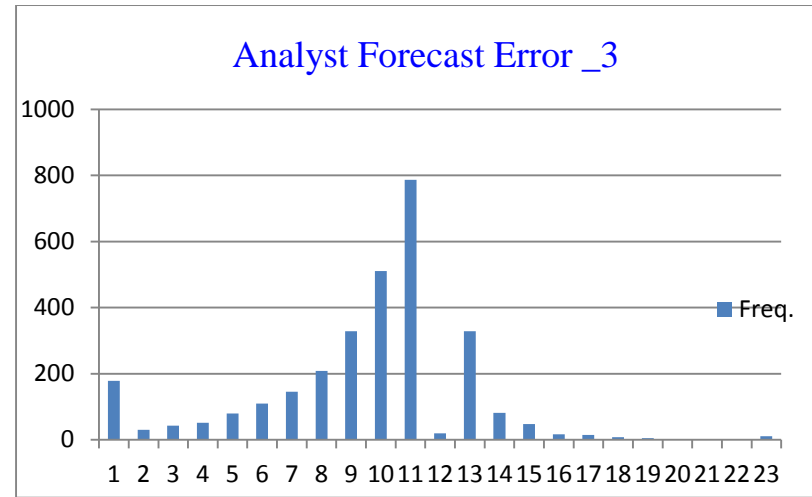
bin group	ES_median		ES_most recent		ES_mean	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
1	167	5.54	133	4.41	178	5.91
2	23	0.76	18	0.60	30	1.00
3	39	1.29	31	1.03	43	1.43
4	38	1.26	34	1.13	52	1.73
5	59	1.96	48	1.59	80	2.65
6	101	3.35	76	2.52	110	3.65
7	144	4.78	109	3.62	146	4.84
8	191	6.34	157	5.21	208	6.90
9	309	10.25	236	7.83	329	10.92
10	487	16.16	407	13.50	511	16.95
11	833	27.64	899	29.83	787	26.11
12	41	1.36	68	2.26	20	0.66
13	373	12.38	538	17.85	329	10.92
14	98	3.25	115	3.82	82	2.72
15	46	1.53	62	2.06	48	1.59
16	19	0.63	28	0.93	17	0.56
17	14	0.46	17	0.56	15	0.5
18	11	0.36	11	0.36	8	0.27
19	5	0.17	5	0.17	5	0.17
20	1	0.03	3	0.10	1	0.03
21	2	0.07	2	0.07	2	0.07
22	1	0.03	2	0.07	2	0.07
23	12	0.40	15	0.50	11	0.36
Total	3,014	100	3,014	100	3,014	100

*Notes: 11<sup>th</sup> bin group here refers to as the just-miss analyst forecast benchmark group  
12<sup>th</sup> bin group here refers to as the just-meet analyst forecast benchmark group  
13<sup>th</sup> bin group here refers to as the just-beat analyst forecast benchmark group*

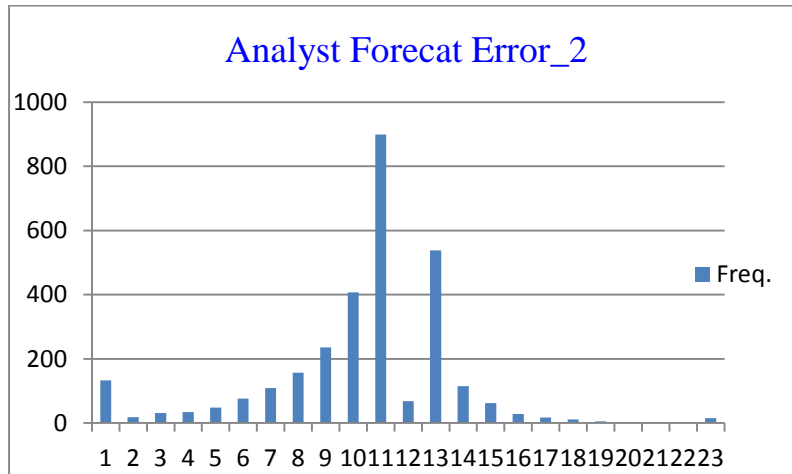
Consistent with previous studies, [Figure 4.2](#) shows the distribution of analyst forecast error centered on the left hand side. It reflects asymmetric distribution of earnings surprise results (analyst optimistic bias), not only from earnings management behavior, but also from analysts' anticipation of such behavior.



Note: Analyst Forecast Error = Actual EPS-Consensus Analyst Forecast (Median)



Note: Analyst Forecast Error = Actual EPS-Analyst Forecast Mean value



Note: Analyst Forecast Error = Actual EPS-Single Most Recent Analyst Forecast

Figure 4.2 Distribution of Analyst Forecast Error Comparison

## 4.9. Summary

This study makes several contributions. It improves previous studies by considering firms' earnings management with respect to analysts' forecasts. Financial analysts are assumed to understand these earnings management practices and incorporate firms' expected behavior into their forecasts. This study provides a better understanding of the properties of analysts' forecasts by modeling firms' earnings management practices and analysts' response to them. It provides both theoretical and practical implications for accounting standards setters in China. This study will provide additional insights on how emerging markets like China examine the role of financial analysts when the Chinese stock market becomes more efficient following market liberalizations. Important insights can be gained from this research with respect to analysts' decision processes, determinants of analyst expertise and distributions of analysts' earnings forecasts, market and analyst efficiency regarding value-relevant information, the impacts of analysts' economic incentives and behavioral biases on their research outputs, the influence of the institutional and regulatory environment, and the limitations of databases and various research paradigms. This research is anticipated to have implications for emerging behavioral finance theories of market inefficiency<sup>59</sup>.

Firth and Gift (1999) analyse the significant differences in forecasting accuracies across different nations and explain a multitude of potential reasons for the differences. One potential dimension they investigated is the financial risk and composite risk. Other reasons for the significant differences between countries in their analysis include disclosure regulations, accounting rules, tax regimes, corporate governance structures, and national economic policies and conditions. They also find that accuracy is generally greater in more mature markets, and that composite and financial risks are more significant determinants of accuracy than firm size and analyst following. Hope (2003a, 2003b) investigates how differences in regulations across countries affect the information environment and the characteristics of analysts' forecasts. They report that across countries, a strong enforcement of accounting standards is associated with improved forecast accuracy, and the level of disclosure about accounting policies is inversely related to forecast errors and dispersion. Barniv et al. (2005) conclude that consistent with legal and financial reporting environments

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<sup>59</sup> Some behavioral finance theories of market inefficiency hypothesize psychological biases affect market prices (e.g., Barberis, Shleifer and Vishny, 1998; Daniel, Hirshleifer and Subramanyam, 1998).

influencing analyst activities, superior analysts maintain superiority in common-law countries, but not in civil-law countries. According to [Table 1.6 GDP, Market Capitalisation and number of Listed Companies 2012 \(OECD, 2014\)](#) in Chapter 1, China is under civil law jurisdiction where the financial analysts do not maintain superiority. This empirical study discovers an optimistic bias in analysts' forecasts for Chinese listed companies but fails to provide any evidence supporting that discretionary accrual measures are positively associated with just meeting or beating the analysts' forecast benchmark. It challenges the 'benchmark beating incentive' in most prior literature based on western developed countries, such as the US and the UK.

Kothari et al. (2005) find that ROA performance-matched accrual measures mitigate Type I research errors when the partitioning variable is correlated with performance. There are two plausible explanations for the considerably weaker results for performance-matched discretionary accruals: (1) performance-matching reduces the power of statistical tests of earnings management around earnings benchmarks, and (2) the previous associations between discretionary accrual measures and beating the profit and analysts' forecast benchmarks are attributable to an underlying association between discretionary accrual proxies and firm performance that is unrelated to earnings management.

One disadvantage of this study is that the discretionary accruals proxies for earnings management may capture nondiscretionary accruals (Dechow et al., 1995; Guay et al., 1996; Kasznik, 1999; and McNichols, 2000). Discretionary accrual models have substantial measurement error (Dechow et al., 1995). In other words, the discretionary accruals are acknowledged as noisy proxies for earnings management activity. Bradshaw et al. (2001) show evidence of analysts' *accruals' mispricing* (see Chapter 9). Consistently, Ahmed et al. (2005) also document that analysts can't distinguish discretionary accruals from non-discretionary accruals. Additionally, generally speaking, the more experienced the analysts are, the more efficient is their use of historical earnings and accuracy (Mikhail et al., 2003). However, regarding how analysts use the information on earnings, the answer is not unambiguous. On the other hand, there is also evidence showing that analysts do not fully extract information from the accounting reports (e.g., Abarbanell and Bernard, 1992; Easterbrook and Nutt, 1999; Ali et al., 1992; Cheng, 2005, and the citations therein). Inefficiency in analysts' forecasts is an indication, but not conclusive evidence, of market

inefficiency. A well-recognized problem with studies that use analyst forecasts as the target is that beating an analyst forecast depends not only on the firm's accounting choices, but also on the analyst's forecasting actions. Analyst forecast errors are determined by reported earnings rather than unmanaged earnings. As Abarbanell and Lehavy (2003) observed, earnings management is more likely in certain regions of the forecast error distribution. Inferences about analyst behaviour based on analyst forecast errors are problematic in cases which reported earnings are more likely to (systematically) deviate from unmanaged earnings. Meeting or beating expectations is regarded as the phenomenon of firms announcing earnings that either meet or beat the consensus analysts' forecasts of earnings (Ronen and Yaari, 2008). The importance of meeting or beating expectations follows from the fact that earnings are the statistics predicted by analysts (DeFond and Hung, 2003). Hence, successfully meeting expectations or failing to beat them could attract a lot of attentions in the press and from investors. More importantly, the stock market rewards the firms that meet or beat expectations and a significant stock price premium (penalty) for meeting or beating (missing) analysts' earnings forecasts has been documented, after controlling for the magnitude of the forecast error. Meeting or beating earnings is regarded as another case of manipulating earnings in order to beat a threshold which is the consensus analysts' forecast. Matsumoto (2002) and Williams (2006) state that firms are under pressure from the capital market to meet or beat expectations in order to sustain their market prices. However, as Chen *et al.* (2008) argued, in China incentives for meeting or beating analysts' forecast do not exist. Because the analysts only play a primitive role in Chinese stock market and their forecasts usually have no impact on stock price.

# **Chapter 5 Conclusions**

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## Chapter 5 Conclusions

### 5.1. Summary and Key findings

This thesis contributes to provide a better understanding of the nature of accounting information reliability by measuring the relation between informativeness of earnings and corporate governance based on the Chinese context with its unique political, social, cultural and economic environment and huge sample size. The empirical results from this thesis will add new insights to the existing corporate governance literature targeted on a large, fast-growing, and transitional economy. It has implications for China's regulators who are striving to improve accounting information, transparency, and corporate governance. The objective of this thesis aims to investigate accounting information quality and corporate governance by addressing three predominant empirical research questions in three studies. This thesis is structured in five chapters as follows.

*Chapter 1* gives an introduction to accounting information reliability and qualitative characteristics in FASB's Conceptual Framework. China is an ideal context to be studied with its sui generis characteristics, which has adopted many of the corporate governance mechanisms applied in developed countries. Thus, the Chinese background and institutional context have been introduced in this thesis, including an overview of earnings management and corporate governance in China, split share structure reform and Accounting and Financial Reporting Standards application and convergence process and capital markets etc. The aims, objectives and research questions and research motivation and potential contribution as well as thesis structure are all included in Chapter 1.

Following this introductory chapter, *Chapter 2 (i.e. the 1<sup>st</sup> empirical study)* reviews some key papers that have had an influential impact on the literature related to earnings management as well as the empirical research in corporate governance in general. In addition, the concept of earnings management discussed in detail and the most widely used accrual models for capturing earnings management are considered. The distinct corporate governance model with two-tier board structure in mainland China is explained and compared with the American Model, UK Model and German Model in this section. More importantly, it examines the impact of corporate governance on earnings management in China through investigating whether the board composition and the independence, financial/accounting



expertise and official background of independent directors and supervisors are correlated to the absolute value of discretionary accruals or discretionary revenue. It focuses on two aspects from the perspective of board monitoring: the role of independent directors on the board and the supervisory directors in constraining earnings manipulation. It adds to the corporate governance literature by linking the independent directors and supervisory directors and earnings management. It documents that the principal-principal agency conflict between the controlling shareholders (the State) and minority shareholders is the main cause of earnings management in China.

The key findings of this empirical study in this thesis suggest the Chinese two-tier board structure comprising a board of directors with at least one third independent directors and a supervisory board fails to mitigate earnings management. This conclusion is based on the research which used a large sample of Chinese listed companies in Shanghai Stock Exchange and Shenzhen Stock Exchange from 2005 to 2010. Most importantly, none of the Independent Directors and Supervisors variables is significant under both the discretionary accruals model with random effects and the discretionary revenue model with fixed effects. It provides the evidence that the independent directors and supervisor system are dysfunctional in monitoring the Board activities in China. Wang (2008) argues that the independent directors have made a certain but limited contribution to corporate governance in China, compared with the Supervisory Board which is perceived as just a decoration to the boardroom. The motive in China for introducing the mechanism of external, independent directors is to ensure greater corporate board independence and protection of investor interests. Theoretically, the independent directors and board of supervisors should have a positive effect on the quality of accounting information. Nevertheless, the findings show that the board of supervisors in listed companies is only a formality and it does not play its due role in quality control. These results are robust to the control of firm characteristics and corporate governance variables, as well as industry and time effects. One possible explanation for this finding is that independent directors and supervisory directors in China are often ‘vases’ and do not work as efficiently as in the developed countries. This indicates the independent directors and supervisory directors cannot voice for the minority shareholders; what they do is simply to agree with whatever the management or larger shareholders want, supporting the agency theory (conflict between controlling shareholders and minority shareholders) and stewardship theory.

*Chapter 3 (i.e. the 2<sup>nd</sup> empirical study)* investigates the quality of reported earnings in China from the perspective of both accounting-based (including accrual quality, persistence, predictability and smoothness) and market-based earnings attributes (including value relevance, timeliness, and conservatism in order to fully capture the earnings attributes). ERC is extended as a function of 'market-based' earnings quality via detecting earnings surprise, which is measured by: (a) the deviation of actual earnings from a predicated amount based on a time-series model of earnings and (b) the deviation of actual earnings from the consensus (median) analyst forecast (analyst forecast error), computed using each analyst's latest forecast before the earnings announcement. A two-way test has been conducted to compare the difference in earnings quality between State-Owned and Non-State-Owned enterprises, since there is a debate whether SOEs have more incentives to manipulate earnings than in Non-SOEs. According to financial distress theory, the incentives for Non-SOEs to manipulate earnings are stronger than in SOEs, since SOEs have the advantage to receive financial subsidies from government while Non-SOEs face more financing constraints. The agency theory, however, argues that state ownership in SOEs creates incentives and regulatory backing for self-serving purposes, thus motivating SOEs to manipulate accounting numbers. The political cost hypothesis complements the agency theory and illustrates that SOEs' managers would manipulate accounting numbers in response to government intervention (report conservatively to disguise the profits or report aggressively to meet specific thresholds). It tests whether analysts' forecasts are more accurate than forecasts based on time-series predicted statistics with random walk. This study also detects how the explanatory power of the earnings/returns relation is enhanced by varying the return interval (13-month, 15-month and 18-month return windows respectively).

The same set of accounting standards will yield different accounting outcomes when different preparer incentives are provided. For this reason, the reporting incentives and the forces shaping them are likely to determine earnings quality. The empirical results show that Chinese state-owned firms overall exhibit a lower earnings quality than non-state-owned firms supporting the agency theory. Since Chinese government ownership creates incentives and regulatory backing for self-serving purposes that negatively impact the listed firms' financial reporting. This analysis clearly states that the SOEs are inferior to Non-SOEs in earnings persistence at the 1% significance level, but perform better than Non-SOEs in accruals quality and earnings smoothness at 1% significant level. It indicates that the earnings

are more persistent in Non-SOEs than that in SOEs. The value relevance, predictability, conservatism and timeliness for SOEs and Non-SOEs are very close with no substantial difference. Simply according to the values, higher value relevant earnings and more predictable earnings and less conservative earnings (with 13-month and 18-month return interval) in Non-SOEs represent higher earnings quality; but less timely earnings in Non-SOEs implies lower earnings quality. It is consistent with previous studies that conservatism reduces earnings persistence and predictability, facilitates earnings management, reduces analyst forecast accuracy, and may decrease the value relevance of earnings (e.g., Basu, 1997; Ball et al., 2008; Dichev and Tang, 2008; and Chen et al. (2014). Compliant with the political theories of North (1990) and Olson (1993), if managers of state-owned listed firms deem tunneling by the parent companies as disadvantageous expropriation by the government, they may report earnings numbers conservatively to avoid a high political cost (Healy and Wahlen, 1999). However, the conservatism with 15-month adjusted market return for SOEs is obviously inferior to that for Non-SOEs at 10% significance level, which means Non-SOEs' reported earnings are more conservative than SOEs in China. Non-SOEs with overall higher ERC (earnings response coefficient) than SOEs based on both predicted earnings and consensus analyst forecast earnings indicates higher earnings quality in Non-SOEs in China during 2008 and 2013. It is consistent with prior literature, which provides evidence that earnings with more consistency and relevance will have stronger ERC (Kormendi and Lipe, 1987; Collins and Kothari, 1989; and Easton and Zmijewski, 1989). To sum up, consistent with prior studies, this study reports a very robust result in its analysis.

One very interesting finding is that predicted earnings based on the time-series statistical model with drift are more accurate than the consensus analyst forecast earnings, i.e. the deviation of actual earnings from analyst forecast earnings is larger than the deviation of actual earnings from the time-series predicated earnings. This result conflicts with findings in prior literature based on western developed countries, such as the US and the UK, indicating the malfunction of financial analysts in mainland China. If earnings forecasts of analysts are more precise, it means that analysts can provide useful information for investors to make decisions and contribute to the capital market; otherwise, it means analysts are worthless. Some studies provide evidence that analysts' forecasts are more accurate than predicted statistics based on historical annual data, but contrary findings are acquired in this thesis. It answers the question whether Chinese security analysts make efficient earnings forecasts. It

seems analyst earnings forecasting behavior is inefficient which shows a pattern of overweighting private information. To some extent, it reflects the poor quality of information disclosure of listed companies in China. Since the better the corporate disclosure quality is, the better the prediction accuracy of the analyst will be. It suggests that analysts in China still have room to improve their ability to forecast and investors should be cautious when using analysts' forecasts. Furthermore, SOEs manipulate down the earnings much more than Non-SOEs, manifesting the government generally expropriate the benefits of SOEs, according to the political cost hypothesis. Finally, the ERC\_p findings indicate SOEs still manipulate earnings more than Non-SOEs from 2008-2010, rejecting the financial-distress theory, probably because the Chinese ¥4-billion fiscal scheme from late 2008 wasn't designed in favour of SOEs.

*In Chapter 4 (i.e. the 3<sup>rd</sup> empirical study)*, it detects whether managers intend to manipulate earnings via discretionary accruals (the residuals derived from the Performance Matched Discretionary Accrual Measure and Forward-looking model and Modified Jones Model) in order to meet or beat analyst forecasts. It provides a better understanding of the properties of analysts' forecasts by modeling firms' earnings management practices and analysts' response to them. This study assigns firms to 'analysts-based unexpected earnings' bins based on the firm's unexpected earnings per share (in cents) and divides the earnings surprise (scaled by stock closing price) range from of -0.1 to 0.1 into 19 bins. Each just-beat and just-miss bin has a width of 0.01, and each firm-year observation appears once in a just-beat group and once in a just-miss group. This empirical study discovers an optimistic bias in analysts' forecasts for Chinese listed companies but fails to provide any evidence supporting that discretionary accrual measures are positively associated with just meeting or beating the analysts' forecast benchmark. It challenges the 'benchmark beating incentive' in most prior literature based on western developed countries, such as the US and the UK. It indicates that managers do not intend to manipulate discretionary accruals to meet or beat analyst forecasts. As Chen et al. (2008) argued, in China incentives for meeting or beating analysts' forecast do not exist. Because the analysts only play a primitive role in Chinese stock market and their forecasts usually have no impact on stock price.

*Chapter 5* discusses the main findings and limitations of this thesis and the reflections on Chinese context. It also provides the policy implications and includes the overall concluding remarks.

## **5.2. Reflections on Chinese Context**

The 2008 worldwide financial crisis reminded Asia and the world of the critical importance of strong corporate governance to underpin sound economic growth and value creation. Government regulations could also serve as an effective governance mechanism, especially when the law and law enforcement are weak (Johnson et al., 2001). However, the legal infrastructure in China is particularly weak. Pistor and Xu (2005) argue that the so-called ‘administrative governance’ has played an active and positive role in the development of Chinese stock market, at least in its earlier stage. More recent evidence shows that government regulations are also the source of many problems in the Chinese stock market. Chinese government chose the staged privatization strategy. While implementing partial privatization, the government makes an effort to retain the control of the SOEs. By no means does such a scheme imply that self-dealing by managers and controlling shareholders is less pervasive in China. But it does help explain the ‘control’ nature of the corporate governance practice widely adopted among the Chinese listed firms.

China has its own very distinctive characteristics and is structurally different from either developed markets or other emerging markets. For example, mainland China (not including Taiwan, Hong Kong and Macau) has a distinct two-tier board structure comprising a supervisor board including employee representatives and a board of directors with at least one third independent directors. Clearly, the corporate governance system adopted by the Chinese listed firms can be best described as a control-based model, in which the controlling shareholders – in most cases, the state – tightly control the listed firms through concentrated ownership and management friendly boards. As a consequence, there is a lack of timely disclosure of accounting information. The overall transparency in operations is low. What is worth noting is that the effectiveness of varied corporate governance mechanisms crucially hinges on the level of the overall institutional environment. When the legal system is incomplete and law enforcement is weak, and when business is closely connected to politics, the effectiveness of the conventional governance mechanisms, even though they are squarely in place, might also be greatly compromised (Liu, 2006).

The motive in China for introducing the mechanism of external, independent directors is to ensure greater corporate board independence and the protection of investor interests. The board size in Chinese listed companies is primarily driven by firm complexity and board

independence is mainly driven by regulation. A higher independent director ratio indicates a higher level of board independence, and thus better protection of the interests of creditors and small investors. However, the independent directors do not play this role as authorities and small investors expect. A conservative accounting policy is found to be negatively related to the ratio of independent directors, which is inconsistent with the findings derived from the US stock market (Ahmed and Duellman, 2007). The weak legal and institutional environments (laws and enforcement) are generally associated with the highly concentrated share ownership of listed companies (La Porta et al., 1999). The ownership of Chinese listed firms is highly concentrated unlike the dispersed ownership in the US and UK, the agency problem shifts from conflicts between shareholders and managers to conflicts between controlling shareholders and minority shareholders. Ownership concentration is associated with low earnings informativeness as it prevents leakage of proprietary information about the firms' rent-seeking activities. Ding et al. (2007) also claim that 'the conflict of interests between controlling shareholders (the State) and minority shareholders is the root cause of earnings management in China.' Even worse, the State is playing dual roles as both controlling shareholder and regulator (Clarke, 2003; Chen et al., 2006; Liu and Lu, 2007). When information asymmetry is high, stakeholders do not have sufficient resources or access to relevant information to monitor manager's behavior, which leads to the practice of earnings management (Schipper, 1989; Warfield et al., 1995). Controlling owners are considered to report accounting information for self-interested purposes, causing the earnings to lose credibility to investors outside China.

There are discernible factors suggesting that accounting information may not be as value-relevant in the Chinese market as in a mature market. Firstly, Chinese accounting systems and regulations were traditionally not market-oriented. Most listed companies were state-owned before going public and the purpose of their accounting was not to provide useful information to investors but to facilitate centralized state planning and control. Although the Chinese government issued a separate accounting standard for listed companies as early as in 1992, there have been numerous unresolved issues in implementing a shareholder-oriented accounting system. Consequently, the value of accounting information in China has been questioned in prior literature (Curran, 1994; Aharony et al., 2000; Haw et al., 1998). Secondly, the reliability of accounting information in China has been a source of concern. Independent auditing is relatively a new phenomenon in China. While it is true that financial statements of listed companies must be audited by CPAs, the quality of audits in China has

been generally perceived as low (Aharony et al., 2000). A relatively weak monitoring role by outside auditors may contribute to a lack of confidence in and less use of financial statements. Finally, compared to a mature market such as the US market, the Chinese market lacks a sufficient level of corporate governance such as independent outside directors, audit committees, and competition in the managerial labor market: all of which weakens investors' confidence in their use of accounting information.

Three institutional features of the Chinese political economy have been discussed in the prior literature, namely, (1) the extent of state ownership, (2) the level of market and legal institutions' development, and (3) the degree of government power over auditors (managers' decisions), affect Chinese listed firms' earnings quality. State (government) ownership might create incentives and regulatory backing for self-serving purposes that negatively impact the listed firms' financial reporting (Liu, 2014). Compared with Non-SOEs, SOEs have more advantages in Mainland China and receive more favorable treatment. Stock market regulators, such as the CSRC, give preferential treatment by extending listing privileges to local and central SOEs based on political rather than economic objectives. For instance, when applying for listing, the government allows local and central SOEs to report the 3 years of pre-IPO earnings based on estimations because they are typically restructured from a parent company immediately prior to the IPO (*Companies Law No. 137 promulgated in July 1994; CSRC Share Issuance Announcement in December 1996*). This special provision enables these SOEs to provide favorable profit numbers, helping them qualify for listing and inflate their IPO prices (Aharony et al., 2000). In contrast, Non-SOEs must have been in operation for 3 years prior to listing and therefore need to report actual earnings. Similarly, state banks give preferential treatment to local and central SOEs by granting loans based on political, social, or tax-motivated factors (Brandt and Li, 2003). SOEs receive political and financial support from the government. Government leaders have incentives to assist local and central SOEs (Kornai, 1993; Qian, 1994) because successful SOE listings bring more resources into local SOEs' regions or central SOEs' ministries, enhancing the government leaders' political capital and increasing their chances for promotion (Li and Zhou, 2005). The government's or state banks' preferential treatment to local and central SOEs is likely to result in these SOEs' lower demand for reputable (presumably large or non-local) auditors to serve as a signal of their quality.

Consistent with Bekaert et al. (1998) and Claessens et al. (1995), the distributions of stock returns in Chinese listed firms as in other emerging markets are highly non-normal and not identically distributed, with significant (usually positive) skewness and excess kurtosis that vary through time. Volatility tends to decrease following market liberalizations. These characteristics may become less pronounced as a market's economy comes to more closely resemble a developed market through increased openness and liberalization.

Ewert and Wagenhofer (2005) develop a rational expectations model showing that accounting standards can limit opportunistic discretion in accounting earnings that are more reflective of a firm's underlying economics and, therefore, are of higher quality. Because of both self-motivation and external pressure, the Chinese government has been active in developing accounting standards in harmony with IAS (Weetman, 2004). In 2006, the Ministry of Finance announced the introduction of 39 new Chinese Accounting Standards referring to the Basic Standard and the 38 specific Accounting Standards for Business Enterprises (ASBEs) issued by the Chinese Ministry of Finance. Although not complying fully with International Financial Reporting Standards (IFRS), the new Chinese Accounting Standards nonetheless adopt the principles contained in IFRS and are therefore considered to be substantially converged with IFRS. The experience of implementation of IFRS in China is particularly interesting as China was moving from a "rules-based" to a more 'principles-based' regime. The explicit recognition of IFRS by China also marks a significant step on the road towards a single, global accounting language. The more comprehensive disclosure requirements under IFRS relative to some domestic accounting standards may make earnings easier to understand and predict, improving analyst forecast accuracy (e.g., Ball, 2006).

The importance of voluntary disclosures is a means of supplementing the earnings information. *The Regulations on Information Disclosure of Listed Companies* approved by CSRC's 196th chairman meeting in December, 2006 and becomes effective from the issue date. According to laws including *Corporate Law* and *Securities Law* and administrative bylaws, these Regulations are intended to standardize the information disclosures of stock issuers, listed companies and other disclosure obligors, to strengthen the management of information disclosures and to protect the legitimate interest of investors. Information must be disclosed to all investors at the same time (CSRC).



### **5.3. Policy Implications**

Public governance is more likely a complement of corporate governance, but not its substitute. The role of government regulation as an effective governance mechanism has been seriously questioned. The current control-based governance model practiced by the Chinese listed firms damaged the investors' confidence and thus hinder the development of China's stock market; however, such corporate governance practice is rooted in China's institutional setting; improving corporate governance is not just a firm-level initiative, and its success cannot be achieved within the stock market; switching attentions to the macro-level institutional factors is a must, and will pay off/succeed. It is becoming clear that a market-oriented governance model should be eventually put in place in China. This thesis will provide important implications for the policy makers and the corporate governance reforms in China to protect the minority shareholders' interests in the future. In order to strengthen the role of the board of supervisors, the key thing is to ensure true and sufficient independence of the board of supervisors rather than it being subject to management. It has implications for market regulators, policy makers and standard setters who should pay more attention to enhance the authentic independence of independent directors and supervisory directors in Chinese firms.

New accounting standards (*2006 Chinese GAAP*) may have improved the quantity of accounting information; however, investors have their own opinions about the quality of the accounting income. Therefore, it is important for standard setters/regulators and policy makers to know the reason of the low quality of reported accounting information. The policy makers should consider the overall institutional setting/environment in existing China. It is critical for policy makers and regulators to understand how the concentrated ownership structure in China is associated with incentives for firms to reduce accounting information quality. Implementing international accounting standards and disclosure rules by rote without considering the institutional environment in mainland China will not improve the corporate transparency. The participation of standard setters, preparers, auditors, and users is crucial to such research. This research has implications for China's regulators who are striving to improve accounting information, transparency, and corporate governance. It implies that for consideration by the Ministry of Finance as the Chinese accounting standards setter and other regulatory bodies, Chinese regulators should (1) continue with their policy of openness and proportionate regulation. Enforcement actions should continue to be effectively communicated. More emphasis needs to be placed on disclosing explanations for the key

judgments made by preparers of financial statements, in accordance with IAS 1; (2) Regulators should consider how they can achieve their regulatory objective without providing inappropriate incentives for profit manipulation. This is particularly the case for the rule whereby if a loss is made for three consecutive years a company is delisted (*The Institute of Chartered Accountants of Scotland, 2010*).

This analysis contributes to provide both theoretical and practical implications for accounting standards setters in China. There are some recommendations for the Government (State), which usually plays a dual role of market regulator and owner of SOEs with commercial operations. First of all, the government should not be engaged in the daily operations and management of SOEs. Rather, it should give them full operational autonomy to achieve their objectives. Secondly, the state should let SOE boards exercise their responsibilities and respect their independence. State-owned enterprises should follow high standards of transparency in accordance with the OECD Principles of Corporate Governance. Thirdly, full administrative separation of responsibilities for ownership and market regulation is suggested as a fundamental prerequisite for creating a level playing field for SOEs and private companies and for avoiding distortion of competition. Fourthly, the state should not give an automatic guarantee regarding the SOE liabilities. Fair practices with regard to the disclosure and remuneration of state guarantees should also be developed and SOEs should be encouraged to seek financing from capital markets. Finally, enhancing transparency and accountability is central to improving the corporate governance of state-owned enterprises.

#### **5.4. Limitations**

In this empirical analysis, some reflections e.g. the very low significance (the low adjusted R-square, e.g., lower than 10%, implying the models in this analysis do not do a good job at explaining the dependent variables; it is normally the case in mainland China) of the empirical models can be recognized as a limitation of this study presented in Chapter 2. And there are construct validity problems in the abnormal accruals proxies and difficulties in drawing inferences from earnings quality and earnings management studies about decision-maker preferences.

In Chapter 3, there are some limitations in our earnings quality measures. One initial concern related to our market-based earnings attributes is how well stock returns can proxy for

economic income, particularly in emerging markets like China. Since emerging markets have very distinctive characteristics and are structurally different from both developed markets and each other. Drummen and Zimmerman (1992) and Eftekhari and Satchell (1999) all demonstrate that country specific factors predominate over other factors (e.g. world factors and industry trends) in the determination of stock returns. This study relied on the assumption that the Chinese stock market is efficient and the stock returns effectively reflect and capture the fundamental firm-specific economic performance. However, Morck et al. (2000) argue that the stock market in China is of high synchronicity where stock returns capture low amounts of firm-specific information. It may cause the observed  $R^2$  not to reliably measure value relevance. The second concern is related to this study's accruals quality measure. Wysocki (2006) presume that Dechow and Dichev's model (2002) fails to capture a firm's earnings quality because there is a strong negative correlation between contemporaneous cash flows and accruals. Studies find that common law countries do not necessarily have higher quality in every attribute of earnings (e.g. Boonlert-U-Thai et al., 2006; Bushman and Piotroski, 2006). Meanwhile, all abnormal accruals models suffer from the inherent limitation that is difficult to validate the accuracy of their predictions. For example, it is unable to verify whether the estimates of discretionary accruals are the result of management's opportunistic accounting choices, or just an artifact of the particular model employed. This is a construct validity problem, which means that these proxies utilized in this study are unable to reliably measure the underlying theoretical constructs they are intended to measure. The final concern is the analyst forecast error. Bartholdy and Feng (2013) investigate the quality of securities firms' earnings forecasts and stock recommendations in China and find that both earnings forecasts and stock recommendations are biased upwards and stock markets regard stock recommendations as having new information. They show the forecast error in the Bear market from September, 2002 to October, 2005 was larger than that in the Bull market between November, 2005 and October, 2007. The sample period for ERC model is during the year of 2008 and 2013, which is deemed as a stage of Bear market. It will be a critical factor that has an impact on the analyst forecast accuracy.

One disadvantage of the third empirical study (i.e. Chapter 4) is that discretionary accrual models have substantial measurement error (Dechow et al., 1995). In other words, the discretionary accruals are acknowledged as noisy proxies for earnings management activity. Bradshaw et al. (2001) show evidence of analysts' *accruals' mispricing*. Consistently,

Ahmed et al. (2005) also document that analysts can't distinguish discretionary accruals from non-discretionary accruals. Additionally, generally speaking, the more experienced the analysts are, the more efficient is their use of historical earnings and accuracy (Mikhail et al., 2003). However, regarding how analysts use the information on earnings, the answer is not unambiguous. On the other hand, there is also evidence showing that analysts do not fully extract information from the accounting reports (e.g., Abarbanell and Bernard, 1992; Easterbrook and Nutt, 1999; Ali et al., 1992; Cheng, 2005; and the citations therein). Inefficiency in analysts' forecasts is an indication, but not conclusive evidence, of market inefficiency. A well-recognized problem with studies that use analyst forecasts as the target is that beating an analyst forecast depends not only on the firm's accounting choices, but also on the analyst's forecasting actions. Analyst forecast errors are determined by reported earnings rather than unmanaged earnings. As Abarbanell and Lehavy (2003) observed, earnings management is more likely in certain regions of the forecast error distribution. Inferences about analyst behaviour based on analyst forecast errors are problematic in cases which reported earnings are more likely to (systematically) deviate from unmanaged earnings. Meeting or beating expectations is regarded as the phenomenon of firms announcing earnings that either meet or beat the consensus analysts' forecasts of earnings (Ronen and Yaari, 2008). Matsumoto (2002) and Williams (2006) state that firms are under pressure from the capital market to meet or beat expectations in order to sustain their market prices. However, as Chen *et al.* (2008) argued, in China incentives for meeting or beating analysts' forecast do not exist. Because the analysts only play a primitive role in Chinese stock market and their forecasts usually have no impact on stock price.

In addition, some comments on potentially adding some political economy related control variables (for instance, under common-law or civil-law jurisdiction, industry trend and earnings target incentives, country-level institutions, audit quality, and internal controls etc.) to capture the uniqueness of the Chinese case as a limitation of this study.

Finally, an area of the earnings quality literature that seems relatively under-researched is 'real activities' manipulation. The fundamental importance of this area is evidenced in Graham et al. (2005), which concludes that earnings management is not only widely practiced, but that the majority of earnings management arises from manipulating real operating activities. The implications of this thesis indicate that managers' real activities

manipulation is relatively commonplace. However, compared to the research that investigates accruals-based earnings management, research on activities management is scarce. The paucity of research in this area means we lack the knowledge about whether or how real transactions management influences the earnings quality. It should be further detected and developed in the future.

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