Evidence on Determinants for Accounting Conservatism

呉, 懿

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Evidence on Determinants for Accounting Conservatism

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神戸大学大学院経営学研究科
後藤　雅敏研究室
経営学専攻
学籍番号：132B105B
氏名：呉　懿

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Chapter 1

Preface

This study aims to shed light on the role of accounting standards on discipling accounting practices with a focus on the exploration of determinants for accounting conservatism.

In face of the increased demands for relevance and comparability in accounting information from international capital markets, several standards have been introduced or revised to narrow the gap between Japanese standards and international financial reporting standards, as well as the U.S generally accepted accounting principles in recent years. Among them are the asset impairment standards which were mandated in fiscal year 2005. Much attention is given in the academic to examine management's propensity to engage in earnings management as the standards leave substantial room for managerial discretion on when to implement an impairment loss (e.g., Francis et al. [1996], Rees et al. [1996b], Riedl [2004a], Enomoto [2006], Szczesny and Valentincic [2013]). However, pressure on management to disclose a downward change in asset values will increase acutely over time when signs for value deteriorations become evident as required by statute. Findings in Lawrence et al. [2013] provide empirical grounds for such disciplinary feature of accounting standards with a focus on accounting conservatism, wherein the authors term the regulatory force of generally accepted accounting principles in disciplining timely loss recognition as non-discretionary conservatism. To the best of my knowledge, there still lacks empirical evidence with respect to non-discretionary conservatism in Japan and China. As outlined previously, the purpose of this study is twofold. The first essay seeks to fill the void concerning the effects of accounting standards on conservatism. The second essay then aims to identify the underlying determinants, aside from non-discretionary conservatism, for accounting conservatism which could counteract/facilitate timelier disclosure of adverse accounting information.

The first essay examines the role of non-discretionary conservatism in disciplining timely loss recognition after the introduction of accounting standards on asset-impairment. Asset impairment interprets conservative accounting through writing off unperformed investment before its useful lives come to an end, if there is reasonable evidence that the future cash inflows generated by the asset have fallen below its present value. In theory, a timely asset impairment allows for better informed decisions between stakeholders in a reporting entity. It provides investors with more value-relevant information regarding the underlying economic value of the assets while assists creditors in preventing expropriation of firm resources by management. Furthermore, under the

historical cost convention, accounting standards require immediate recognition of impairment losses in devalued fixed assets whilst asset gains are still deferred until realized. Therefore, asset impairments are a key way in which earnings exhibit accounting conservatism within the current framework of accounting principles. Hence, the introduction of procedural accounting rules should promote reliability of accounting information and impels accounting conservatism. The theory of non-discretionary conservatism is brought to the front of discussion by Lawrence et al. [2013] owing to the rise of this line of thought. They document a considerably positive relationship between non-discretionary conservatism and asset impairment losses in the U.S listed firms, suggesting that demands for accounting conservatism essentially come from the authoritativeness of accounting standards which deters managerial discretions in the implementation of asset impairment. They also propose the incorporation of non-discretionary conservatism into Basu's [1997] framework to further sophisticate the measurement for conditional conservatism.

On the other hand, a primary issue in the context of asset impairment is management's willingness to recognize impairment losses as they occur. A sizable study points out that accounting conservatism is influenced by managerial incentives to avoid reporting losses (e.g., Francis et al. [1996], Riedl [2004a], Ramanna and Watts [2012]). This study aims to shed new insight in line with this debate while provide initial empirical evidence with respect to non-discretionary conservatism in the context of Japanese listed firms.

Following Lawrence et al. [2013], this study constructs a metric for effects of accounting standards (i.e., ASSET-BTM). It is measured as total assets deflated by the sum of market capitalization and total assets minus common equity, both measured at the end of fiscal year t−1. ASSET-BTM predicts major loss recognition as it rises beyond the value of one. In other words, as the present value of the future economic incomes is manifested as a company's market value, when the market value of a company is lower than the book value of its total assets, a higher than one ASSET-BTM thereby implies a considerable decline in asset values. The company accordingly is expected to write off the assets whose values have greatly deteriorated. However, the current accounting standards grant the management with certain level of discretion over how and when to recognize such losses. Through a careful examination on the relationship between non-discretionary conservatism and the asset impairment accounting practice in Japanese listed firms, I found that non-discretionary conservatism does explain a substantial proportion of impairment losses. However, non-discretionary conservatism alone does not constrain managerial opportunism as much as that found in the U.S. setting. For instance, firms, whose market value is higher than the book value at the beginning of

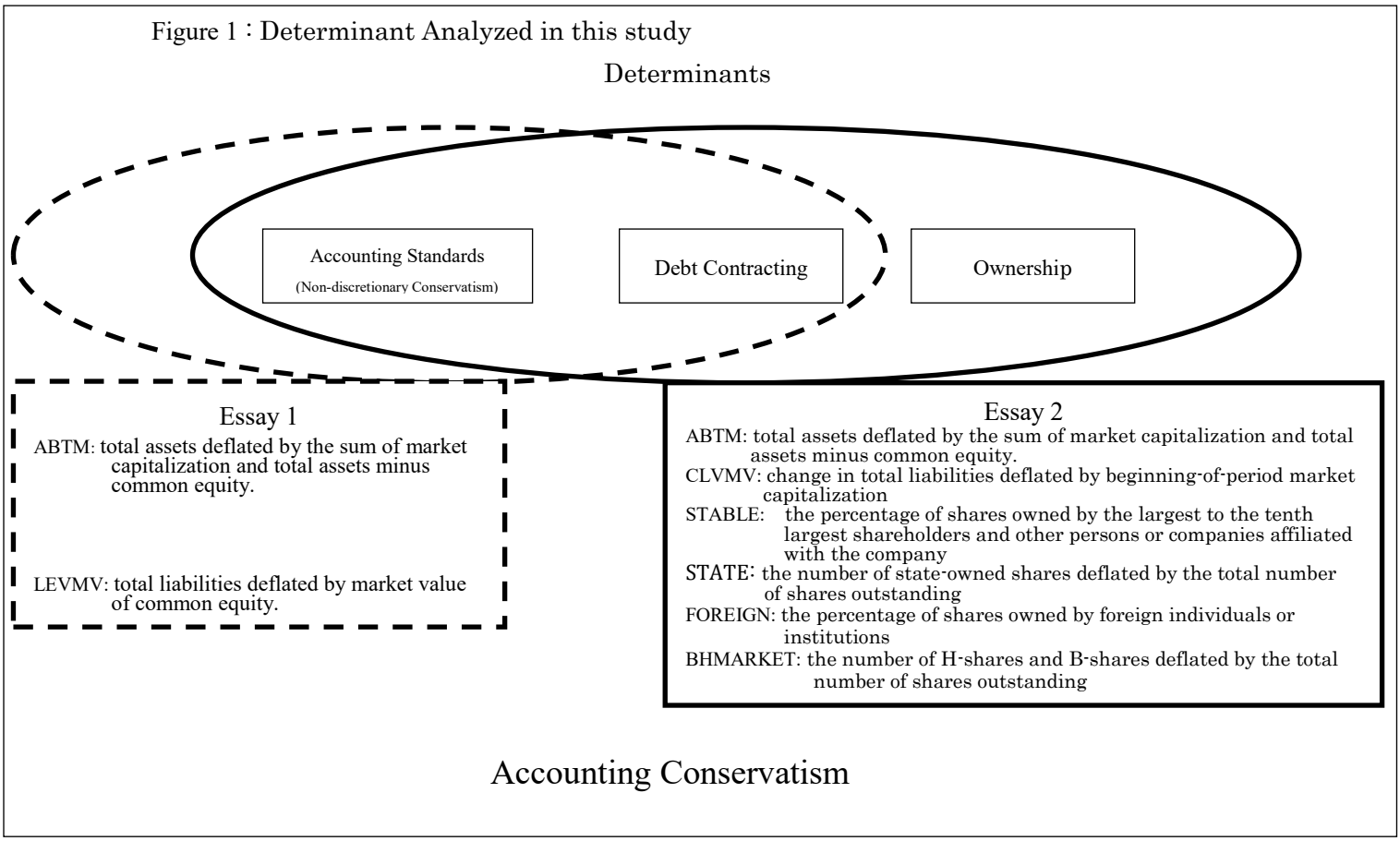
the fiscal year, generally exhibit higher level of accounting conservatism. Nonetheless, test results also indicate that such firms do not necessarily recognize as much asset write-downs as predicted by the theory of non-discretionary conservatism when the scope of accounting practice is narrowed to asset impairment. Taken together, findings in the first essay suggest that managerial opportunism still impedes the recognition of timeously asset impairment losses.

On other hand, analysis in the first essay also implies a seemingly improved accounting standard does not necessarily lead to its intended consequence in financial reporting when introduced to another accounting regime. For example, even though the U.S and Chinese listed firms are required to report asset impairment losses under a highly resembled set of accounting standards, non-discretionary conservatism is inferior to financial leverage in predicting asset write-downs in the Chinese setting, which coincides the findings in the Japanese setting. In other words, test results in the first essay indicate that unity of accounting rules do not necessarily engender identical interpretation in practice. Aside from accounting standards and capital structure, the quality of accounting information is also determined by other institutional factors. This motivates the second study which focuses on the role of ownership structure as well as the influence of accounting standards and capital structure on accounting conservatism through comparison between Japan and China.

The second essay investigates how ownership structure characteristic in Japan and China shapes conservative accounting practice. More importantly, this study differentiates itself from prior studies in that it also focuses on disentangling how associations between ownership structures and other determinants discussed in the previous section, i.e., capital structure and accounting regulations, affect accounting conservatism in the two accounting domains.

The first ownership structure discussed in the Japanese setting is stable shareholdings. Corporate governance in Japan has commonly been compared to that in the Anglo-American business world. Specifically, compared to the widely dispersed shareholding in the U.S., shares are owned by a relatively small network of shareholders in Japan. Usually, such shareholders consist of financial institutions affiliating to the same conglomerate and companies with long-term business partnership. I posit that a higher proportion of stable shareholdings leads to lower demands for accounting conservatism as the closely-held ownership structure gives rise to private comminution channels for both debtholders and shareholders other than pubic accounting information. Especially, to the extent interests of shareholders are intertwined with management, major loss recognition would on the contrary cut back on their economic gains in the long run.

Figure 1：Determinant Analyzed in this study



Note:
Please refer to Essays 1 and 2 for further details on variable definition.

Consistent with the expectation, stable shareholdings are negatively associated with conservative accounting.

In the Chinese setting, I examine how state shareholding affects the level of accounting conservatism. In a similar vein, I expect that firms with higher proportion of state shareholders would be less timely in recognizing losses as the state cares more about financial stabilities and political reputation than value maximization. Test results firmly support my expectation that state shareholdings are negatively associated with accounting conservatism in China.

On the other hand, the second essay also sets out to explore the influence of foreign equity in both Japan and China. While some existing literature links foreign investors with improved information transparency and operation efficiency, others maintain that foreign investors face more severe asymmetric information and higher monitoring costs such that they are unable to execute the presumable influence. Although no substantial difference is found for firms with higher proportion of foreign equity in both Japan and China, dual listing in the B- and H-share market proves to be an effective way to enhance

accounting conservatism in the Chinese setting.

As an important feature of this study, I also incorporate leverage and non-discretionary conservatism into the regression model. I expect the interactions between the three factors would deepen our understanding on how accounting conservatism is shaped in firms under different circumstances. The correlation between ownership structure and financial leverage is worth noting because debt contracting has traditionally been deemed as in favor of conservatism across different accounting regimes. Notwithstanding, the interaction term between leverage and stable (state) shareholdings remains negative, indicating that demands from the debtholders fail to suppress the negative influence of stable (state) shareholdings. This in turn reflects a multi-facet firm-bank relationship in Japan and China. On the other hand, the interaction term between leverage and foreign equity is positive, which implies that, as proportion of foreign equity increases, a constrained financial leverage is more likely to evoke higher level of accounting conservatism. The second essay further confirms the role of accounting standards enforcement on accounting conservatism in firms with characteristic ownership structure. As with the first essay, I employ the measure of ASSET-BTM and analyze its correlation with different types of shareholding structure. Overall, test results attest to a more powerful enforcement environment in Japan while that in China still needs significant improvements. For example, the interaction term between ASSET-BTM and stable shareholdings is positive, indicating that when asset value is over evaluated, commitment to timely loss recognition will compel management to rectify assets balance even in firms with higher proportion of stable shareholders. By contrast, the interaction term between non-discretionary conservatism and state shareholdings is significantly negative which mirrors a relatively weak regulatory infrastructure in China.

This study adds insight to the extant literature in the following aspects. First, I employ the quantile regression (QR) (e.g., Koenker and Bassett [1978]) and the Adaptive LASSO regularized Quantile Regression (LASSO: Least Absolute Shrinkage Selection Operator) (e.g. Wu and Liu [2009], Fan et al. [2014]) in this study to carefully explore relationship between the response variable and independent variables, which otherwise will be overlooked by conventional statistical regression methods. For instance, the application of LASSO intuitively illustrates the prominent power of financial leverage in predicting asset write-downs in the Japanese and Chinese setting, offering direct evidence against findings based in the Anglo-American setting (i.e., Lawrence et al. [2013]). Moreover, in order to ensure the robustness of the test results, this study employs as many metrics as possible to measure the degree of accounting conservatism from both the market

perspective and accounting perspective. The first essay employs two market-based measurement (i.e., measure c and T_SCORE) and an accounting-based model (accrual model). In addition to the above-mentioned measurements, the second essay applies another accounting-based measure i.e., CONSKEW, to test the sensitivity of findings in this study. Except for the additional test based on accrual model in the second essay, test results are robust to different measurements of accounting conservatism. Second, this study highlights the influence of institutional features over accounting quality. Test results from the interaction of predictors of accounting conservatism, which include ownership structure and financing feature or accounting standards enforcement, suggest that, improvement in compliance to accounting standards depends on the interplay between demands for high-quality reporting, the extent of regulatory infrastructures, and managerial incentives. Finally, this study compliments findings in previous studies by providing new evidence with respect to managerial opportunism in the implementation of asset impairment accounting. While the intention of granting discretion in impairment accounting is for management to signal private information, the findings in this study suggest that management might take advantage of the subjectivity inherent in the accounting standards to delay major asset write-downs. In other words, the introduction of hortative accounting rules fails to engage management into timely loss recognition. The next few years are likely to witness a further convergence of accounting rules worldwide. In light of such movement, findings in this study will provide useful reference towards further convergence for standard setters.

Chapter 2
the Role of Non-Discretionary Conservatism in Asset-Impairment Accounting

1. Introduction

While studies highlighting the benefits and consequences of accounting conservatism abound in academic literature, research on how accounting standards influence conservatism to the concerns of standards setters is still underdeveloped (Dichev et al. [2013]). This study aims to investigate how non-discretionary conservatism[1] functions in Japanese listed companies as identified through the implementation of asset impairment accounting standards.

Japanese accounting standards incorporate a two-step approach which heavily relies on management's estimations and judgements. In general, information asymmetry will be reduced should more information be available. However, information related to the procedures performed by management is withheld from outside parties. Consequently, it is possible that management increases their wealth at the expense of shareholders by exercising discretionary accounting without violating related accounting standards (e.g., Healy and Wahlen [1999], Leuz et al. [2003], Ali and Zhang [2015]). I therefor posit that due to the subjectivity in the accounting standards for asset impairment, the implementation of asset write-downs would likely fail to reconcile with the demands for conservatism even when strongly warranted by circumstances. Using 17,152 firm/year observations after the asset impairment standards were adopted in Japan, I found that non-discretionary conservatism fails to drive a timelier loss recognition in Japanese as it does in the U.S.

A company's market value originates from its future economic gains and is ultimately derived from its current assets. An abnormally high book-to-market ratio in this case indicates the level of non-discretionary conservatism and underscores the deterioration in the asset values of a firm. In other words, as per the demands for conservatism, when the book-to-market ratio continues to increase, corrective actions shall ensue. After a careful examination of the correlation between the beginning-of-period book-to-market ratio, I found that asset impairment execution rises abruptly as the assets' market value drops to become equal to its book value and peaks when the book-to-market ratio slightly exceeds one. Since there are few numerical requirements concerning the implementation of asset impairment, this discontinuity can certainly be construed as normal

[1] Non-discretionary conservatism is defined as the regulatory force of accounting principles. On the other hand, discretionary conservatism is defined as accounting choices arising from the discretional application of conservatism in accounting standards.

conservatism so far as the market value is higher than the book value. However, there is a prominent tendency of the asset impairment execution to diminish as the book-to-market ratio elevates to two, which indicates that a considerable number of listed Japanese companies intentionally evade loss recognition even when their assets' values have greatly diminished. This confirms my prediction that flexibility in accounting standards allows some leeway for management to exercise their discretion.

I then continue to investigate influencers for efficient execution of asset impairment. Among the root causes proposed in prior studies, conservatism is commonly theorized as an efficient contracting mechanism between stakeholders, in particular, between creditors and borrowers (Watts [2003a], Ahmed et al. [2002], Zhang [2008b], Nikolaev [2010a], and Aier et al. [2014]). With their potential payoff capped at the interest payment, creditors benefit from conservative financial reporting should they be able to detect default risks in a timelier manner. I expect that, despite the presence of management's incentives to eschew conservative accounting, a higher level of external financing would lead to a higher demand for conservatism. Results in this paper confirm that debt contracting, as opposed to other variables (e.g., non-discretionary conservatism, the presence of intangible assets, litigation risk, a weak financial performance etc.) is the dominant driver for asset write-downs in Japanese listed companies.

To explore variation in conservatism across Japanese listed companies, I employ the quantile regression (QR) (e.g., Koenker and Bassett [1978]) and the Adaptive LASSO regularized Quantile Regression (LASSO: Least Absolute Shrinkage Selection Operator) (e.g. Wu and Liu [2009], Fan et al. [2014]) in this study. The subjects of financial accounting research are always under the influence of a variety of factors, QR test and QR-LASSO may provide the needed solution to solve conflicting interpretations and divergent opinions documented in previous studies. I choose the QR test as an alternative solution to conventional linear regression because the conditional distribution of beginning-of-period ASSET-BTM and current-period asset write-downs may fail to fulfill the basic assumption of homoscedasticity. On the other hand, QR-LASSO analysis can detect predictors with the strongest influence on asset write-downs at any quantile. Additional details concerning QR and QR-LASSO are provided in Appendix 1.

The findings of this study contribute to the recent debate on the role of unconditional conservatism in financial reporting. Even though Financial Accounting Standards Board (FASB hereafter) and International Accounting Standards Board (IASB) exhibit strong inclinations to purge conservatism from accounting's conceptual framework,[2] empirical

[2] FASB responded to questions on the role of conservatism as follows:

evidence suggests that conservatism is useful because it reduces, rather than increases, information asymmetry between inside managers and outside investors (e.g., LaFond and Watts [2008]). Findings in this study reveal that when legal enforcement fails to control reporting incentives and accounting discretion, unconditional conservatism plays a fundamental role in the properties of accounting numbers.

Furthermore, this study advances the literature on the effects of economic framework on accounting choices. Evidence from this study supports the insight that discrepancies in the companies' reporting stance across countries are probably due to the existence of ex-ante differences in the institutional settings. To begin with, Japanese accounting principles vary from those adopted in the U.S. Some of the factors include goodwill treatment, recognition over consolidated subsidiaries, leases, and so on. Such diversities in principles may intervene in the management's interpretation of accounting information. For example, goodwill recognized in consolidation transactions (which continues to be subject to an impairment test) requires to be amortized within 20 years in Japan. When faced with a constrained bottom line, the management would become less willing to recognize losses out of concern for their reputation or penalty from the capital market. Second, Japanese public firms operate under a triune regulatory framework where companies should comply not only with the Securities and Exchange Law but also the Commercial Code and the Tax Code, implying that all stakeholders' interests (e.g., government, creditors, and shareholders) must be taken into account. Therefore, accounting disclosure in Japan, in this sense, could be less oriented towards the market than it is in the U.S. Furthermore, a well-maintained bank-firm relationship, also known as "Keiretsu" or main-bank system, could have paralyzed banks' monitoring function that hinders the abandonment or adjustment of underperforming investments (e.g., Skinner [2008], Kang and Liu [2008], Kobayashi and Osano [2011], Skinner and Srinivasan [2012],and Kato et al. [2017]). A better understanding of business environment's influence on actual accounting choices is potentially important for regulators and policy-makers engaged in the work towards convergence of accounting principles.

Third, there are still conflicting arguments about the validity about the validity of the "Asymmetric Timeliness coefficient" developed in Basu [1997] (Basu coefficient hereafter). Dietrich et al. [2007] and Patatoukas and Thomas [2011] assert that Basu

"Financial information needs to be neutral – free from bias intended to influence a decision or outcome. To that end, the common conceptual framework should not include conservatism or prudence among the desirable qualitative characteristics of accounting information. However, the framework should note the continuing need to be careful in the face of uncertainty."

This statement explicitly expresses the concerns of FASB that the existence of conservatism will lead to more information asymmetry.

coefficient should be avoided because the problems of endogeneity and scale effect. On the other hand, Ball et al. [2013a] disputed the previous findings on the basis of variable definition. Furthermore, Ball et al. [2013b] confirmed that the overall accuracy of Basu coefficient can be substantially improved by controlling firm characteristics like size, BTM ratio and leverage. Given that disagreement remains about the validity of some measures for conditional conservatism, I applied T_SCORE (e.g.,Khan and Watts [2009]), the asymmetrically timely recognition of gains and losses using accruals and cash flows from operation (e.g.,Ball and Shivakumar [2006a]) to verify the robustness of the findings in this paper.

Although the findings of this study agree with statistical results, this study nonetheless possesses the following limitations. First, all the samples are divided at equal intervals to test the features of each group. Such an artificial subdivision lowers the comparability between groups. However, it is almost impossible to completely remove arbitrariness regardless of the division. Moreover, securing a sufficient number of observations in each group will be difficult if they are broken down at much smaller intervals.

Second, it is still unclear to what degree the aggregated measure of ASSET-BTM[3] captures the extent of non-discretionary conservatism. The numerator (book value of total assets) is underestimated when those assets are recorded on the balance sheet – an effect attributable to the adoption of unconditional conservatism. In addition, assets subject to other impairment accounting standards, such as software, are included in the equation. Thus, even if the beginning-of-period ASSET-BTM is less than one, impairment accounting procedures for assets other than fixed assets may have been taken according to generally accepted accounting principles (GAAP hereafter). Another concern is that an asset (group) with a beginning-of-period ASSET-BTM higher than one

[3] The measure for non-discretionary conservatism is developed by Lawrence et al. [2013] and is constructed as follows:

$$\text{ASSET-BTM} = \frac{\text{total assets}}{\text{market capitalization} + \text{total assets} - \text{common equity}}$$

Roychowdhury and Watts [2007] indicated that conditionally conservative accounting is positively related to beginning-of-period BTM but not necessarily to the end-of-period BTM. Thus, a higher beginning-of-period BTM than the previous period may suggest that the value of certain assets might have declined. Because the end-of-period book value is measured after taking such write-downs, this study used the beginning-of-period BTM as the proxy of non-discretionary conservatism.

Under Japanese accounting standards, the book value and the recoverable amount (net realizable value or value in use) of the underlying asset (group) are indispensable in determining whether an asset (group) should be written down. However, while the book value of the fixed asset can be easily identified, the information that management employed to estimate the recoverable amount (i.e., discount rate, future cash flows) is almost impossible to obtain. This constraint in turn affects the accuracy of the computing result. Considering the above limitation, it can be assumed that the aggregate measure ASSET-BTM can also be applied to the investigation of Japanese companies.

could be overlooked due to the principle of materiality. As a result, the current-period actual impairment loss caused by fixed assets would be lower than the expectations. In other words, the adoption of ASSET-BTM might potentially bias the outcome.

The remainder of this study is organized as follows. Section 2 overviews some previous studies. Section 3 explains the hypotheses. Section 4 describes the research design of this study. Section 5 presents the statistics. Section 6 summarizes additional discussion of the test results and concludes the study.

2. Previous Research

The approach to understanding conservatism has undergone a dramatic change over the past three decades due to the efforts to empirically quantitate conservatism. One of the most pioneering studies to model conservatism can be attributed to that of Basu [1997]. He defined conservatism as a tendency for bad news to be dealt with in a timelier manner than good news (i.e., accelerate the recognition of loss and defer the recognition of gains) and developed the Basu coefficient for measuring earnings conservatism. In other words, the Basu coefficient captures the different timeliness with which bad and good news are reported in contemporaneous earnings. Among the available empirical methods for evaluating earnings conservatism, Basu's (1997) framework (Basu model hereafter), which was later designated as conditional conservatism, has become dominant in the literature.

Unconditional conservatism is primarily described as understating the book value of net asset relative to its market value on the balance sheet (i.e., recognition of cost is enforced before real depreciation is observed in asset value) (e.g., Watts [2003a]). Beaver and Ryan [2000] employed the measurement of BTM ratio to examine and explain the nature of unconditional conservatism. They defined conservatism as a systematic and persistent bias in the recognition of income and regressed the BTM ratio on lagged returns to filter out the temporary or transitory effects due to other economic factors.

Another line of thought (e.g., Beaver and Ryan [2005], Pae et al. [2005]) has attempted to bridge these two conceptual frameworks and examine how the two forms of conservatism interact with each other. Roychowdhury and Watts [2007] noted that the annual estimate of the Basu coefficient is affected by firms' failure to record asset write-downs because previous asset value increases were not recorded due to conservatism (the "buffer" problem), and higher asymmetric response to bad news vs good news would eventually generate lower BTM ratio over longer horizons. Lawrence et al. [2013] adds to this line of thought by offering an alternative explanation from the perspective of non-

discretionary conservatism that indicates the necessity of controlling the BTM when measuring the Basu coefficient. In particular, they documented a non-monotonic and exceptionally positive relation between asset write-downs and the BTM ratio in region with beginning-of-period BTM ratio greater than one led by the enforcement of GAAP.

Lawrence et al. [2013] also integrates the concept of conservatism to relate to the study on earnings management. They found that the incentives to follow accounting standards are positively associated with penalties under enforcement mechanisms. They asserted that although the subjectivity inherent in the accounting standards gives rise to discretional activities, GAAP plays an important role in facilitating contracting efficiency by deterring management from engaging in further discretional activities. Roychowdhury and Martin [2013] characterized non-discretionary conservatism as "normal conservatism". They indicated that reporting opportunism arising from contractual factors not only has a great impact on discretionary conservatism, but also weighs against non- discretionary conservatism as it can mold the form of "normality".

On the other hand, there is a paucity of literature on effects of change in accounting standards on companies' conservative reporting policies. Oler [2014] investigated the impact of certain FASB standards (SFAS 87, 106, 121, 142, and 123R[4]) on accounting conservatism (that lower the probability of firms having a BTM ratio greater than one). He found that SFAS 121, as well as SFAS 123R, caused decreases in conservatism, which he attributed to the greater flexibility in SFAS 121 on the timing of an impairment. Ramanna and Watts [2012] focused on the implementation of SFAS 142, which also solely depends on management estimates of goodwill's fair value to determine these write-downs, and indicated that goodwill write-downs are subject to motives predicted by agency theory such as CEO compensation and debt-covenant. The results of this study are closer to that of Oler [2014] and Ramanna and Watts [2012] in that certain accounting standards, however strictly enforced, may not correspond to the expectations of regulators to improve the usefulness of accounting information.

FASB has consistently attempted to marginalize conservatism, reflecting the line or reasoning which holds that understatement of net assets and cumulative profits generated by conservatism presumably interferes in the decision-making process of financial statements users. Movement, actions such as capitalization of development cost, apparently abhorrent to the principle of conservatism has become prevalent in the realm

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[4] SFAS 87: Employers' Accounting for Pensions;
SFAS 106: Employers' Accounting for Postretirement Benefits Other Than Pension;
SFAS 121: Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of;
SFAS 142: Goodwill and Other Intangible Assets; and
SFAS 123R: Share Based Payments

of accounting regulations. In other words, the need for neutrality or relevance prevails over the need for a defense against uncertainty.

However, chances are that management prioritizes their own interests over those of other stakeholders, maintaining unconditional conservatism in accounting practices will offset such managerial opportunism. When book value of assets is kept sufficiently low from the beginning or is not capitalized at all, managers will find few assets subject to accounting discretion if the economic environment changes adversely. Therefore, this study focuses on the effect of accounting discretion on the implementation of impairment accounting standards.

To the best of my knowledge, there still lacks study on non-discretionary conservatism in Japan. In this work, I try to fill this void. In addition, when impairment accounting is performed, more often than not, the losses run into considerable sums. These significant declines in earnings will be matched by high volatility in the capital markets. Thus, an understanding of how accounting standards affect impairment accounting is of great interests not only to researchers, but also of essential importance to standard setters, shareholders, and lenders. This is the primary motivation for this study.

3. Hypotheses

The first question I address is whether impairment accounting standards allow for discretional management in Japanese companies. Beaver and Ryan [2005] suggested that the BTM ratio primarily reflects the extent to which unconditional conservatism forestalls the application of conditionally conservative accounting. Thus, the beginning-of-period BTM is expected to be positively associated with asset write-downs, hereby proxies for conditional conservatism. Although the two-step procedures are expected to serve to prevent the abusive use of impairment (big bath), as well as reduce operational burdens, the abstract recognition criteria involving management subjectivity judgment gives rise to the concern that it will eventually spur the demands for discretional accounting choices (e.g., Bartov et al. [1998], Elliott and Hanna [1996], Rees et al. [1996a]). On top of that, a large body of research has indicated that management has strong incentives to adapt accounting standards in ways that maximize their own benefits (e.g., Dechow et al. [1999]).

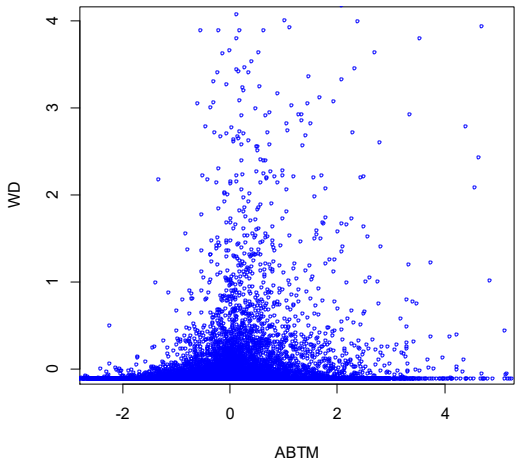
Figure 1 demonstrates the correlation between current-period write-downs on fixed assets (WD plotted on the vertical axis) and beginning-of-period ASSET-BTM ($ABTM$ plotted on the horizontal axis), using past performance figures of Japanese listed companies from fiscal year 2005 to 2014. Figure 1 shows that, as $ABTM$ approaches one,

the gentle curve formed from the two indicators undergoes a dramatic rise and WD peaks just after $ABTM$ exceeds one. In other words, when $ABTM$ is sufficiently low, there is little need to activate conditional conservatism. Hence, I predicted that a discontinuity exists as the beginning-of-period ASSET-BTM approaches one. This leads to my first hypothesis.

H1: The relation between beginning-of-period ASSET-BTM and current-period asset write-downs is positive and nonlinear.

However, the deterrent effect of unconditional conservatism begins to recede as the total impairment loss seems more likely to decline when the beginning-of-period ASSET-BTM moves beyond one.

Figure 1:



Note:
Figure 1 demonstrates the correlation between current-period asset write-downs (WD) and beginning-of-period ASSET-BTM ($ABTM$). Data was standardized for further tests.

One of the explanations for the deviation comes from the institutional distinctions between the two accounting regimes. Particularly, U.S. accounting rules prohibit expensing goodwill unless it is deemed impaired. In addition, impairment losses recognized under ASC 360-10 cannot be allocated to goodwill and other non-amortizing intangible assets, even if those assets are included in the asset groups being tested for recoverability. [5] In contrast, Japanese listed companies must amortize goodwill

[5] Applying the same implementation process to goodwill may have altered the size of the buffer zone but have little influence on non-discretionary items.

regularly over a period not exceeding 20 years. Because amortized goodwill is recorded as selling, general, and administrative expenses attributable to operating income, extensive amortization of goodwill could squeeze the reported financial performance for years. Proponents of goodwill amortization stress that purchased goodwill should be reflected on income statements before any deterioration in real earning capacity is observed. They argue that goodwill acquired by M&As is non-durable and gradually replaced internally-developed goodwill. It is a reasonable assumption that internally developed synergies need effort to achieve and time to accumulate. Thus, Japanese companies are reluctant to record additional asset impairment losses when they believe an asset (group) is overly depreciated.

The other source of the differences between Japan and the U.S., which were identified in the implementation of asset impairment accounting standards, is reporting incentives. Shaped by capital market forces and institutional factors, financial reporting incentives strongly influence financial reporting because the application of accounting standards involves discretion and judgement (e.g., Watts and Zimmerman [1986], Ball et al. [2003]). Riedl [2004b] also suggested that earnings management related to impairment loss tends to rise because of the intrinsic nature of its accounting setting. Therefore, opportunistic behavior in financial reporting by management will not be completely held back as a result of market imperfections, namely information asymmetry and agency conflicts. Consequently, I state my second hypothesis in its null form and expect it would be rejected based on the previous discussion.

H2: The positive relation between the beginning-of-period ASSET-BTM and current-period asset write-downs is stronger for companies whose beginning-of-period ASSET-BTM is greater than one.

4 Research Design

4.1 Grouping

First, all samples will be divided into eight groups according to their beginning-of-period ASSET-BTM at intervals of 0.2.[6] All samples would initially be separated using

[6] The entire sample is divided into eight groups based on their rank of beginning-of-period ASSET-BTM. However, this approach is only effective when the companies belonging to the same group have a similar degree of conservatism throughout the entire observation period. In general, the beginning-of-period ASSET-BTM is affected by the accounting procedures executed at the end of the previous fiscal year. For example, if a significant impairment procedure has been performed at the end of the previous fiscal year in a company belonging to a high-ranking group, there is a strong possibility that such a company's beginning-of-period ASSET-BTM would drop sharply. Therefore, test results obtained

beginning-of-period ASSET-BTM of one as a dividing line. Then, they will further be divided into smaller groups based on the same interval of 0.2. The eight groups are arranged in an ascending order of beginning-of-period ASSET-BTM. I expected companies belonging to Group 1 would show the least need for asset write-downs, whereas companies belonging to Group 8 would show the opposite tendency. Groups 5 and 6 are the cohorts of most interest as they reflect samples whose beginning-of-period ASSET-BTMs are just less or greater than one.

4.2 the Adaptive LASSO regularized Quantile Regression (QR-LASSO)

A sizable literature in conservatism empirically supports the assertion that the contracting theory links debt structure and conservatism (Aier et al. [2014], Nikolaev [2010b], Khan and Watts [2009], Beatty et al. [2008], Zhang [2008a], Ball et al. [2008]), since debt-holders' fixed financial claims on earnings render them the first-order demander for accounting conservatism (e.g., Guay [2006], Roychowdhury and Martin [2013]). On the other hand, agency theory characterizes a large body of research on management's incentives to choose aggressive accounting over conservatism. Evidence in Lawrence et al. [2013] contrasts previous studies in that it documents a strong disciplinary effect of accounting standards on accounting conservatism (i.e., non-discretionary conservatism). In particular, non-discretionary conservatism demonstrates higher predicting power for conservative accounting than debt contract. Since Lawrence et al. [2013] is based on the U.S. setting, the issue then arises as to how effective non-discretionary conservatism is to prevent departures from conservatism in Japan. I apply the Adaptive-LASSO penalized quantile regression (QR-LASSO) (e.g., Wu and Liu [2009]) to address the problem above.

QR-LASSO is an integrative approach to variable selection which can screen out irrelevant noise for variables affecting the dependent variable by pushing coefficients on the less significant predictors to zero and in the meantime, evaluate effects of predictor variables at any quantile. A smaller set of predictors with the strongest effects not only increases prediction accuracy but also boosts a better understanding of how each predictor influences the response variable. In other words, the select process of variables tests whether the theory of non-discretionary conservatism readily applies in the Japanese setting, When beginning-of-period ASSET-BTM is included in the model and enters the model earlier than other predictors analyzed in this test, it thereby attests to the paramount effectiveness of non-discretionary conservatism in disciplining recognition of asset impairment.

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from the companies belonging to low-ranking groups might have been distorted.

4.3 Quantile Regression (QR)

To provide evidence of a discontinuity in the relationship between beginning-of-period ASSET-BTM and asset write-downs, I also adopt the robust technique of Quantile regression. Although Ordinary Least Squares (OLS) is extensively utilized in regression analysis, its effectiveness largely depends on strong assumptions about the distribution of residuals. Solutions produced by OLS are highlighted in Figure 2 as the black solid line. Applying OLS in this instance would generate a coefficient estimate that is not fully indicative of the effects on the lower tail of the distribution as the empirical distribution of asset write-downs closely approximates a continuous inverted U-shape. On the other hand, quantile regression models heterogeneous effects of variables on a response and allows for heteroscedasticity. As per H1, I predict that dependent variables will respond incrementally stronger to the current-period asset write-downs as quantiles grows higher within the area wherein $ABTM_{t-1}$ gradually approaches/deviates the value of one. In other words, if the coefficient on $ABTM_{t-1}$ displays a dramatic change as the beginning-of-period ASSET-BTM reaches one (specifically between Group 5 and Group 6), it thereby upholds the conjecture in this study that asset write-downs grow nonlinearly along with the increase in the ratio of ASSET-BTM.

4.4 Variables Explanation

Other than ASSET-BTM ($ABTM$), I examined the following variables, which have been deemed influential in shaping accounting choices for asset impairment and/or conservatism. The variables are firm size ($SIZE$), debt contracting ($LEVMV$), and proportion of goodwill to total assets (GW).

Firm size ($SIZE$) is commonly referred to as the market value of a company's equity. Given the four drivers of conservatism advanced in Watts [2003a],[7] larger companies are more motivated to reduce regulatory cost and litigation risk arising from non-compliance with accounting regulations and corporation law. However, larger firms also enjoy comparative advantages of highly diversified business models and deeply interdependent management structure over smaller firms. Such flexible business environment allows for management to exercise discretion, making it more difficult for outside parties to retrieve information on true economic performance.

Debt covenants are viewed as the one of the primary inputs for conservatism (Watts [2003a]). Earlier studies document robust empirical relations between debt covenants and timely loss recognition. However, debt-contracting incentives might evoke

[7] Watts [2003a] hypothesized four resources of conservatism, which are contracting, shareholder litigation, taxation, and regulation.

aggressive accounting policies (e.g., Lawrence et al. [2013], Nikolaev [2010b]). Therefore, the question of how tradeoffs affect implementation of asset impairment by listed companies in Japan becomes empirical in nature.

$LEVMV_{t-1}$ represents debt contracting in this study, measured as the ratio of total liabilities[8] to market value of common equity (e.g., Beaver and Ryan [2000]). Goodwill primarily consists of future economic benefits and synergies in existing operations. As stated in Section 3, I added the variable for goodwill (GW) because it indicates one of the differences existing in the two accounting systems.

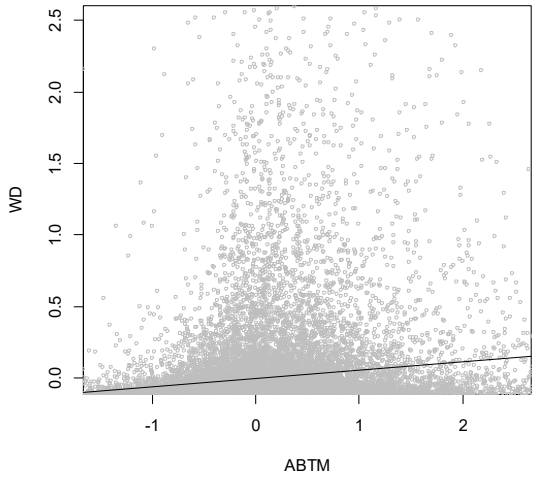
Viewed in general terms, companies with a high BTM ratio are more likely going through financial distress and, therefore, are in even greater need of financial support. (e.g., Jung et al. [1996], Smith and Watts [1992]). It is possible that a rise in the amount of equity and/or debt will alter the management's accounting choices. I employed two variables indicating two dominant sources of external financing, $DEBT_{t-1}$ and $EQUITY_{t-1}$, to denote proceeds from debt issuance and sale of common stock in year t−1 (deflated by market capitalization), respectively.

Instead of controlling for industry, I added the proportion of property, plant and equipment assets to total assets in year t−1 (PPE_{t-1}). As accounting standards generally apply to all firms, there is no a priori reason to suppose that conservatism will be higher for a certain industry. On the contrary, failing to control for the size of fixed assets might cause the effects of other variables to be misrepresented.

Finally, I apply two dummy variables to control for the non-discretionary element in conditional conservatism. $WEAK_{t-1}$ takes a value of 1 if $LROA_t$ is below 5% and 0 otherwise. $LROA_{\mathrm{t}}$ is a lag indicator for ROA and is computed as the average value of ROA_{t-1} and ROA_{t-2}. $WEAK$ reveals a company's ability to generate earnings from its investments. $BTLD_{t-2}$ indicates the accounting slack accumulated over time. It takes a value of 1 if $ABTM_{t-2}$ is higher than 1 and 0 otherwise. When both variables take the value of 1, companies with higher than 1 ASSET-BTM in the previous two accounting periods undoubtedly require a higher level of conservative accounting.

[8] Instead of market value of total liabilities, I used book value of total liabilities to compute market value leverage ($LEVMV$). Long-term liability such as corporate bonds is required to be recognized at amortized cost under Japanese accounting standards. Other liabilities are also required either to be marked to market (i.e., bank loans) or to be recorded extremely close to their market values (i.e., reserve for retirement allowance). Furthermore, book value of liability is customarily used as proxy for market value in studies of corporate finance (i.e., the calculation of corporation value). In summary, book value of liability is an appropriate substitute for its market value.

Figure 2



Note:

Figure A demonstrates the effects of beginning-of-period ABTM on asset write-downs estimated by OLS analysis. WD : asset write-downs measured at the end of fiscal year t /market capitalization measured at the end of fiscal year t−1. $ABTM$: total assets / market capitalization + total assets - common equity, both measured at the end of fiscal year t−1. Data was standardized for further tests.

The QR test uncovers trends among variables across all quantiles on the basis of Eq. 1.

$$Q_{WD_t}(\tau|X_i) = \sum_i \beta_{i,\tau} X_i + \varepsilon_{i,\tau} \qquad \tau \in (0,100) \qquad i \in [1,10] \qquad 1$$

WD_t = current-period asset write-downs

X_i:

$ABTM_{t-1}$ = total assets deflated by the sum of market capitalization and total assets minus common equity, both measured at the end of fiscal year t−1

$SIZE_{t-1}$ = natural logarithm of market value at the end of fiscal year t−1

$LEVMV_{t-1}$ = total liabilities deflated by market value of common equity at the end of fiscal year t−1.

GW_{t-1} = book value of goodwill deflated by total assets, both measured at the end of fiscal year t−1.

$WEAK_{t-1}$ = 1 if $LROA_t$ is below 5% and 0 otherwise. $LROA_t$ is a lag indicator for ROA, computed as the average value of ROA_{t-1} and ROA_{t-2}.

PPE_{t-1} = proportion of property, plant and equipment assets to total assets, measured at the end of year t−1.

$DEBT_{t-1}$ = proceeds from the issuance of bonds in year t−1 deflated by market capitalization of common equity at the end of year t−1.

$EQUITY_{t-1}$ = proceeds from the issuance of common stock in year t−1 deflated by market capitalization of common equity at the end of year t−1.

$BTLD_{t-2}$ = 1 if $ABTM_{t-2}$ is higher than 1 and 0 otherwise.

Here, τ denotes the quantile, and y represents current-period asset write-downs (WD_t). $\beta_{i,\tau}$ represents the slope coefficient of a specific variable, selected by Step 2, on the dependent variable (WD_t) for a specific quantile τ. For instance, for τ = 75, $\beta_{1,75}$ denotes the effect of $ABTM_{t-1}$ at the 75th percentile of WD_t.

4.5 Test for Non-Discretionary Conservatism

LSS declared that as beginning-of-period ASSET-BTM becomes greater than one, non-discretionary conservatism plays an increasingly influential role. Given the different distributions (Figure 1) shown by samples with respect to Japanese listed companies, I predict that non-discretionary conservatism does not function as effectively in Japanese listed companies as it does in American listed companies. To learn more regarding non-discretionary conservatism, I conducted a close investigation into the sub groups defined in Section 4.1. In addition, I trace and compare the levels of all groups' conditional conservatism based on the models applied by Basu [1997], Pae et al. [2005], Khan and Watts [2009], and Ball and Shivakumar [2006a].

5 Sample and Descriptive Statistics

5.1 Sample Selection

The initial sample in this study includes all Japanese listed firms with necessary data on NIKKE NEEDS Financial Quest covering an analysis period from fiscal year 2005 to 2014. I collect stock return data from NPM Daily Return Database (Financial Data Solutions). To reduce analytical complexity, financial institutions, companies with a fiscal year ending other than March; companies who have been delisted; and those who had changed their year-end in the middle of a fiscal year were excluded from the observations. I eliminated a total of 853 firm/year samples which do not have sufficient data to compute the measure of ASSET-BTM (i.e., total assets and market capitalization). A further 22 firm/year samples with negative common equity and one sample with negative asset write-downs were also excluded from the analyses. The final sample includes 17,152 firm/years fulfilling the requirements.

Table 1 presents the sample selection process and the number of samples in each group.

5.2 Descriptive Statistics

Table 2 Panel A reports descriptive statistics for variables of particular importance in this study. WD_{t} denotes asset write-downs scaled by market capitalization measured at the end of fiscal year t−1. Observing a higher mean value (0.0081) than the median value (0) and 3rd quartile (0.0008) for WD_t indicates the presence of "big bath" – that is, a minor portion of the samples take up the majority of asset write-downs recognized at each year end. $ABTM_{t-1}$ denotes ASSET-BTM measured at the end of fiscal year t−1, computed as the book value of total assets deflated by the sum of market capitalization and total assets minus common equity. $BTMD_{\mathrm{t-1}}$ is a dummy variable which takes a value of 1 if $ABTM_{t-1}$ is higher than 1 and 0 otherwise. The mean value of $ABTM_{t-1}$

and $BTMD_{t-1}$ are 1.0305 and 0.5262, respectively, both of which show that approximately more than half of the samples have lower market values than their book values.[9]

Panel B of Table 2 compares some important statistical results across groups. First, recall that groups are classified by ASSET-BTM measured at the end of year t－1 in an ascending order. As expected, the mean WD of Groups 6, 7 and 8 are 0.0102, 0.0117, and 0.0218, respectively, all of which noticeably surpass those of groups with a beginning-of-period ASSET-BTM lower than one.

TABLE 1　Process of Sample Selection

Panel A：Process of Sample Selection	
	initial sample
	27670
1 analytical complexity	Δ9643
2 required accounting data	Δ853
3 negative common equity and asset write-downs	Δ22
total	17152

Panel B：Number of Samples in Each Group		
		N
Group1	$ABTM_{t-1}$ <0.2	170
Group2	0.2≤ $ABTM_{t-1}$ <0.4	371
Group3	0.4≤ $ABTM_{t-1}$ <0.6	980
Group4	0.6≤ $ABTM_{t-1}$ <0.8	2280
Group5	0.8≤ $ABTM_{t-1}$<1	4325
Group6	1≤ $ABTM_{t-1}$<1.2	4749
Group7	1.2≤ $ABTM_{t-1}$<1.4	2328
Group8	1.4≤ $ABTM_{t-1}$	1949

Note:
Panel A: The required accounting data includes total assets, common equity and market capitalization. In order to reduce analytical complexity, firms with fiscal year ending other than March, companies who have been delisted; and those who had changed their year-end in the middle of a fiscal year were excluded. Samples which do not have sufficient data to compute the measure of ASSET-BTM and those with negative common equity and asset write-downs were also excluded.
Panel B: The samples were separated into eight groups using an interval of 0.2. Then, the eight groups were arranged in an ascending order of beginning-of-period ASSET-BTM. I expected companies belonging to Group 1 would show the least need for asset write-downs, whereas companies belonging to Group 8 would show the opposite tendency. $ABTM_{t-1}$: total assets / the sum of market capitalization and total assets minus common equity, both measured at the end of fiscal year t－1. N denotes the number of observations in each ASSET-BTM group. N%

[9] This differs hugely from the analysis performed in Lawrence et al. [2013], who reported that only the upper 25% of the observations were expected to write down their assets.

denotes the percentage of each group's firm/years in all observations.

From Panel B, a trend toward a rapid decline in Firm size ($SIZE$) is evident from Group 3 to Group 8, which is consistent with the trend observed in previous research, indicating that larger companies have a preference for more conservative accounting (e.g., Watts and Zimmerman [1986]).

A growing number of studies have shown that debt covenants are a most important reporting incentive to predict loss recognition timeliness. $LEVMV$ peaks in Group 6 (3.7706), but decreases sharply with Group 8 (1.6959) being the lowest among groups with higher than one beginning-of-period ASSET-BTM.

The pecking order theory predicts that management prioritizes debt issuance over equity when external financing is required. In other words, the issue of debt implies underestimation of stock price and the issue of equity otherwise. (e.g., Jung et al. [1996], Smith and Watts [1992]). Consistent with the pecking order theory, firms from Group 8 issue considerably more new stock than the other groups as leverage ratios decline rapidly through Groups 6 － 8.

Panel C in Table 2 considers the operating performance of all samples. R_{t-1} is the buy-and-hold return on common stock for the 12 months ending three months after the end of fiscal year t－1. Return on assets (ROA) is used extensively to investigate a company's earning capacity. ROA_t is computed as income before extraordinary items at the end of fiscal year t scaled by the book value of total assets. $LROA_{\mathrm{t}}$ is a lag indicator for ROA, computed as the average value of ROA_{t-1} and ROA_{t-2}. $WEAK_{t-1}$ is a dummy variable, that takes a value of 1 if $LROA_t$ is below 5% and 0 otherwise. PPE_{t-1} denotes proportion of property, plant and equipment assets to total assets, measured at the end of year t－1.

R_{t-1} decreases as ASSET-BTM grows and bottoms at －0.0695 in Group 8. $LROA$ negatively interacts with ASSET-BTM, with Group 8 the lowest (0.0152). The result for $WEAK$ is briefly accordant with the rank of beginning-of-period ASSET-BTM. In particular, the financial performance of Groups 5 to Group 8 is relatively weaker than that of the other groups with lower beginning-of-period ASSET-BTM. $WEAK$ for Group8 runs up to 0.9112, suggesting that more than 90% of the observations belonging to Group 8 suffered depressed financial performance. [10]

[10] It is noteworthy that $WEAK$ for US listed companies, as documented by Lawrence et al. [2013], ranges from 0.603 ($0.3 \leq ABTM_{t-1} < 0.5$) to 0.847 ($ABTM_{t-1} > 1.2$). In other words, Japanese listed companies in high ASSET-BTM groups exhibit lower operational effectiveness than their counterparts in America, whereas those in low ASSET-BTM groups enjoy financial performance surpassing their American counterparts.

TABLE 2 Descriptive Statistics

Panel A: Descriptive Statistic for All Samples

	mean	std.	1st quartile	median	3rd quartile
WD_t	0.0081	0.0669	0.0000	0.0000	0.0008
$ABTM_{t-1}$	1.0305	0.3631	0.8281	1.0160	1.1995
$BTMD_{t-1}$	0.5262	0.4993	0	1	1
$SIZE_{t-1}$	10.1709	1.8129	8.8706	9.9396	11.2959

Panel B: Descriptive Statistic for Each Group

	WD_t	$SIZE_{t-1}$	$LEVMV_{t-1}$	$DEBT_{t-1}$	$EQUITY_{t-1}$	$BTMD_{t-2}$
Group1	0.0002	9.5272	0.3802	0.0035	0.0116	0.3176
Group2	0.0005	9.7000	0.2318	0.0033	0.0171	0.0943
Group3	0.0009	10.2374	0.3783	0.0066	0.0143	0.0918
Group4	0.0015	10.3327	0.7927	0.0105	0.0092	0.1443
Group5	0.0040	10.3913	1.9592	0.0219	0.0120	0.2860
Group6	0.0102	10.1591	3.7706	0.0281	0.0130	0.7412
Group7	0.0117	9.9731	2.4685	0.0140	0.0075	0.9055
Group8	0.0218	9.8699	1.6959	0.0080	0.0217	0.9523

Notes:
WD_t : asset write-downs measured at the end of fiscal year t /market capitalization measured at the end of fiscal year t−1. $ABTM_{t-1}$: total assets / market capitalization + total assets −common equity, both measured at the end of fiscal year t−1. $BTMD_{t-1}$: dummy variable which take a value of 1 if $ABTM_{t-1}$ is higher than 1, and 0 otherwise. $SIZE_{t-1}$: the natural logarithm of market capitalization at the end of fiscal year t−1. $LEVMV_{t-1}$: book value of total liabilities deflated by market value of common equity at the end of fiscal year t−1. $DEBT_{t-1}$: proceeds from debt issuance deflated by market capitalization, both measured at the end of year t−1. $EQUITY_{t-1}$: proceeds from sale of common stock deflated by market capitalization, both measured at the end of year t−1.

Panel D compares WD and $ABTM$ on a yearly basis. An economic deterioration, such as the global financial crisis in 2008, which put stock markets around the world on a downward trajectory, can significantly affect the implementations of asset impairment. The mean value of WD over time shows that asset impairment losses soared to 0.021 in 2009, which underscores the unprecedented challenges posed by the financial crisis. This is coincident with $ABTM$, which records its peak value (1.2082) in the same accounting period. Although the economy has steadily emerged from the financial crisis (the mean value of $ABTM$ declined from 1.2082 to 1.0305), Japanese listed companies are still struggling as $ABTM$ has remained over 1 since 2009.

Panel A of Table 3 contains the results of the actual asset write-downs in terms of frequency and volume. N denotes the number of observations in each ASSET-BTM group. Among all the observations of 17,152 firm/years, 5,085 sampling firms wrote down

their assets. GN represents the number of companies who have written down their assets. WDN% represents the percentage of such companies in all samples (17,152 firm/years). Group 6, together with Groups 7 and 8, occupy a dominant portion of 53% with respect to WDN%. $WDNG$% equals the percentage of companies who have written down their assets in each group. Groups with high beginning-of-period ASSET-BTM (Group 6 through Group 8) do not exhibit a tremendous difference between each other. On the other hand, $SUMWDG$ represents the sum of actual asset write-downs in each group. $SUMWD$% compares the amount of actual asset write-downs between the eight groups. In this respect, the three groups with a beginning-of-period ASSET-BTM higher than one (Group 6 through Group 8) constitute approximately 84% of the total actual asset write-downs. In brief, groups with higher ASSET-BTM outrank the other groups not only by the frequency but amount as well. From this, it is clear that when ASSET-BTM exceeds one, the application of impairment standards explodes.

If the "non-discretionary conservatism takes over theory" holds, both the frequency and amount of asset write-downs are expected to increase monotonically from Group 6 to Group 8. However, Groups 7 and 8 only take up 14% and 11% of WDN%, respectively, levels that are inferior to Group 6 (28%) even after Groups 7 and 8 are combined. In addition, the indicator $SUMWD$% of Group 6 (35%) is also higher than that of Group 7 (19%) and Group 8 (30%). According to a previous analysis on changes of ASSET-BTM over time, more than 40% of the entire observations have ASSET-BTM greater than one for three years in succession, indicating that a considerable proportion of Japanese listed companies postpone the application of impairment standards when circumstances warrant.

Panel B of Table 3 reports on a deeper examination of groups with beginning-of-period ASSET-BTM greater than one. N denotes the number of observations in each ASSET-BTM group. $N1$ depicts the number of companies who did not record asset write-downs at the end of fiscal year t. $WD1$%, the third row in Table 3, represents the percentage per group of such companies. Approximately 68% and 65% of the companies in Groups 7 and 8, respectively, potentially delayed the implementation of impairment even when their beginning-of-period ASSET-BTMs strongly imply a decline in the value of their assets. $N2$ depicts the number of companies who shelved the impairment procedures for two fiscal years in a row. $WD2$%, the last row in Table 3, then represents the percentage of such companies in each group. Although the number of such companies decreases by 18% in Group 6 (from 67% to 49%), the percentage of companies leaving their depreciating assets untouched in Group 7 (62%) and Group 8 (62%) remains surprisingly high despite the presence of such red flags for two consecutive fiscal years. This is

consistent with my expectation that non-discretionary conservatism is not as prevalent in Japanese listed companies as it is in American listed companies.

TABLE 2 Descriptive Statistic (Continued)

Panel C: Descriptive Statistic for Each Group

	R_{t-1}	DR_t	$LROA_t$	$WEAK_t$	GW_{t-1}	PPE_{t-1}
Group1	0.8041	0.4647	0.0486	0.4471	0.0340	0.1342
Group2	0.1922	0.5499	0.0494	0.3720	0.0136	0.1857
Group3	0.1318	0.5418	0.0473	0.3878	0.0139	0.2349
Group4	0.0695	0.5390	0.0372	0.6408	0.0104	0.2929
Group5	0.0316	0.5618	0.0250	0.8238	0.0068	0.3320
Group6	0.0467	0.5639	0.0186	0.8922	0.0057	0.3031
Group7	−0.0425	0.5438	0.0209	0.8922	0.0040	0.3015
Group8	−0.0695	0.5526	0.0152	0.9112	0.0039	0.2913

Panel D: Descriptive Statistic for Each Year

	WD_t		$ABTM_{t-1}$	
	mean	3rd quartile	mean	3rd quartile
2005	0.0010	0	0.9630	1.1008
2006	0.0020	0	0.8000	0.9721
2007	0.0005	0	0.8838	1.0649
2008	0.0063	0.0002	0.9886	1.1611
2009	0.0214	0.0061	1.2082	1.3596
2010	0.0112	0.0049	1.1323	1.2782
2011	0.0117	0.0033	1.1278	1.2875
2012	0.0089	0.0029	1.1762	1.3280
2013	0.0114	0.0035	1.0010	1.1723
2014	0.0061	0.0028	1.0047	1.1820

Notes:

R_{t-1}: the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t−1. DR_t: dummy variable, taking a value of 1 if R_{t-1} is negative, and 0 otherwise. ROA_t : income before extraordinary items / book value of total assets, both measured at the end of fiscal year t. $LROA_t$: lag indicator for ROA, computing as an average value of ROA for the previous two accounting periods. $WEAK_{t-1}$: dummy variable, taking a value of 1 if $LROA_t$ is less than 5%, and 0 otherwise. GW_{t-1}: book value of goodwill deflated by total assets, both measured at the end of fiscal year t−1. PPE_{t-1}: proportion of property, plant and equipment assets to total assets, measured at the end of year t−1.

TABLE 3 Descriptive Statistic

Panel A:

Results of Actual Asset Write-downs in terms of Frequency and Volume

	N	GN	$WDN\%$	$WDNG\%$	$SUMWDG$	$SUMWD\%$
Group1	170	18	0.10%	11%	0.0282	0%
Group2	371	66	0.38%	18%	0.1717	0%
Group3	980	197	1.15%	20%	0.8333	1%
Group4	2280	555	3.24%	24%	3.4093	2%
Group5	4325	1260	7.35%	29%	17.4105	12%
Group6	4749	1573	9.17%	33%	48.2238	35%
Group7	2328	742	4.33%	32%	27.1528	19%
Group8	1949	674	3.93%	35%	42.4499	30%
Total	17152	5085	29.65%	100%	139.6795	100%

Panel B:

Further Details of Groups with Beginning-of-period ASSET-BTM Greater than One

	N	$N1$	$WD1\%$	$N2$	$WD2\%$
Group6	4749	3176	67%	2336	49%
Group7	2328	1586	68%	1441	62%
Group8	1949	1275	65%	1217	62%

Note:

GN represents the number of companies who have written down their assets. $WDN\%$ represents the percentage of companies who have written down their assets in all samples. $WDNG\%$ equals the percentage of companies who have written down their assets in each group. $SUMWDG$ denotes the sum of actual asset write-downs in each group. $SUMWD\%$ denotes the percentage of each group's actual asset write-downs in the total actual asset write-downs. $N1$ depicts the number of companies who did not record asset write-downs at the end of fiscal year t. $WD1\%$ represents the percentage of companies who delay the application of impairment standards in each group. $N2$ depicts the number of companies who shelved the impairment procedures two fiscal years in a row. $WD2\%$ represents the percentage of companies who shelve the impairment procedures for two fiscal years.

5.3 Tests of Nonlinear Relation

5.3.1 the Adaptive LASSO regularized Quantile Regression (QR-LASSO)

Results of the QR-LASSO at the 70th, 75th, 80th, 85th, 90th, and 95th quantiles, respectively, are shown in Figure 3.[11] The upper plots show how the model at a specific quantile evolves through the selection process. Each colored line represents the value taken by a different variable. The vertical axis reveals the fit statistics of the variables

[11] I also performed the tests for samples below the 70th quantile, but no variables are validated as effective at lower than the 70th quantiles.

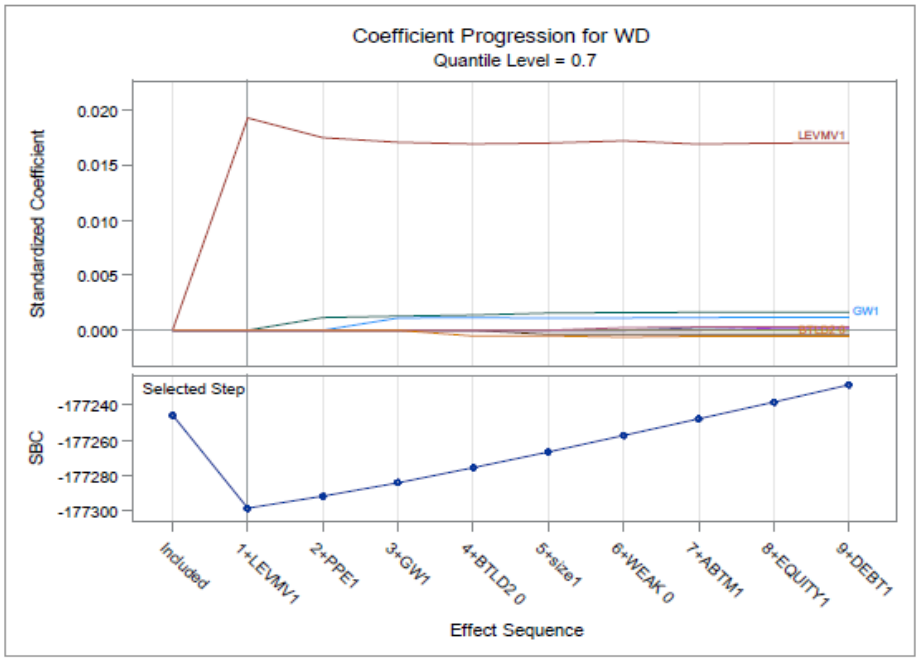
and assesses the relative importance of the effects selected at any step of the selection process. The horizontal axis provides information as to when effects of the selected variables enter the model. The lower plot in the panel shows the stopping criterion used to choose the model and how it changes as variables enter or leave the model. The vertical gray line connecting the upper plot and the lower plot indicates the maximum number of steps, which when reached, denotes the termination of the selection process. In QR-LASSO, the regularization term is set to be a constant value beneath the weighted $L1$ norm in the OLS solution. The effects chosen by then are viewed as the optimal model to explain the response variable for that quantile.

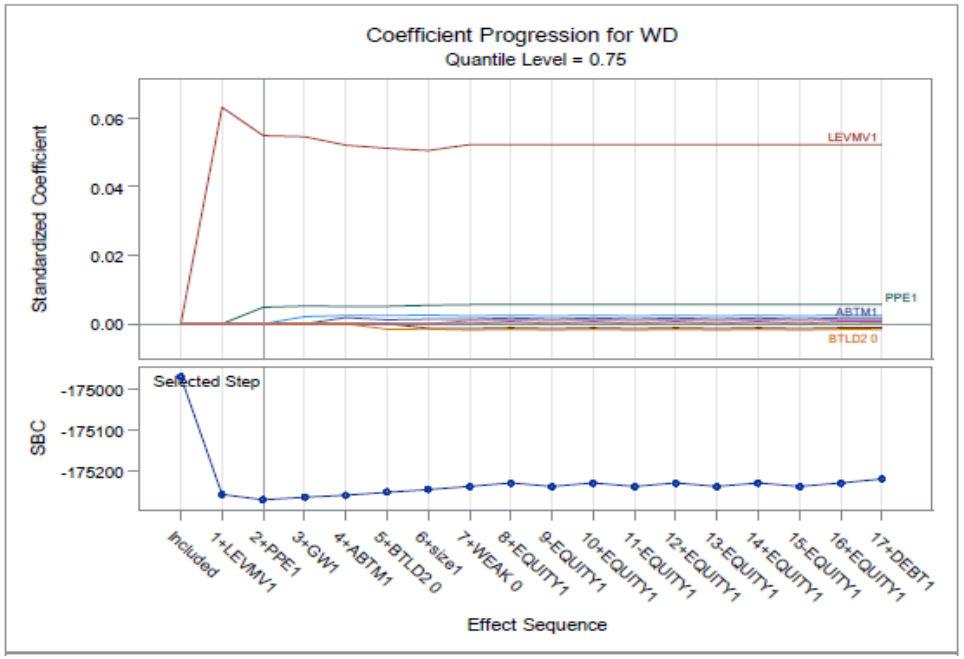
I applied the Adjusted R-square statistic ($Adj.R^2$), Akaike's information criterion (AIC), Corrected Akaike's information criterion ($AICC$) and Schwarz Bayesian information criterion (SBC) in all the tests to evaluate the quality of the models produced by the QR-LASSO. Eventually, all models are selected by SBC, which favors a smaller model than AIC and $AICC$. Moreover, because the information criterion is usually used in the context of comparing models, not as an absolute criterion by itself, the magnitude of the information criterion (AIC/SBC) for a specific model is less of interest.

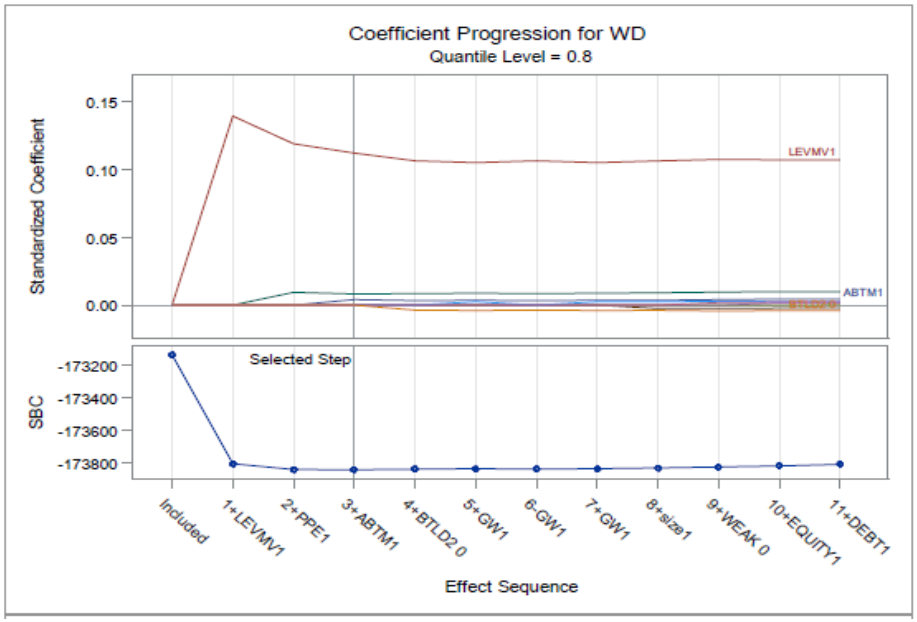
As previously noted, conservative accounting pertaining to asset write-downs disclosure may involve a set of managerial incentives rather than a single constraint. 9 predictors are considered in the model: beginning-of-period ASSET-BTM ($ABTM$), firm size ($SIZE$), financial leverage ($LEVMV$), proportions of goodwill to total assets (GW), the proportion of property, plant and equipment assets to total assets (PPE), operating efficiency ($WEAK$) and accumulated accounting slack ($BTLD$).

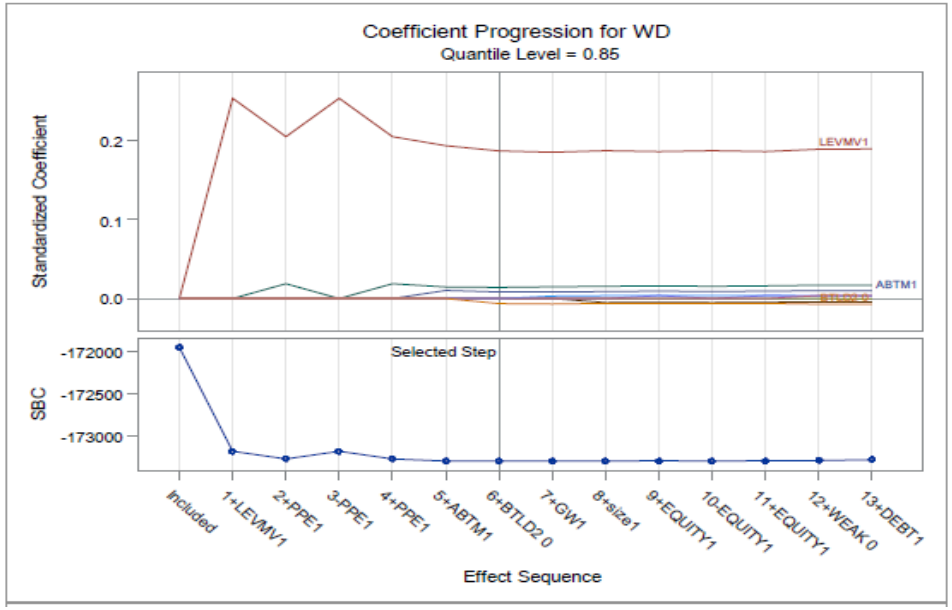
First of all, the financial leverage ($LEVMV$) is the first variable to become active in the effect selection process at all quantiles tested. It can be intuitively observed from all plots that leverage ($LEVMV$) and the proportion of fixed assets (PPE), rather than the beginning-of-period ASSET-BTM ($ABTM$), is the dominant impetuses for asset write-downs. This evidence rejects the findings in Lawrence et al. [2013] who argues the primary influence of accounting standards over management's decision to implement an asset impairment.

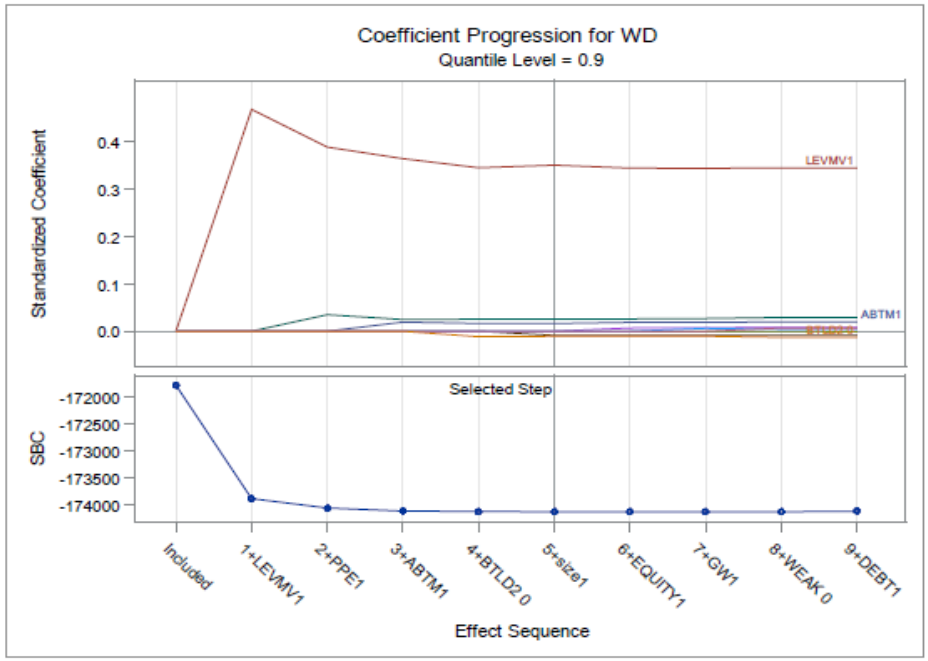
Figure 3

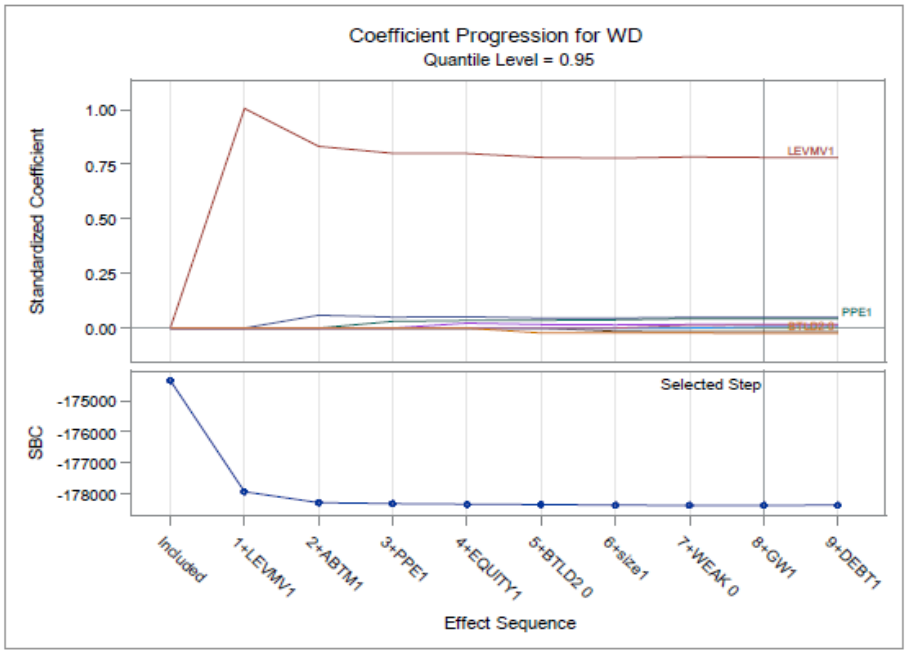

Coefficient Progression for WD
Quantile Level = 0.7
Standardized Coefficient
LEVMV1
GW1
Selected Step
SBC
Included
1+LEVMV1
2+PPE1
3+GW1
4+BTLD2 0
5+size1
6+WEAK 0
7+ABTM1
8+EQUITY1
9+DEBT1
Effect Sequence


Coefficient Progression for WD
Quantile Level = 0.75
Standardized Coefficient
LEVMV1
PPE1
ABTM1
BTLD2 0
Selected Step
SBC
Included
1+LEVMV1
2+PPE1
3+GW1
4+ABTM1
5+BTLD2 0
6+size1
7+WEAK 0
8+EQUITY1
9+EQUITY1
10+EQUITY1
11+EQUITY1
12+EQUITY1
13+EQUITY1
14+EQUITY1
15+EQUITY1
16+EQUITY1
17+DEBT1
Effect Sequence


Coefficient Progression for WD
Quantile Level = 0.8
Standardized Coefficient
LEVMV1
ABTM1
Selected Step
SBC
Included
1+LEVMV1
2+PPE1
3+ABTM1
4+BTLD2 0
5+GW1
6+GW1
7+GW1
8+size1
9+WEAK 0
10+EQUITY1
11+DEBT1
Effect Sequence


Coefficient Progression for WD
Quantile Level = 0.85
Standardized Coefficient
LEVMV1
ABTM1
Selected Step
SBC
Included
1+LEVMV1
2+PPE1
3+PPE1
4+PPE1
5+ABTM1
6+BTLD2 0
7+GW1
8+size1
9+EQUITY1
10+EQUITY1
11+EQUITY1
12+WEAK 0
13+DEBT1
Effect Sequence





Notes:

The upper plots show how the model at a specific quantile evolves through the selection process. I performed QR-LASSO at the 70th, 75th, 80th, 85th, 90th, and 95th quantile, respectively. The vertical axis reveals the fit statistics of the variables and assesses the relative importance of the effects selected at any step of the selection process. The horizontal axis provides information as to when effects of the selected variables enter the model. The lower plot in the panel shows the stopping criterion used to choose the model and how it changes as variables enter or leave the model. The vertical gray line connecting the upper plot and the lower plot indicates the maximum number of steps, which when reached, denotes the termination of the selection process. I used the Adaptive LASSO as the shrinkage method in the selection process. The horizontal axis represents maximum permissible values of the weighted $L1$ norm. Each colored line represents the value taken by a different variable.

WD : asset write-downs measured at the end of fiscal year t /market capitalization measured at the end of fiscal year t−1. $ABTM1$: total assets / the sum of market capitalization and total assets minus common equity, both measured at the end of fiscal year t−1. $SIZE1$: the natural logarithm of market value at the end of fiscal year t−1. $GW1$: book value of goodwill deflated by total assets, both measured at the end of fiscal year t−1. $LEVMV1$: book value of total liabilities deflated by market value of common equity at the end of fiscal year t−1. $WEAK$: a dummy variable, that takes a value of 1 if $LROA_t$ is below 5% and 0 otherwise. $LROA_t$: lag indicator for ROA, computed as the average value of ROA_{t-1} and ROA_{t-2}. $PPE1$: proportion of property, plant and equipment assets to total assets, measured at the end of year t−1. $BTMD2$: a dummy variable which takes a value of 1 if $ABTM_{t-2}$ is higher than 1 and 0 otherwise. $DEBT1$: proceeds from the issuance of bonds in year t−1 deflated by market capitalization of common equity at the end of year t−1. .$EQUITY1$: proceeds from the issuance of common stock in year t−1 deflated by market capitalization of common equity at the end of year t−1.

SBC = n log(SSE/n) + $p\,log(n)$, where n denotes the number of observations and p denotes the number of parameters including the intercept. SSE is the error sum of squares.

As the amount of shrinkage decreases from left to right on the horizontal axis, the model complexity increases. More predictor variables are retained to explain the extreme asset write-downs. However, the selected effects enter/leave the model in different sequences at different quantiles. Particularly, as indicated in Table 4 Panel B, the beginning-of-period ASSET-BTM exceeds the value of 1 around the 80th quantile from where $ABTM$ begins to show statistically significant effects.

With SBC being the stopping criteria, the lower the SBC value, the more the model fits the given data. Hence, the effect selection process stops when dropping or adding any effect increases the SBC statistic. Cumulatively, the variable that denote impact from intangible assets (GW), debt issuance ($DEBT$), and sale of common stock ($EQUITY$) show almost no contribution to asset write-downs.

5.3.2 Test of Nonlinearity by Quantile Regression

In this section, I employ the Quantile Regression (QR hereafter) (Koenker and Bassett [1978]) to identify nonlinearity in the relationship between beginning-of-period ASSET-BTM and asset write-downs. QR estimates conditional quantiles of variables for a probability distribution. Application of QR also paints a broader picture of how asset write-downs interact with the selected variables along lower or upper boundaries.

In Table 4, Panel A reports slope estimates produced by OLS with beginning-of-period ASSET-BTM ($ABTM$) being the only predictor variable. Panel B reports the QR solutions (β_τ^*) when beginning-of-period ASSET-BTM ($ABTM_{t-1}$) is the only predictor for write-downs. Panel C reports QR solutions estimated by models selected by the QR-LASSO. For brevity, only slope coefficients ($\beta_{i,\tau}$) estimated at the 70th, 75th, 80th, 85th, 90th, and 95th quantiles are reported. $Plot$ indicates the plot number corresponding to that quantile. Quantile standard errors are bootstrapped, using 100 replications. WD_{mean} denotes the mean value for the current period asset write-downs, while WD_τ denotes the value of the current period asset write-downs at the τth quantile. $ABTM_{mean}$ ($ABTM_{median}$) denotes the mean value (the median value) of $ABTM_{t-1}$ corresponding to the value of WD_t at the τth quantile. Similarly, $Group_{mean}$ ($Group_{median}$) represents the number of subgroup (specified in Section 4.1) corresponding to samples with asset write-downs from the $(\tau-1)^{\mathrm{th}}$ to the $(\tau+1)^{\mathrm{th}}$ quantile. For example, WD_{80} shows that asset write-downs are 0.0023 at the 80th quantile. On the other hand, $ABTM_{mean}$ at the 80th quantile (1.03) denotes the mean value of ASSET-BTM ratio for samples having recognized asset write-downs at 0.0023. Furthermore, $Group_{median}$ at the 80th quantile

TABLE 4 Test Results

Panel A: Slope Estimates Produced by OLS

	Plot	β_{ABTM}	intercept	WD_{mean}	$ABTM_{mean}$	$ABTM_{median}$	$Group_{mean}$	$Group_{median}$
OLS	Fit a/1	0.0173***	−0.001***	0.0081	1.0305	1.0160	6	6

Panel B: Slope Estimates Produced by QR

$Q_{WD}(\tau|ABTM_{t-1}) = \beta^*_{ABTM,\tau}ABTM_{t-1} + \varepsilon_\tau$ $\tau \in (0,100)$ 1*

τ	Plot	$\beta^*_{ABTM,\tau}$.	intercept	WD_τ	$ABTM_{mean}$	$ABTM_{median}$	$Group_{mean}$	$Group_{median}$
70th	—	0.0019***	−0.1179***	0	0.80	0.80	4.52	5
75th	Fit b	0.0097***	−0.1019***	0.0008	0.97	0.95	5.32	5
80th	Fit c	0.0216***	−0.0759***	0.0023	1.03	1.03	5.57	6
85th	Fit d	0.0433***	−0.0269***	0.0051	1.07	1.03	5.73	6
90th	Fit e	0.0813***	0.0647***	0.0107	1.11	1.06	5.93	6
95th	Fit f	0.1870***	0.3329***	0.0281	1.19	1.12	6.25	6

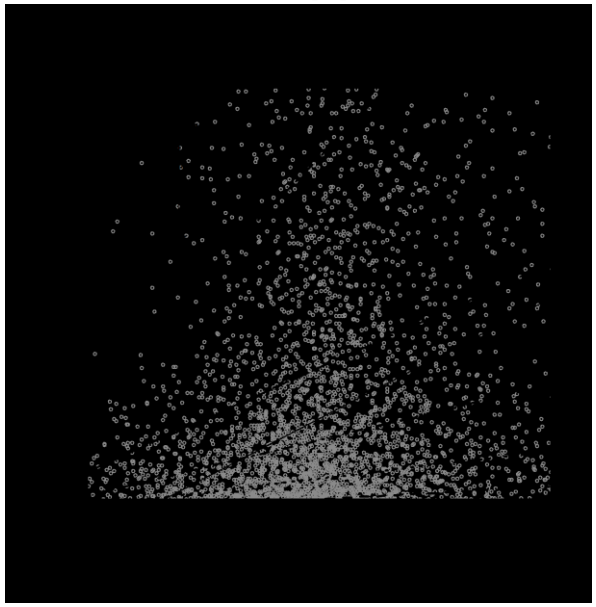
Panel C: Slope Estimates for Models Selected by QR-LASSO

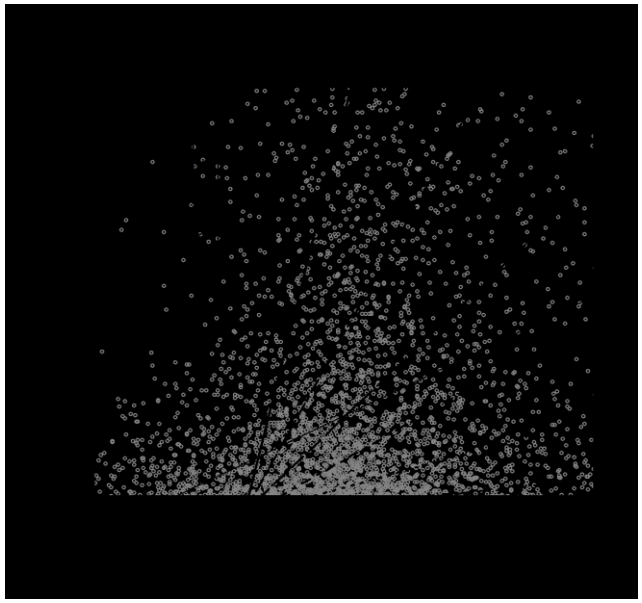
$Q_{WD}(\tau|X_i) = \sum_i \beta_{i,\tau}X_i + \varepsilon_{i,\tau}$ $\tau \in (0,100)$ 1

τ	Plot	$\beta_{LEVMV,\tau}$	$\beta_{PPE,\tau}$	$\beta_{ABTM,\tau}$	$\beta_{BTLD,\tau}$	$\beta_{SIZE,\tau}$	$\beta_{WEAK,\tau}$	$\beta_{EQUITY,\tau}$	$\beta_{GW,\tau}$	intercept	$ABTM_{median}$
70th	Fit 2	0.02***								−0.11***	0.80
75th	Fit 3	0.05***	0.0048***							−0.09***	0.95
80th	Fit 4	0.11***	0.0082***	0.004***						−0.06***	1.03
85th	Fit 5	0.19***	0.0142***	0.008***	0.0064***					−0.003***	1.03
90th	Fit 6	0.35 ***	0.0255***	0.016***	0.0107***	−0.009***				0.103***	1.06
95th	Fit 7	0.77 ***	0.0441***	0.047***	0.0274***	−0.016***	−0.013***	0.078*	0.006**	0.383***	1.12

Notes:

Panel B reports numerical slope estimates for each variable involved. I performed QR test at the 70th, 75th, 80th, 85th, 90th, and 95th quantile, respectively. X denotes a set of independent variables characterized as predictors of conservatism. $\beta^{*}_{ABTM,\tau}$: coefficients on $ABTM_{t-1}$ at the τth quantile when $ABTM_{t-1}$ is the only predictor in the model. $\beta_{ABTM,\tau}$: coefficient on $ABTM_{t-1}$ at the τth quantile. $ABTM_{t-1}$: the total assets / market capitalization + total assets − common equity, both measured at the end of fiscal year t−1. $\beta_{SIZE,\tau}$: coefficients on $SIZE_{t-1}$ at the τth quantile. $SIZE_{t-1}$: the natural logarithm of market value at the end of fiscal year t−1. $\beta_{GW,\tau}$: coefficients on GW_{t-1} at the τth quantile. GW_{t-1}: book value of goodwill deflated by total assets, both measured at the end of fiscal year t−1. $\beta_{LEVMV,\tau}$: coefficients on $LEVMV_{t-1}$ at the τth quantile. $LEVMV_{t-1}$: book value of total liabilities deflated by market value of common equity at the end of fiscal year t−1. $\beta_{PPE,\tau}$: coefficients on PPE_{t-1} at the τth quantile. PPE_{t-1}: the proportion of property, plant and equipment assets to total assets, measured at the end of year t−1. $\beta_{WEAK,\tau}$: coefficients on $WEAK_{t}$ at the τth quantile. $WEAK_{t}$: a dummy variable, that takes a value of 1 if $LROA_t$ is below 5% and 0 otherwise. $LROA_{t}$: lag indicator for ROA, computed as the average value of ROA_{t-1} and ROA_{t-2}. $\beta_{EQUITY,\tau}$: coefficients on $EQUITY_{t-1}$ at the τth quantile. $EQUITY_{t-1}$: sale of common stock deflated by market capitalization, both measured at the end of year t−1. $\beta_{BTLD,\tau}$: coefficients on $BTLD_{t-2}$ at the τth quantile. $BTMD_{t-2}$: a dummy variable which takes a value of 1 if $ABTM_{t-2}$ is higher than 1 and 0 otherwise. WD_{mean}: the mean value for the current period asset write-downs. WD_{τ} : the value of the current period asset write-downs at the τth quantile. $ABTM_{mean}$ ($ABTM_{median}$): the mean value (the median value) of the beginning-of-period ASSET-BTM. $Group_{mean}$ ($Group_{median}$): the mean value (the median value) of the number of subgroup specified in the research design (Step 1). ***, **,* indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively.





Note:

Figures 4 demonstrates the effects of beginning-of-period ASSET-BTM ($ABTM$) on asset write-downs estimated by regular QR analysis, while Figure 5 demonstrates the effects of variables selected by the QR-LASSO estimated by QR analysis on scatter plots of beginning-of-period ASSET-BTM ($ABTM$) and asset write-downs (WD). WD : asset write-downs measured at the end of fiscal year t /market capitalization measured at the end of fiscal year t−1. $ABTM$: total assets / market capitalization + total assets - common equity, both measured at the end of fiscal year t−1. The black solid lines (Fit a and Fit 1) denote solutions derived from OLS. Each line indicates a QR solution corresponding to a specific quantile. Data in QR estimates are standardized to assure variables measured on different scales contribute equally to the analysis.

shows that samples with asset write-downs around 0.0023 (from the 79th to 81th percentile in all samples) belong to Group 6.

In Panel C, it is noteworthy that the slope coefficient on leverage ($LEVMV$) strengthens incrementally as quantiles increase and outweighs that of beginning-of-period ASSET-BTM ($ABTM$) across all quantiles. Comparison of Panel B ($\beta^*_{ABTM,\tau}$) and Panel C ($\beta_{ABTM,\tau}$) reveals that the influence of beginning-of-period ASSET-BTM markedly decreases along the quantiles tested after specific variables are controlled. For instance, slope coefficients estimated at the 95th quantile plunge from 0.1870*** ($\beta^*_{ABTM,95}$) to 0.047*** ($\beta_{ABTM,95}$). Furthermore, when beginning-of-period ASSET-BTM ($ABTM$) accounts for 1% and 4% of total asset write-downs at the 90th and 95th quantiles, leverage ($LEVMV$) accounts for about 35% and 77% of total asset write-downs at the same quantiles, which also reflects the findings in Figure 3 that beginning-of-period ASSET-BTM is not the leading driver for asset impairment. However, effects from the beginning-of-period ASSET-BTM ($ABTM$) do intensify for extreme asset write-downs, as coefficient on $ABTM$ at the 95th quantile ($\beta_{ABTM,95}$) is almost three-fold stronger than that for the 90th quantile ($\beta_{ABTM,90}$ = 0.016***). Furthermore, the last column in Panel C ($ABTM_{median}$) also infers that, in general, samples with extreme asset write-downs (i.e., from the 80th through the 95th quantile) cluster between an area with $ABTM_{t-1}$ ranging from 1.03 to 1.12. The disproportionally increase in coefficients on $ABTM_{t-1}$ (from 0.004*** to 0.047***) in samples with $ABTM_{t-1}$ ranging from 1.03 to 1.12 is thereby consistent with H1 in this study which propose a discontinuity in the relationship between the implementation of asset impairment and the ratio of ASSET-BTM right after this ratio reaches the value of one.

To check the robustness of the models selected by the QR-LASSO, QR estimates produced by Eqs. 1* and 1 are plotted on scatter plots of beginning-of-period ASSET-BTM and asset write-downs in Figures 4 and 5, respectively. In other words, Figures 4 and 5 compare the fitness of estimates produced by the conventional regression model and the quantile regression. The black solid line denotes the solution derived from OLS in both charts (Fit a/ Fit 1). Other lines indicate QR solutions corresponding to a specific quantile.[12] It is evident that QR estimates fit better than those produced by OLS. In the meantime, models selected by the QR-LASSO demonstrate even higher descriptive power than the regular QR analysis. On the other hand, Figure 5 also makes it apparent that regression slopes for all variables at the 99th quantile (Fit 7), which locates directly

[12] I also tried to plot solutions below the 70th quantile for Eq. 1* and Eq. 1, but those lines almost parallel to the horizontal axis and thus are not shown in the figures.

above $ABTM_{t-1}$=1[13], are steeper than other estimates produced at lower quantiles. This further implies that asset write-downs at higher quantiles respond more sensitively to beginning-of-period ASSET-BTM and confirms the presence of a discontinuity in the relationship between asset write-downs and beginning-of-period ASSET-BTM. However, it contradicts findings in Lawrence et al. [2013] in that the implementation of asset impairment accumulates in an area closer to $ABTM_{t-1}$=1. According to Lawrence et al. [2013], extreme asset write-downs (e.g., from the 90th through the 95th quantiles) are more likely to be identified in areas with much higher $ABTM_{t-1}$ (e.g., $ABTM_{t-1}$>1.4). In other words, firms whose assets have greatly deteriorated compared to their market value (e.g., $ABTM_{t-1}$>1.4) have not executed impairments losses appropriately as opposed to their counterparts in the U.S. Figure 6 displays the hypothesized difference between Japan and the U.S. The solid blue line in Panels A and B denotes asset write-downs recognized in year t. The horizontal axis denotes beginning-of-period ASSET-BTM ($ABTM_{t-1}$) scaled by interval of 0.2. The left side to the vertical axis contains samples in Groups 1 through 5, whose $ABTM_{t-1}$ is lower than one. The right side, on the other hand, contains samples belonging to Groups 6 through 8, whose $ABTM_{t-1}$ is higher than one. Panel B is produced based on Lawrence et al. [2013] (Fig. 5 P.127). It can be observed in Panel B that extreme asset write-downs (e.g., from the 90th through the 95th quantiles) are more likely to be identified in areas with much higher $ABTM_{t-1}$ (e.g., $ABTM_{t-1}$>1.4) in the U.S, which attests to the influence of non-discretionary conservatism. On the contrary, test results in this section offer limited evidence with regards to asset write-downs implemented in areas with much higher $ABTM_{t-1}$. The dashed lines in Panel A present two scenarios for effects of non-discretionary conservatism in Japan. The thin dashed line supposes that, although extreme impairment losses gather around an area of $ABTM_{t-1}$=1, listed firms implement asset write-downs more insensitively and thereby exhibit higher level of accounting conservatism in area with considerably high $ABTM_{t-1}$. In contrast, the thick dash line supposes that firms with extreme $ABTM_{t-1}$ possibly delay the recognition of impairment losses which lead to lower level of accounting conservatism in area with considerably high $ABTM_{t-1}$.

To summarize, results of QR test suggest that effects from the beginning-of-period ASSET-BTM ($ABTM$) and accumulated accounting slack ($BTLD$) hold positive on asset write-downs, which shows that GAAP does motivate management against arbitrary accounting choices. However, the weak performance ($WEAK$), another variable which is

[13] The ratio of ASSET-BTM on the horizontal axis in Figures 4 and 5 is standardized to have a mean of $ABTM_{t-1}$=1. Hence, Fit 7 in Figure 5 indicates that asset write-downs at the 95th quantile occur right after $ABTM_{t-1}$ reaches the value of one.

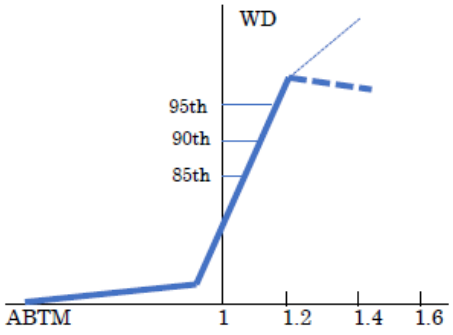
supposed to control for the non-discretionary component in conservatism, shows a countervailing effect on asset write-downs. Furthermore, though beginning-of-period ASSET-BTM accounts for a portion of extreme asset write-downs, it is not the predominant driver of accounting conservatism. These lines of evidence indicate that Japanese impairment accounting practices fit better to the thick dashed line shown in Panel A Figure 6. This may lead us to conclude that high-quality reporting is unlikely to be secured by accounting standards alone, however strictly enforced.

Nevertheless, factors that affect actual asset write-downs are not limited to those proposed in this study. Furthermore, I did not take interaction terms into consideration. Future analyses should explore more variables and employ a better-fitting analytical model.

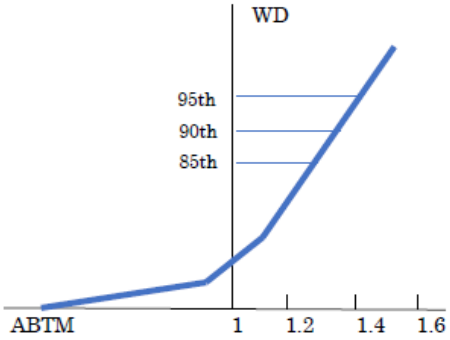
In the following section, I replicate the test suggested in Lawrence et al. [2013] and measure the degree of accounting conservatism in each subgroup defined in Section 4.1 to further confirm effects of non-discretionary conservatism in Japan.

Figure 6

Panel A : Japan



Panel B : U.S.A.



Notes:
ABTM: total assets / the sum of market capitalization and total assets minus common equity, both measured at the end of fiscal year t−1. WD: current asset write-downs deflated by market capitalization measured at the end of fiscal year t−1.

5.4 Test for Non-Discretionary Conservatism

5.4.1 OLS Model

This section performs the same test as in Lawrence et al. [2013] to compare results on the same basis. As with Lawrence et al. [2013], Eq. 2 regresses beginning-of-period ASSET-BTM ($ABTM_{t-1}$) on current asset write-downs (WD_t). Eq.3 is not an empirical equation, wherein the two parameters $\widehat{\delta_0}$ and $\widehat{\delta_1}$ denote the predicted values of the same coefficients produced in Eq.2, respectively. PWD_t denotes the estimate of the

required asset write-downs. AWD_t in Eq.4 denotes the difference between the actual asset write-downs and the estimated asset write-downs.

$$WD_t = \delta_0 + \delta_1 ABTM_{t-1} + \varepsilon_t \quad (2)$$

$$PWD_t = \widehat{\delta_0} + \widehat{\delta_1} * ABTM_{t-1} \quad (3)$$

$$AWD_t = WD_t - PWD_t \quad (4)$$

In other words, a positive AWD indicates that the actual asset write-downs are higher than the predicted value. Had firms with excessively high $ABTM_{t-1}$ implemented impairment losses properly, the mean values for AWD in Groups 6 through 8 should be positive. More importantly, we should be able to observe a spike in the mean values of AWD as $ABTM_{t-1}$ gradually deviated from the value of one. Regression results for this method are summarized in Table 5.

TABLE 5 Test Results (OLS Model)

Panel A : Regression Results of Eq.2

		Japan		U.S.A	
	Exp. sign	Estimate	T − value	Estimate	T − value
$\widehat{\delta_1}$	+	0.0173***	(12.37)	−0.048*** [14]	(−4.92)
$\widehat{\delta_0}$		−0.0097***	(−6.35)	0.018***	(4.59)
$Adj.R^2$		0.0088		0.0247	
N		17152		47259	

Panel B : Computing Results of Eq.3 and Eq.4

	N	WD_t	PWD_t	Exp. sign	AWD_t	T − value
Group1	170	0.0002	−0.0076		0.0077	88.2893***
Group2	371	0.0005	−0.0043		0.0047	32.2874***
Group3	980	0.0009	−0.0008		0.0017	8.7875***
Group4	2280	0.0015	0.0026	−	−0.0011	−8.5881***
Group5	4325	0.0040	0.0060	−	−0.0020	−6.3035***
Group6	4749	0.0102	0.0092	+	0.0010	0.7324
Group7	2328	0.0117	0.0125	+	−0.0009	−0.6381
Group8	1949	0.0218	0.0197	+	0.0021	0.8202

[14] Different from LSS, the data for impairment loss is charged as positive numbers under Japanese accounting standards. Therefore, the expected sign for parameter δ_1 is positive, opposite to that of LSS.

Note:
WD_t : asset write-downs measured at the end of fiscal year t /market capitalization measured at the end of fiscal year t−1. $ABTM_{t-1}$: total assets / the sum of market capitalization and total assets minus common equity, both measured at the end of fiscal year t−1. Test results for the U.S is drawn from Lawrence et al. [2013]. N denotes the number of observations in each ASSET-BTM group. ***, **, * indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively. The samples were separated into eight groups using an interval of 0.2. Then, the eight groups were arranged in an ascending order of beginning-of-period ASSET-BTM. I expected companies belonging to Group 1 to show the least need for asset write-downs, whereas companies belonging to Group 8 would show the opposite tendency. $ABTM_{t-1}$: total assets / the sum of market capitalization and total assets minus common equity, both measured at the end of fiscal year t−1. WD_t : asset write-downs measured at the end of fiscal year t /market capitalization measured at the end of fiscal year t−1. N denotes the number of observations in each ASSET-BTM group. PWD_t represents estimated for asset write-downs required. AWD_t represents the difference between actual asset write-downs and estimated asset write-downs. ***, **,* indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively.

In Panel B, PWD_t shows the predicted means for asset write-downs in each subgroup. AWD_t shows the means of differences between WD_t and PWD_t .The last column presents the T-statistic for a two-tailed test which analyzes whether WD_t and PWD_t are significantly different in each subgroup. The evidence presented in Table 5 is consistent with the prediction in the beginning of this study. As demonstrated in Panel B, the mean values of AWD for Groups 4 and 5 are relatively more negative (−0.0011 and −0.0020) and statistically significant (t-statistic: −8.5881*** and −6.3035***), but are relatively more positive (0.0010) for Group 6, [15] which suggests that asset write-downs undergo a dramatic increase in the region surrounding an ASSET-BTM of one. This evidence is consistent with that of LSS and supports H1 in this study. However, difference between PWD_t and AWD_t is not statistically significant for all three groups with higher than one $ABTM_{t-1}$. Furthermore, mean AWD for Group 7 drops sharply to a negative value of −0.0009, implying asset write-downs may even have declined in Group 7. In other words, contrary to LSS, who asserted that an increase in ASSET-BTM promotes the implementation of asset impairment, evidence produced in this section fails to confirm an intensified positive relationship between WD_t and $ABTM_{t-1}$. Test results in this section also implies that management could have willfully delayed the implementation of an asset's impairment despite a high beginning-of-period ASSET-BTM.

5.4.2 Measuring Conditional Conservatism based on Basu Model

In the absence of a single generally accepted empirical measure of conservatism, I use three alternative measures to more precisely determine the level of conditional

[15] I narrow the interval to 0.1 in Groups 5 and 6 to examine these two groups more accurately. This refinement had no appreciable impact on the results.

conservatism in each group. If non-discretionary conservatism entails appropriate exertions of asset write-downs after ASSET-BTM exceeds one, as depicted in the study of LSS, all measures of Group 8 should be significantly higher than that of Groups 6 and 7.

The first metric measure C is proposed in Pae et al. [2005], who resorts to Basu's [1997] framework.[16] As with Pae et al. [2005], I further divided the samples of each partition into good news and bad news sets. If the return at the end of fiscal year t was negative, it would be subsumed to the bad news set; and to the good news set otherwise. Then, all the necessary data will be substituted into Eq.5 and Eq.6 for each ASSET-BTM partition to calculate measure C — a metric that gauges the degree to which bad news is reported in earnings in a timelier manner than good news.

$$E_{j,t} = \alpha_j + \beta_j R_{j,t} + \varepsilon_{j,t} \quad 5$$

$$c_j = \beta_j^{BD} - \beta_j^{GD} \quad 6$$

The dependent variable E_t represents net income for fiscal year t deflated by the market capitalization at the end of fiscal year t − 1. R_t, the explanatory variable, represents the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t, and ε_t is the residual. The coefficient β_j on R_t denotes the measure of asymmetric timeliness (Basu coefficient), which is developed from the study of Basu [1997]. In the given samples, I estimate coefficient β_j for each subset. That is, β_j^{BD} denotes the timeliness with which bad news is reflected on firm j's income statement, and β_j^{GD} denotes the timeliness with which good news is reflected on firm j's income statement. Accordingly, the measure c_j represents the firm-specific degree of conditional conservatism. A higher measure C implies a stronger tendency toward conditional conservatism. The computing results for measure C are summarized in Table 6.

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[16] Basu [1997] is one of the seminal studies in the literature on accounting conservatism. Basu [1997] developed a measure of "asymmetric timeliness coefficient" by inversely regressing earnings on returns. The following model is the regression equation employed in the study of Basu [1997].

$$E_{i,t} = \alpha_0 + \alpha_1 DR_{i,t} + \beta_0 R_{i,t} + \beta_1 R_{i,t} * DR_{i,t} + \varepsilon_{i,t}$$

E_t denotes the net income in fiscal year t deflated by market capitalization measured at the end of fiscal year t − 1. R_t denotes the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t. DR_t is a dummy variable that equals 1 if R_t is negative and is 0 otherwise. In this regression equation, which is also known as the Basu model, the slope coefficient (β_1) represents the difference in sensitivity of earnings for bad news versus good news.

TABLE 6：Computing Results of measure C

	interval	β_j^{BD}	β_j^{GD}	$c_j = \beta_j^{BD} - \beta_j^{GD}$
Group1	$ABTM_{t-1}$ <0.2	0.0261	−0.00005	0.0262
Group2	0.2≤ $ABTM_{t-1}$ <0.4	0.0291	−0.0027	0.0318
Group3	0.4≤ $ABTM_{t-1}$ <0.6	0.0498	0.0074	0.0424
Group4	0.6≤ $ABTM_{t-1}$ <0.8	0.0436	0.0149	0.0287
Group5	0.8≤ $ABTM_{t-1}$<1	0.0736	0.0125	0.0611
Group6	1≤ $ABTM_{t-1}$<1.2	0.2484	−0.0612	0.3096
Group7	1.2≤ $ABTM_{t-1}$<1.4	0.8146	−0.0438	0.8584
Group8	1.4≤ $ABTM_{t-1}$	0.3865	−0.4072	0.7937
mean		0.2090	−0.0600	0.2690
t-statistic				(2.4423**)
$ABTM_{t-1}$<1		0.0559	−0.0002	0.0561
$ABTM_{t-1}$ ≥1		0.4125	−0.2046	0.6171

Note:

The samples were separated into eight groups using an interval of 0.2. Then, the eight groups were arranged in an ascending order of beginning-of-period ASSET-BTM. I expected companies belonging to Group 1 would show the least need for asset write-downs, whereas companies belonging to Group 8 would show the opposite tendency. $ABTM_{t-1}$: total assets / the sum of market capitalization and total assets minus common equity, both measured at the end of fiscal year t−1. $.E_t$ represents net income for fiscal year t deflated by market capitalization at the end of fiscal year t−1. β_j^{BD}: the degree with which bad news is reported in earnings for group j. β_j^{GD}: the degree with which good news is reported in earnings for group j. c_j: the degree by which bad news is reported in earnings in a timelier manner than good news. ***, **, * indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively

In general, the difference between β_j^{BD} and β_j^{GD} is 0.2690, with a significant t-statistic of 2.4423 (5% two-tailed). The measure C for Group 6 is 0.3096, which is extreme, much higher than that of Group 4 (0.0287) and Group 5 (0.0611). This is in line with hypothesis 1 and LSS, that there exists a substantial leap in asset write-downs around region of having a beginning-of-period ASSET-BTM of one. Similarly, measure C for Group 6 is 0.3096, which comprises only about 36% of that found for group 7 (0.8584). However, measure C for Group 8 drops back to 0.7937. Group 8 contains all samples with beginning-of-period ASSET-BTMs greater than 1.4, which is considered to be the group that confronting the most imminent need for asset impairment. The remarkable decline in measure C for Group 8 strongly suggests that non-discretionary conservatism was overridden by the demand for managerial discretion. In other words, the results of this test invalidate H2 and broadly support the prediction in this study that non-discretionary conservatism does not acquire the same competence in Japanese listed companies as it does in American listed companies.

To check the robustness of the results of measure C, I perform an additional analysis by applying C_SCORE (e.g., Khan and Watts [2009]).

Khan and Watts [2009] incorporated three firm-specific characteristics into the Basu model to estimate an annual across-sectional Basu coefficient. These are firm size ($SIZE$), marker-to-book ratio (MTB), and market value leverage ($LEVMV$). G_SCORE in Eq. 7 denotes the timeliness of good news being reflected on income statements, and C_SCORE in Eq. 8 denotes the incremental timeliness of bad news being reflected on income statements. However, Eq. 7 and Eq. 8 are not regression models. Instead, Khan and Watts [2009] substituted them into the Basu model to estimate parameters μ_i and γ_i (i=1~4). Then, μ_i and γ_i (i=1~4) were in turn substituted into Eq. 7 and Eq. 8 as empirical estimators to compute annual G_SCORE and C_SCORE for each firm/year sample. T_SCORE is thus the sum of G_SCORE and C_SCORE, which measures the degree of conditional conservatism.

Unlike Khan and Watts [2009][17], I employed pooling data to verify the robustness of findings. The model applied in this study is outlined below, where $SIZE_t$ represents the natural log of market capitalization; MTB_t represents the ratio of market capitalization to the book value of common equity at the end of the year t. $LEVMV_t$ represents leverage which is calculated as book value of total liabilities deflated by the market capitalization. In this study, E_t, the dependent variable in Eq. 9, denotes the net income in fiscal year t deflated by market capitalization measured at the end of fiscal year t−1. R_t is the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t. As with Basu [1997], DR_t is a dummy variable that equals 1 if R_t is negative and is 0 otherwise.

$$G\_SCORE=\beta_3 = \widehat{\mu_1} + \widehat{\mu_2}SIZE_t + \widehat{\mu_3}MTB_t + \widehat{\mu_4}LEVMV_t \quad 7$$

$$C\_SCORE = \beta_4 = \widehat{\gamma_1} + \widehat{\gamma_2}SIZE_t + \widehat{\gamma_3}MTB_t + \widehat{\gamma_4}LEVMV_t \quad 8$$

$$E_t = \beta_1 + \beta_2 DR_{i,t} + R_{i,t}(\mu_1 + \mu_2 SIZE_t + \mu_3 MTB_t + \mu_4 LEVMV_t) + DR_t R_t(\gamma_1 + \gamma_2 SIZE_t + \gamma_3 MTB_t + \gamma_4 LEVMV_t) + (\delta_1 SIZE_t + \delta_2 MTB_t + \delta_3 LEVMV_t + \delta_4 DR_t SIZE_t + \delta_5 DR_t MTB_t + \delta_6 DR_t LEVMV_t) + \varepsilon_i \quad 9$$

Table 7 reports the regression results for the estimation of Eq. 9. As with prior studies (e.g., Basu [1997], Khan and Watts [2009]), coefficients on bad news companies are all statistically significant. The coefficient on $DR_t * R_t$ (0.8266***) indicates that earnings

[17] Khan and Watts [2009] estimated the regressions annually to allow the coefficients to vary annually, and report the mean coefficients over an analysis period of 43 fiscal years.

are generally conservatively processed. Khan and Watts [2009] argued that companies holding greater market values are usually either willing or obliged to provide more internal information to reduce information asymmetries. As a result, larger companies are considered to have lower demands for conservatism. Therefore, the expected sign for ($DR_t * R_t * SIZE_t$) is negative and the result (−0.0828***) of this study is consistent with that of Khan and Watts [2009]. They also predicted a positive coefficient for $DR_t * R_t * MTB_t$ ($DR_t * R_t * LEVMV_t$), implying that companies with more growth options (higher leverage) are more in favor of conservative accounting choices. The results of this study (0.0042 and 0.0772***) are identical with their predictions.

Table 9 reports the results for the sum of C_SCORE and G_SCORE (T_SCORE hereafter). Though they do not completely correlate with the rank of ASSET-BTM, Groups 6, 7, and 8 prominently lead in T_SCORE, which is consistent with hypothesis 1. However, when comparing these three groups one by one, their T_SCORE ranking takes up exact the opposite order of that of ASSET-BTM. Group 6 has the highest T_SCORE of 0.2528. This clearly justifies the prediction that non-discretionary conservatism is less directly evident in Japanese listed companies.

TABLE 7 : Regression Results of Eq. 9

	Exp. sign	pooled data	Khan and Watts[2009]
β_1(intercept)		−0.0106	0.083***
$\beta_2(DR)$		0.0341	−0.024***
$\mu_1(R)$	+	0.0368	0.031
$\mu_2(R * SIZE)$	+	−0.0045	0.005**
$\mu_3(R * MTB)$	−	−0.0002	−0.006**
$\mu_4(R * LEVMV)$	−	−0.0098***	0.005
$\gamma_1(DR * R)$	+	0.8266***	0.237***
$\gamma_2(DR * R * SIZE)$	−	−0.0828***	−0.033***
$\gamma_3(DR * R * MTB)$	+	0.0042	−0.007
$\gamma_4(DR * R * LEVMV)$	+	0.0772***	0.033
N		17152	115516
$Adj.R^2$		0.0394	0.24

Note:

N denotes the number of observations in each ASSET-BTM group. E_t denotes the net income in fiscal year t, deflated by market capitalization at the end of fiscal year t−1. R_t is the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t. DR_t is a dummy variable that equals one if R is negative and is zero otherwise. $SIZE_t$ represents the natural log of market capitalization. MTB_t represents market capitalization to book value of common equity at the end of fiscal year t. $LEVMV_{i,t}$ represents leverage, which is calculated as book value of total liabilities deflated by market capitalization at the end of fiscal year t. ***, **, *

indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively.

5.4.3 Measuring Conditional Conservatism based on Accrual Model

Considerable controversy remains as to whether the Basu model yields reliable estimations for conditional conservatism in applying the reverse earnings-on-returns regression. To reduce the noise, I employed the accrual-based regression model proposed in Ball and Shivakumar [2006a].

Accruals are required to best reflect the economic effects of changes in expected future cash flows before actual cash flows occur (the gain and loss recognition role of accruals). Examples of loss accruals are accounts receivable write-downs (i.e., decreases in expected future cash collections), inventory write-downs (i.e., decreases in expected future cash flows from the investment in inventory such as physical loss, damage, obsolescence, and declines in market value), decreases in values of trading securities and derivatives, provisions for litigation settlements, and asset impairment losses. Examples of gain accruals are increases in values of trading securities and derivatives.

In line with Basu [1997], Ball and Shivakumar [2006] argue that conservatism also induces asymmetry in the timeliness of gain and loss accrual recognition in which operating cash flows indicate the bad news and the good news. According to their framework, a decline in operating cash flows, more often than not, indicates a reduction in the asset's value (bad news). Hence, loss accruals should be captured in a timelier manner as conservatism requires management to reflect such value deterioration at the time the information arises. Empirical evidence agrees with their prediction that accruals are also asymmetric in the recognition of losses against gains. One of the limitations of the work of Ball and Shivakumar [2006] is that a rapidly growing company may have negative operating cash flows as it expands, whereas a contracting company may exhibit positive cash flows when spending falls at a faster rate than earnings. This dispels the explicit assumption that negative (positive) change in future expected cash flows is positively associated with decreases (increases) in current-period operating cash flows based on which they established the theory.

Ball and Shivakumar [2006a] suggest three alternative models (i.e., COF model, Dechow and Dichev [2002] model [DD model], and Jones model) and three different measures (i.e., the level of cash flow, changes in the cash flow, and industry-adjusted cash flow) for asymmetrically timely recognition of gains and losses in different combinations to assess conditional conservatism.

In this study, I employed the Jones Model and the Modified Jones Model to examine the degree of conditional conservatism. Besides its higher explanatory power exhibited

in the study by Ball and Shivakumar [2006], only the Jones model controls variations in periodical performance (working capital) that mitigate impact from accrual reversals. Second, it also explains the magnitude of investment in long-lived assets that filter out the effects of depreciation accruals. I don't apply the industry-adjusted measure in this study because all samples had already been divided into smaller groups and further disaggregation would possibly bias the test results for certain groups. Nonetheless, I did not find support for H2 in other combinations including the modified Jones model and the COF modified Jones model. In addition to the dependent variable employed by Ball and Shivakumar [2006] (ACC_t), I also applied other accrual measures to each model (i.e., non-operating accruals proposed by Givoly and Hayn [2000], total accruals proposed by Kothari et al. [2005][18], net income less cash flows from operations ($NI - COF$), and asset impairment losses. The results of those analyses are consistent with the prediction in this study (the results are not documented for brevity). Moreover, consistent with the findings in Ball and Shivakumar [2006], incorporating conditional conservatism into the Jones model appreciably increased the average $R-sq$ value from the non-linear accruals model relative to that based on the traditional linear model. Tables 8 reports the regression results for Eqs. 10 and 11.

$$ACC_t = \alpha_0 + \alpha_1 \Delta CF_t + \alpha_2 \Delta REV_t + \alpha_3 GPPE + \alpha_4 D\Delta CF_t + \alpha_5 D\Delta CF_t * \Delta CF_t + \varepsilon_t \quad 10$$

$$ACC_t = \alpha_0 + \alpha_1 \Delta CF_t + \alpha_2 (\Delta REV_t - \Delta AR) + \alpha_3 GPPE + + \alpha_4 D\Delta CF_t + \alpha_5 D\Delta CF_t * \Delta CF_t + \varepsilon_t \quad 11$$

ACC_t denotes total accruals in year t. It is computed as earnings before extraordinary items minus cash flow from operation. ΔCF_t denotes changes in cash flows from operations. $D\Delta CF_t$ is a dummy variable, taking the value of 1 if ΔCF_t is negative and 0 otherwise. ΔREV_t denotes changes in net sales in year t. $GPPE_t$ denotes gross property, plant, and equipment. ΔAR_t denotes changes in accounts receivable and $controls$ includes all the interaction terms. The variables employed in Eqs. 10 and 11 are all deflated by average total assets in year t. As in Jones model, changes in sales control for non-discretionary accruals of current assets and liabilities, while property, plant and equipment control for the non-discretionary component of depreciation expenses. Again,

[18] Kothari et al. [2005] employed the following method to measure total accruals in year t.
$ACC_t = \Delta CA_t - \Delta Cash_t - (\Delta CL_t - \Delta STD_t) - Dep_t$
ΔCA_t : change in current assets
$\Delta Cash_t$: change in cash and cash equivalents
ΔCL_t : change in current liabilities
ΔSTD_t : change in current liabilities transformed from non-current liabilities
Dep_t : depreciation expenses

Table 8：Test Results for Accrual Model

$ACC_t = \alpha_0 + \alpha_1 \Delta CF_t + \alpha_2 \Delta REV_t + \alpha_3 GPPE + + \alpha_4 D\Delta CF_t + \alpha_5 D\Delta CF_t * \Delta CF_t + \varepsilon_t$ 10

	Group1	Group2	Group3	Group4	Group5	Group6	Group7	Group8
$D\Delta CF_t$	0.0386	−0.005	0.0023	−0.0018	−0.0019	0.0021	−0.0012	0.0124**
ΔCF_t	−0.3544***	−0.5106***	−0.49***	−0.3464***	−0.2971***	−0.6122***	−0.505***	−0.2935***
$D\Delta CF_t * \Delta CF_t$	0.2181	0.0544	0.0924	−0.2416***	−0.4639***	0.2372***	−0.0251	−0.1673**
intercept	0.0077	0.0083	0.0051	−0.0094	−0.0069	0.0109***	−0.0106	−0.0201**
F	8.47	74.72	43.00	121.16	227.31	247.09	109.88	108.00

$ACC_t = \alpha_0 + \alpha_1 \Delta CF_t + \alpha_2 (\Delta REV_t - \Delta AR) + \alpha_3 GPPE + + \alpha_4 D\Delta CF_t + \alpha_5 D\Delta CF_t * \Delta CF_t + \varepsilon_t$ 11

	Group1	Group2	Group3	Group4	Group5	Group6	Group7	Group8
$D\Delta CF_t$	0.1571***	−0.0439**	−0.003	−0.003	−0.0141***	−0.0063	−0.0166*	0.0221**
ΔCF_t	0.8644***	−0.4736***	−0.496***	−0.3222***	−0.2932***	−0.6216***	−0.6481***	−0.1337*
$D\Delta CF_t * \Delta CF_t$	−1.0754**	−0.157	−0.1452	−0.2979***	−0.6655***	0.2106***	0.1693	−0.2749**
$\Delta REV_t - \Delta AR$	−0.0346	0.0306	−0.0493*	0.0201***	0.0261***	0.0267***	0.0578***	0.0224
$GPPE_t$	−0.3301	−0.4324***	−0.0988*	−0.0428*	−0.0444***	−0.1004***	−0.0316	0.2219***
intercept	−0.0579	0.084***	0.0081	−0.0195**	−0.0131**	0.0045	−0.0199*	−0.1005***
F	4.00	38.02	27.06	69.58	175.62	178.95	74.30	38.70

Note:

ACC_t denotes total accruals in year t. It is computed as earnings before extraordinary items minus cash flow from operation. ΔCF_t denotes changes in cash flows from operations. $D\Delta CF_t$ is a dummy variable, taking the value of 1 if ΔCF_t is negative and 0 otherwise. ΔREV_t denotes changes in net sales in year t. $GPPE_t$ denotes gross property, plant, and equipment. Variables are all deflated by average total assets in year t. *hausman* indicates results for the Hausman test which differentiates between fixed effects model and random effects model in panel data. *breusch& pagan* indicates results for the Breusch–Pagan test which checks for the linear form of heteroscedasticity. Coefficients on interaction terms are omitted for brevity.

as with Basu (1997), $D\Delta CF_t * \Delta CF_t$ measures the extent to which firms are conservative. Under conservative reporting, $D\Delta CF_t * \Delta CF_t$ is expected to be positive.

Table 9 reports the comparison of the computing results for the degree of conditional conservatism by each methodology. Columns ticked with boxes are the group with the highest value for that measure. Taken as a whole, groups with higher beginning-of-period ASSET-BTM possess a higher degree of conditional conservatism. However, none of those measures exhibit a monotonic rise in pace with the rise in ASSET-BTM, which confirms the prediction of this study regarding the features of non-discretionary conservatism peculiar to Japanese listed companies. These lines of evidence again indicate that Japanese impairment accounting practices fit better to the thick dashed line shown in Figure 6 Panel A.

TABLE 9：Comparison of Measures for Conditional Conservatism

	c_j	T_SCORE	$D\Delta CF * \Delta CF$	
			Jones model	Modified Jones model
Group 1	0.0262	0.0098	0.2181	−0.748***[19]
Group 2	0.0318	−0.0601	0.0544	−0.157
Group 3	0.0424	−0.0824	0.0924	−0.1452
Group 4	0.0287	−0.0382	−0.2416***	−0.2979***
Group 5	0.0611	0.0860	−0.4639***	−0.6655***
Group 6	0.3096	0.2528	0.2372***	0.2106***
Group 7	0.8584	0.2069	−0.0251	0.1693
Group 8	0.7937	0.1828	−0.1673**	−0.2749**

Note:
The samples were separated into eight groups using an interval of 0.2. Then, the eight groups were arranged in an ascending order of beginning-of-period ASSET-BTM. I expected companies belonging to Group 1 would show the least need for asset write-downs, whereas companies belonging to Group 8 would show the opposite tendency. c_j: measure of conditional conservatism proposed in Pae et al. [2005]. T_SCORE: the sum of C_SCORE and G_SCORE (measure of conditional conservatism proposed inKhan and Watts [2009]). $D\Delta CF_t * \Delta CF_t$: measure of conditional conservatism proposed in Ball and Shivakumar [2006].

It goes without saying that impairment accounting only constitutes one part of conditional conservatism. Since each measure captures conditional conservatism in its entirety, it is quite possible that impairment proceedings may have been performed

[19] Result of Breusch and Pagan test for Group 1 suggests that the ordinary least squares analysis is preferred. Hence, I replaced the test result for Group 1 by fixed effect model (−1.0754**) with that produced by OLS (−0.748***).

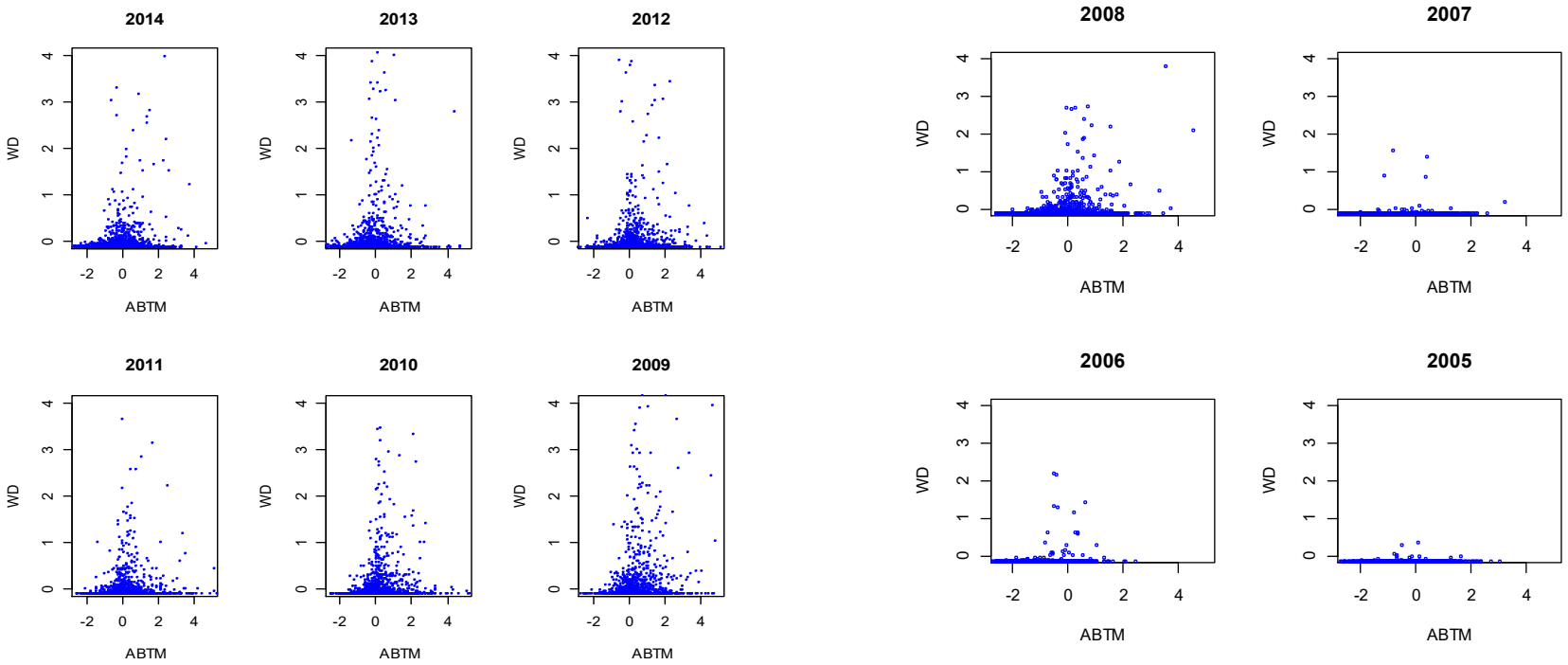
properly in high-rank groups even if their values turn out to be lower. However, once impairment accounting procedures are conducted, a substantial amount of extraordinary loss would be recorded at the end of that fiscal year, accompanied by a rapid decrease in the underlying assets' (group's) book value. It seems evident that impairment accounting produces a great influence on accounting conservatism. In conclusion, the application of those measures, as in this study, is fully justified.

5.5 Effects of the Financial Crisis

This study investigates the magnitude of discretionary asset write-downs for a random sample of Japanese listed companies. However, it is undeniable that a volatile global stock market and the prospect of recession would affect the management's accounting decisions. This section explores the effects from the financial crisis and the subsequent economic malaise.

Figure 7 include scatter plots of $ABTM$ and WD for each sample accounting period (2005~2014). As can be inferred from Figure 7, management did not act promptly according to the accounting standards for asset impairment when it came into effect at the end fiscal year of 2005. However, the shape of the scatter plots for fiscal years 2008 －2014 is in line with that displayed in Figure 1. The historical economic downturn, in a sense, improved compliance with established standards. Nonetheless, whether the accounting practice has been performed as required is open to discussion.

Figure 7



Notes:

Figure 7 demonstrates the correlation between current-period write-downs (WD) and beginning-of-period ASSET-BTM (ABTM). WD : asset write-downs measured at the end of fiscal year t /market capitalization measured at the end of fiscal year t−1. $ABTM$: total assets / market capitalization + total assets - common equity, both measured at the end of fiscal year t−1.

6 Discussion of the Test Results and Conclusions

6.1 Comparison with China and U.S.A

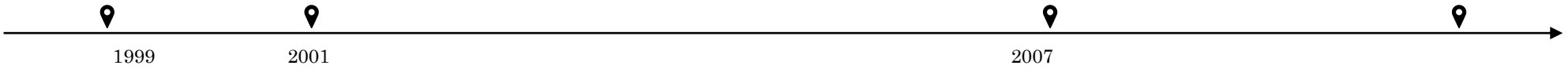
In this section, I perform the QR-LASSO analysis on the U.S and China to ensure the findings in the previous sections. Since evidence provided by Lawrence et al. [2013] is based on a conventional regression method (OLS), it is possible that a closer examination of the relationship analyzed in previous research could further advance our understanding on the nature of asset impairment accounting in the U.S. I chose China as the other test subject because (1) current Chinese Accounting Standards (CAS hereafter)[20] use the international financial reporting standards (IFRS) as a reference. However, China moves closer to the U.S. GAAP with respect to asset impairment accounting in that asset impairment reversals are disallowed under the new CAS framework. Furthermore, goodwill amortization is also prohibited. Instead, goodwill is tested for impairment at least annually. On the other hand, China differs with the U.S in economic origin, legal jurisdiction, and corporate culture, etc. In other words, we should be able to observe a similar trend between China and the U.S if efficacy of non-discretionary conservatism also holds in the Chinese setting (e.g., a stronger influence of $ABTM_{t-1}$).

Samples for the U.S setting are covered in the Compustat database from 2000 to 2016. I remove financial institutions [standard industry classification (SIC) codes between 6000 and 6999] and utility firms [SIC code between 4910 and 4940] from the sample to reduce the analytical complexity. From the remaining firms, I remove firms with missing items on total assets, shareholder equity, and market capitalization. I also require the sample to have positive shareholder equity as of the fiscal year end. The final sample pool consists of 58558 firm/year observations.

Samples from the Chinese stock market include all listed firms. Analysis period is set to 2007-2015 as impairment reversals were previously allowed by the end of fiscal year 2006. Detailed explanation is provided in Figure 8. Accounting data was collected from the WIND database. Banks and financial institutions are precluded from the sample because of their distinct regulatory settings. 17149 firm/year observations pass data screening and are used in the additional analysis. Table 10 presents the process of sample selection.

[20] Chinese GAAP is also known as Chinese Accounting Standards (CASs). It is issued by the Accounting Regulatory Department of the Chinese Ministry of Finance (MoF), which is the sole authority that sets accounting standards in China.

Figure 8:



Beginning in 1999, listed companies were required to recognize asset impairments for accounts receivable, inventories, and both short- and long-term investments.

By 2001, assets that are subject to impairments were extended to fixed assets, construction in progress, intangible assets, and commission loans. Although this expansion in the coverage of assets to be impaired was intended to enhance the quality of accounting information, it tends to provide management with much more discretion managing earnings through the subsequent reversal of previous write-downs.

Beginning on January 1, 2007, all companies listed on the Chinese mainland stock exchanges were required to apply a new set of accounting standards (CAS). CAS No. 8 prohibits listed firms from reversing previous long-term asset impairment write-downs, although it continued to allow reversal of previously recognized asset impairments with regards to current assets.

Table 10 : Sample Selection

Panel A : Process of sample selection U.S.A.		Panel B : Process of sample selection China.	
	initial sample		initial sample
	75356		18737
1 analytical complexity	∆6310	1 required accounting data	∆1354
2 required accounting data	∆10414	2 negative common equity and asset write-downs	∆234
3 negative common equity and asset write-downs	∆74		
total	58558[21]	total	17149

[21] The size of the samples utilized in this study is relatively smaller than that used in Lawrence et al. [2013] (47259 firm/year observations covering an analysis period from 2000 to 2009). This may result from the following two reasons: (1) Data used in this study is collected from Compustat merged database. The base size of the merged database is originally smaller than the annual database; (2) Lawrence et al. [2013] didn't specify if they excluded financial institutions and utility firms from the sample pool.

Table 11：Descriptive Statistics

Panel A：U.S.A

	WD_t	$SIZE_{t-1}$	$ABTM_{t-1}$	$LEVMV_{t-1}$	$EQUITY_{t-1}$	$DEBT_{t-1}$	$BTMD_{t-2}$	$WEAK_{-1t}$	GW_{t-1}	PPE_{t-1}
mean	0.051	5.841	0.753	2.370	0.085	0.821	0.248	0.687	0.104	0.254
p25	0.000	4.324	0.431	0.180	0.000	0.000	0.000	0.000	0.000	0.067
p50	0.000	5.839	0.679	0.465	0.003	0.000	0.000	1.000	0.035	0.169
p75	0.000	7.267	0.946	1.181	0.012	0.109	0.000	1.000	0.164	0.375
Sd.	1.420	2.143	0.610	9.362	2.543	17.441	0.432	0.464	0.144	0.238

Panel B：China

	WD_t	$SIZE_{t-1}$	$ABTM_{t-1}$	$LEVMV_{t-1}$	$EQUITY_{t-1}$	$DEBT_{t-1}$	$BTMD_{t-2}$	$WEAK_{t-1}$	GW_{t-1}	PPE_{t-1}
mean	0.010	14.645	0.623	1.804	0.021	0.011	0.274	0.641	0.004	0.262
p25	0.000	14.037	0.355	0.148	0.000	0.000	0.000	0.000	0.000	0.124
p50	0.000	14.658	0.537	0.338	0.000	0.000	0.000	1.000	0.000	0.229
p75	0.000	15.317	0.766	0.792	0.003	0.000	1.000	1.000	0.000	0.372
Sd.	0.104	1.262	0.479	12.999	0.951	0.383	0.446	0.480	0.022	0.179

Notes:

WD_t：asset write-downs measured at the end of fiscal year t /market capitalization measured at the end of fiscal year t－1. $SIZE_{t-1}$: the natural logarithm of market capitalization at the end of fiscal year t－1. $ABTM_{t-1}$: total assets / market capitalization + total assets －common equity, both measured at the end of fiscal year t－1. $LEVMV_{t-1}$: book value of total liabilities deflated by market value of common equity at the end of fiscal year t－1. $EQUITY_{t-1}$: proceeds from sale of common stock deflated by market capitalization, both measured at the end of year t－1. $DEBT_{t-1}$: proceeds from debt issuance deflated by market capitalization, both measured at the end of year t－1. $BTMD_{t-2}$: dummy variable which take a value of 1 if $ABTM_{t-2}$ is higher than 1, and 0 otherwise. $WEAK_{t-1}$: dummy variable, taking a value of 1 if $LROA_t$ is less than 5%, and 0 otherwise. GW_{t-1}: book value of goodwill deflated by total assets, both measured at the end of fiscal year t－1. PPE_{t-1}: proportion of property, plant and equipment assets to total assets, measured at the end of year t－1.

Table 11 reports the basic statistics for samples analyzed in this section. The mean value of WD_t (0.051) for the U.S is larger in magnitude than that for China (0.010) and Japan (0.0081). This difference may result from the fact that asset impairment accounting is practiced much earlier and more widely in the U.S. compared to the other two accounting regimes. The mean value of $ABTM_{t-1}$ for the U.S (China) is 0.753 (0.623), which is lower than that for Japan (1.0305). On the other hand, it is apparent that U.S listed firms rely on public market more as the mean value of $EQUITY_{t-1}$ (0.085) and $DEBT_{t-1}$ (0.821) are both higher than those for the Chinese ($EQUITY_{t-1}$= 0.021; $DEBT_{t-1}$= 0.012) and Japanese listed firms ($EQUITY_{t-1}$= 0.021; $DEBT_{t-1}$= 0.011).

Figure 9 demonstrates the selection process for the same model applied in Section 5.3.1. Table 12 reports the regression results produced by quantile regression based on the model determined by LASSO.

Figure 9 Panel A: QR plots for U.S.A

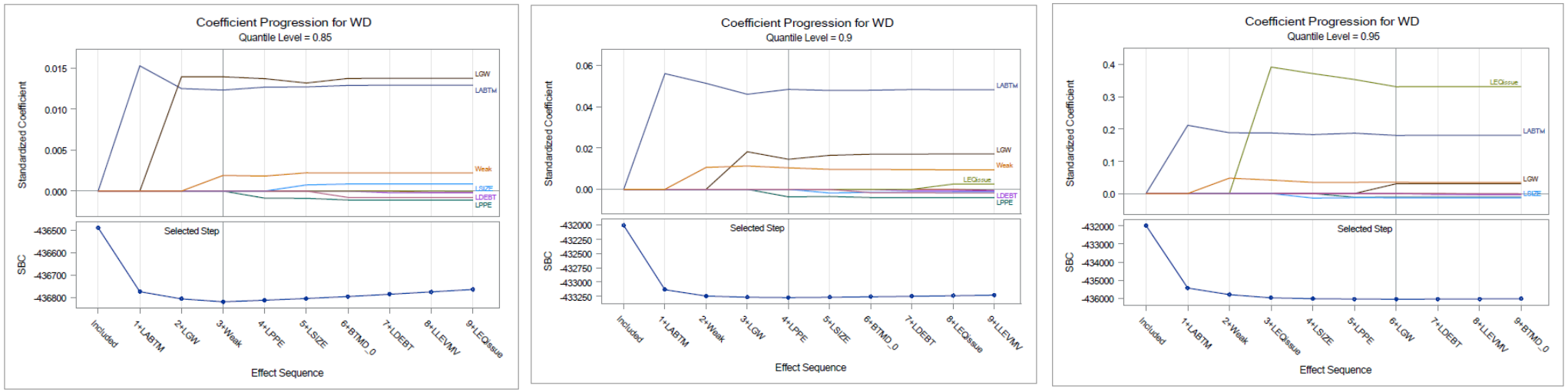


Table 12 : Test Results for QR-LASSO (U.S.A)

Panel A : Slope estimates produced by Quantile Regression

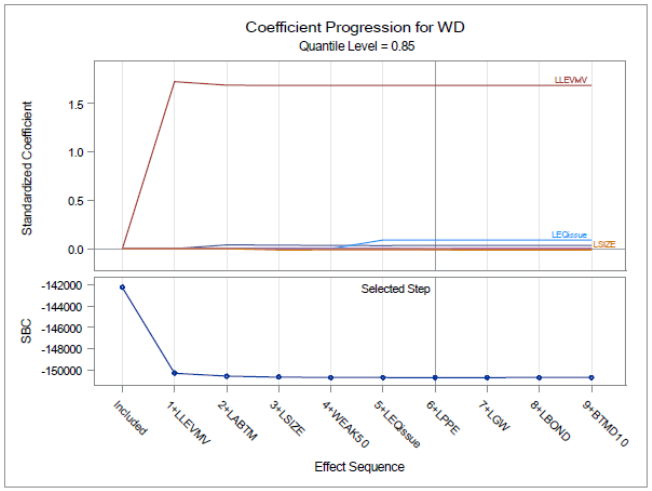
$Q_{WD}(\tau|X_i) = \sum_i \alpha_{i,\tau} X_i + \varepsilon_{i,\tau}$ $\quad \tau \in (0,100)$

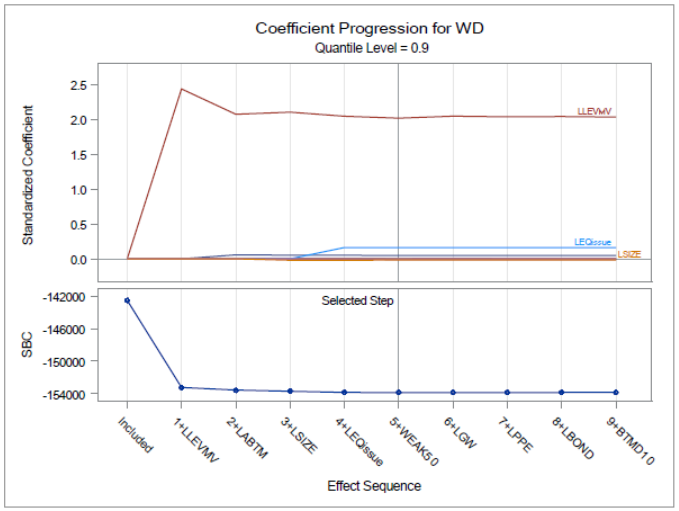
τ	$\alpha_{LEVMV,\tau}$	$\alpha_{ABTM,\tau}$	$\alpha_{PPE\tau}$	$\alpha_{WEAK,\tau}$	$\alpha_{BTMD,\tau}$	$\alpha_{DEBT,\tau}$	$\alpha_{EQUITY,\tau}$	$\alpha_{SZIE,\tau}$	$\alpha_{GW,\tau}$	$P-R^2$
$85th$		0.0025***		0.0004***					0.0034***	0.002
$90th$		0.0126***	−0.0032***	0.0027***					0.0028***	0.010
$95th$		0.0530***	−0.0089***	0.0095***			0.0606*	−0.001***	0.005***	0.040

Notes:

WD_t : asset write-downs measured at the end of fiscal year t /market capitalization measured at the end of fiscal year t−1. $SIZE_{t-1}$: the natural logarithm of market capitalization at the end of fiscal year t−1. $ABTM_{t-1}$: total assets / market capitalization + total assets −common equity, both measured at the end of fiscal year t−1. $LEVMV_{t-1}$: book value of total liabilities deflated by market value of common equity at the end of fiscal year t−1. $EQUITY_{t-1}$: proceeds from sale of common stock deflated by market capitalization, both measured at the end of year t−1. $DEBT_{t-1}$: proceeds from debt issuance deflated by market capitalization, both measured at the end of year t−1. $BTMD_{t-2}$: dummy variable which take a value of 1 if $ABTM_{t-2}$ is higher than 1, and 0 otherwise. $WEAK_{t-1}$: dummy variable, taking a value of 1 if $LROA_t$ is less than 5%, and 0 otherwise. GW_{t-1}: book value of goodwill deflated by total assets, both measured at the end of fiscal year t−1. PPE_{t-1}: proportion of property, plant and equipment assets to total assets, measured at the end of year t−1. ***, **, * indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively.

Figure 9 Panel B : QR plots for China





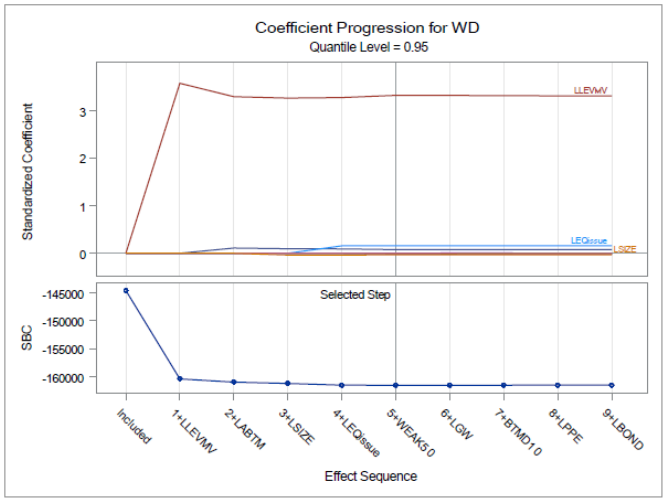


Table 12 (continued) : Test Results for QR-LASSO (China)

Panel B : Slope estimates produced by Quantile Regression

$Q_{WD}(\tau|X_i) = \sum_i \alpha_{i,\tau} X_i + \varepsilon_{i,\tau}$ $\quad \tau \in (0,100)$

τ	$\alpha_{LEVMV,\tau}$	$\alpha_{ABTM,\tau}$	$\alpha_{PPE\tau}$	$\alpha_{WEAK,\tau}$	$\alpha_{BTMD,\tau}$	$\alpha_{DEBT,\tau}$	$\alpha_{EQUITY,\tau}$	$\alpha_{SZIE,\tau}$	$\alpha_{GW,\tau}$	$P-R^2$
$85th$	0.0135***	0.0087**	0.0028***	0.0023***			0.009***	−0.0001**		0.23
$90th$	0.0166***	0.0128***		0.0033***			0.0158***	−0.0001**		0.30
$95th$	0.028***	0.0199***		0.0067***			0.0153***	−0.0002*		0.41

Notes:

WD_t : asset write-downs measured at the end of fiscal year t /market capitalization measured at the end of fiscal year t−1. $SIZE_{t-1}$: the natural logarithm of market capitalization at the end of fiscal year t−1. $ABTM_{t-1}$: total assets / market capitalization + total assets −common equity, both measured at the end of fiscal year t−1. $LEVMV_{t-1}$: book value of total liabilities deflated by market value of common equity at the end of fiscal year t−1. $EQUITY_{t-1}$: proceeds from sale of common stock deflated by market capitalization, both measured at the end of year t−1. $DEBT_{t-1}$: proceeds from debt issuance deflated by market capitalization, both measured at the end of year t−1. $BTMD_{t-2}$: dummy variable which take a value of 1 if $ABTM_{t-2}$ is higher than 1, and 0 otherwise. $WEAK_{t-1}$: dummy variable, taking a value of 1 if $LROA_t$ is less than 5%, and 0 otherwise. GW_{t-1}: book value of goodwill deflated by total assets, both measured at the end of fiscal year t−1. PPE_{t-1}: proportion of property, plant and equipment assets to total assets, measured at the end of year t−1. ***, **, * indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively.

In Figure 9 Panel A, the measure of $ABTM_{t-1}$ is the first predictor to enter the model in the three quantiles tested.[22] These test results are consistent with those suggested in Lawrence et al. [2013], in which $ABTM_{t-1}$ is the primary determinant for asset write-downs. They also point out that firms with weaker financial performance (higher proportion of intangible assets) is more likely to write off underperforming assets in a timely manner. This is also reflected in Panel A in that the variable proxies for weak performance ($WEAK_{t-1}$) and proportion of goodwill (GW_{t-1}) are both included in the model at all three quantiles and are positively related with the implementation of impairment losses. Furthermore, both variables exhibit stronger correlation with WD_t as the quantile increases. For instance, in Table 12 Panel A, estimate for GW_{t-1} at the 95th quantile (0.005***) is almost twice as large as that at the 90th (0.0028***). The increase in economic importance is even more evident for $ABTM_{t-1}$. The coefficient on $ABTM_{t-1}$ at the 95th quantile (0.0530***) multiplies by approximately four times to that at the 90th quantile (0.0126***). These lines of evidence contrast the findings in the Japanese setting, but substantiate those suggested in Lawrence et al. [2013].

Panel B in Figure 9 and Table 12 presents test results for Chinese listed firms. Although the whole framework of asset impairment accounting standards in China is more similar to the U.S. than to Japan, the first variable entering the model is the proxy for leverage ($LEVMV_{t-1}$) at all three quantiles tested. This means the prominent determinant for asset write-downs in the Chinses setting is leverage rather than non-discretionary conservatism. On the other hand, the proportion of goodwill (GW_{t-1}) does not show a significantly positive correlation with the dependent variable (WD_t). Both evidence indicate that accounting practice with regards to asset impairment might differ between China and the U.S.

I repeat the test in Section 5.4.1 (OLS Model) in the US and Chinese settings to verify the hypothetical differences between the U.S and Japan (China) regarding the implementation of asset write-downs. All samples in the US and Chinese setting were divided into eight groups based on the same intervals of 0.2 as in the Japanese setting. Then, the eight groups were arranged in an ascending order of beginning-of-period ASSET-BTM. Companies belonging to Group 1 are expected to show the least need for asset write-downs, whereas companies belonging to Group 8 to show the opposite tendency. AWD_t reported in the third column in Table 13 represents the difference between the actual asset write-downs and the estimated asset write-downs. T-statistic for a two-tailed test which analyzes whether the actual asset write-downs and the

[22] I also performed the same test on lower quantiles (the 80th, the 75th, and the 70th) in the two settings. However, the QR-LASSO analysis fails to produce effective estimates for those quantiles.

estimated asset write-downs are significantly different is also computed for each partition. In other words, AWD_t will be significantly positive if the actual asset write-downs are considerably higher than the estimated asset write-downs. Furthermore, AWD_t in Group 8 should exceeds that in Groups 6 and 7 as companies in Group 8 are expected to recognize more asset write-downs than those in the other two groups with higher than one beginning-of-period ASSET-BTM. I also compute degrees of conditional conservatism for samples with different $ABTM$ at the beginning of fiscal year in the US and Chinese settings following the same procedures suggested in Sections 5.4.2 (Measuring Conditional Conservatism based on Basu Model) and 5.4.3 (Measuring Conditional Conservatism based on Accrual Model). Test results for each measurement used in this study are also presented in Table 13.

TABLE 13 : Comparison of Measures for Conditional Conservatism

Panel A : Test Results of U.S.A						
		AWD_t	c_j	T_SCORE	$D\Delta CF * \Delta CF$	
					Jones model	Modified Jones model
Group 1	$ABTM_{t-1} < 0.2$	0.013***	0.046	−0.025	0.120**	0.265***
Group 2	$0.2 \leq ABTM_{t-1} < 0.4$	−0.001	0.294	−0.031	0.063*	0.059
Group 3	$0.4 \leq ABTM_{t-1} < 0.6$	−0.020***	0.408	0.005	−0.002	0.012***
Group 4	$0.6 \leq ABTM_{t-1} < 0.8$	−0.027***	0.624	0.104	0.208	0.217***
Group 5	$0.8 \leq ABTM_{t-1} < 1$	−0.023***	0.602	0.292	0.115***	0.120***
Group 6	$1 \leq ABTM_{t-1} < 1.2$	0.009	0.693	0.522	0.125***	0.141***
Group 7	$1.2 \leq ABTM_{t-1} < 1.4$	0.063	1.036	0.669	0.171*	0.180**
Group 8	$ABTM_{t-1} \geq 1.4$	0.155**	1.131	1.046	0.181***	0.203***
Panel B : Test Results of China						
Group 1	$ABTM_{t-1} < 0.2$	0.006***	−0.011	0.157	0.075***	0.334***
Group 2	$0.2 \leq ABTM_{t-1} < 0.4$	0.001	0.015	0.077	0.621	0.577
Group 3	$0.4 \leq ABTM_{t-1} < 0.6$	−0.005***	0.103	0.070	0.401***	0.336***
Group 4	$0.6 \leq ABTM_{t-1} < 0.8$	−0.009***	0.156	0.081	0.642***	0.682***
Group 5	$0.8 \leq ABTM_{t-1} < 1$	−0.009***	0.264	0.103	0.197***	0.204***
Group 6	$1 \leq ABTM_{t-1} < 1.2$	−0.001	0.208	0.281	0.578***	0.466***
Group 7	$1.2 \leq ABTM_{t-1} < 1.4$	0.077**	0.382	1.422	0.333***	0.361***
Group 8	$ABTM_{t-1} \geq 1.4$	0.036***	−0.120	0.933	0.304***	0.320***

Note:

The samples were divided into eight groups at the same interval of 0.2. All groups were arranged in an ascending order of beginning-of-period ASSET-BTM. I expected companies belonging to Group 1 would show the least need for asset write－downs, whereas companies belonging to Group 8 would show the opposite tendency. AWD_t: the difference between the actual asset write-downs and the estimated asset write-downs in Eq.4. ***, **,* indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively. c_j: measure of conditional conservatism proposed in Pae et al. [2005]. T_SCORE: the sum of C_SCORE and G_SCORE (measure of conditional conservatism proposed in Khan and Watts [2009]). $D\Delta CF_t * \Delta CF_t$: measure of conditional conservatism proposed in Ball and Shivakumar [2006].

Panel A reports test results for the US setting. In Panel A, AWD_t for Group 8 is significantly positive (0.155**) and is higher than all other subgroups. This is consistent with the findings in Lawrence et al. [2013] that companies with extremely high beginning-of-period ASSET-BTM write off underperforming assets as per instructions stipulated in the accounting standards. This is also consistent with the test results rendered through comparison of different measurement for conditional conservatism. For instance, measure C for Group 8 (1.046) is much higher than that for Groups 6 (0.522) and 7 (0.669), suggesting that firms in Group 8 practice the highest level of conservative accounting. In other words, test results of the OLS model and comparison between measures for conditional conservatism make it clear that the implementation of asset impairment in the US listed firms resembles Figure 6 Panel B. Although Group 8 in the modified Jones accrual model does not exhibit higher level of conservatism, degrees of conservatism increase monotonically in all three groups with extremely high beginning-of-period ASSET-BTM, which is consistent with the findings in Lawrence et al. [2013] but inconsistent with the pattern shown in Japanese listed firms.

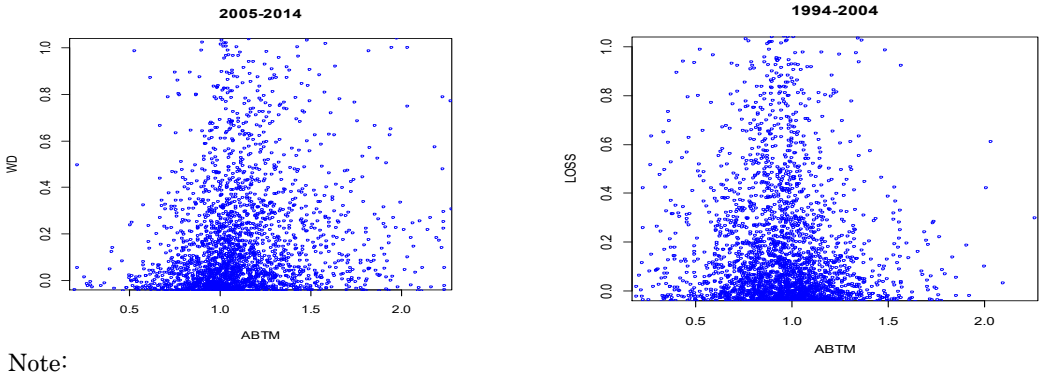
By contrast, in Panel B, which reports test results for the Chinese setting, Group 7 records the highest value of AWD_t (0.077**), indicating that companies in Group 8 do not necessarily recognize more asset write-downs than those in Group 7. Moreover, Group 8 fails to show higher level of conditional conservatism in all the measurement tested in this section. For instance, Group 7 exhibits higher level of accounting conservatism than Group 8 in the measure C (0.382) and T_SCORE (1.422) specification. As discussed in the previous sections, this is similar to the tendency shown in Japanese listed firms (Figure 6 Panel A) but contradicts that found in the US listed firms. In other words, test results in this section indicate a possibility that establishment of similar accounting standards might fail to consolidate accounting information in firms domiciled in different accounting regimes. More importantly, it is also possible that firms faced with similar business environment could demonstrate similar traits of accounting quality even though they are subject to different accounting standards. Future study will further explore effects of institutional difference/similarities on accounting conservatism to confirm the influence of institutional features on accounting quality.

6.2 Effects of the Convergence of Accounting Standards

Academia was generally divided regarding how the mandatory adoption of IFRS affects the quality of earnings (e.g., Ahmed et al. [2013], Barth et al. [2012]). Among them is Skinner [2008], which focused on the adoption of deferred tax accounting in 1998. The author found that deferred tax assets are used as a tool of regulatory forbearance to give the major Japanese banks the appearance of financial health when in fact many were insolvent. Skinner [2008] attributed increases in deferred tax assets to the unique business environment in Japan and managers' overly optimistic estimations of future earnings. His findings also indicate that the application of GAAP-mandated accounting principles might submit to both political and regulatory incentives and firmly established conventionality (e.g., Garrod et al. [2008], Iatridis [2012],and Salter et al. [2013]).

In addition to my findings presented in Section 2, I further extended the analysis period back to fiscal year 1994. Because asset write-down data are separately available only from the year end of 2005, I substituted the extraordinary loss for impairment loss for the accounting period between 1994 and 2004.

Figure 10:



Note:

Figure 10 demonstrates the correlation between current-period write-downs (WD) and beginning-of-period ASSET-BTM (ABTM). WD_t : asset write-downs measured at the end of fiscal year t /market capitalization measured at the end of fiscal year t－1. $ABTM_{t-1}$: total assets / market capitalization + total assets - common equity, both measured at the end of fiscal year t－1.

Both charts demonstrate the correlation between WD_{t} (plotted on the vertical axis) and $ABTM_{\mathrm{t-1}}$ (plotted on the horizontal axis), using past performance figures of Japanese listed companies from fiscal year 2005-2014 and 1994-2004, respectively. While the data points are more clustered before $ABTM_{\mathrm{t-1}}$ reaches one in the 1994-2004 analysis period, the tendencies observed in the areas of an $ABTM_{t-1}$ ratio higher than 1 are identical. This finding confirms the management's reluctance to record extraordinary losses in Japanese listed companies. If changing the accounting rules is not sufficient to alter

customary financial reporting practice, then the adoption of commonly agreed-upon accounting principles around the world might, on all accounts, fail to bring into being a standardized financial reporting system with the same level of reliability.[23]

6.3 Sources of Variations in Accounting Conservatism between Japan and the U.S.

I predict that the differences in accounting standards and/or contractual incentives lead to the discrepancy existing in the practice of asset impairment accounting. I found some support for the opportunistic reporting hypothesis. For instance, firm size ($SIZE$) and weak performance ($WEAK$), which are both supposed to control for the non-discretionary component in conservatism, show countervailing effects in domains with extremely high ASSET-BTM. This result reasonably justifies the opportunistic reporting hypothesis that the effect generated by non-discretionary conservatism may have been nullified; otherwise, actual asset write-downs might have been higher than reported in Japanese listed companies. However, the impact of these two factors is, though statistically significant, limited. Furthermore, significantly negative predictors for middle level asset write-downs (i.e., the $70^{th} - 85^{th}$ quantiles) are indistinct. One of the alternative explanations for this is the unquantifiable differences that exist in accounting practice.

In the U.S, goodwill is not amortized but is annually tested for impairment. Furthermore, impairment loss owing to goodwill is also included in the amount of deductible expense. Consequently, this presents two scenarios in the U.S.: first, management can exercise its discretion to delay the recognition of goodwill impairment loss when impairment indicators arise and second, companies can also reduce taxes to be paid even if goodwill impairment was enforced.

In contrast, in Japan, goodwill has to be equally amortized within 20 years and is exempted from tax deduction.[24] In other words, Japanese companies not only are ineligible for tax shield benefits but also have to deal with a long-standing burden over the bottom line. Differences in tax treatment between the U.S. and Japan may manifest in how companies handle asset impairment as is shown in this study (see Figure 6).

Under GAAP in the United States, impairment tests for assets held for use differ from those held for sale.[25] Japan accounting standards, in contrast, delineate no specific

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[23] I also performed the same tests (QR test and LSSSO analysis) on samples collected from fiscal year 1994 to 2014. Because asset write-down data is separately available from 2005, I substitute the extraordinary loss for impairment loss from accounting period 1994 to 2004. Test results are consistent with the findings in this study.

[24] Only goodwill which is classified as an adjusted asset is required to be included in taxable income.

[25] Assets held for sale must be sold within one year from the date they are classified; hence, they are exempt from impairment tests. Furthermore, they are also reassessed at their book value or net fair

treatments for fixed assets held for sale in. Even so, changes in the stated reason for holding fixed asset can be considered indications of impairment; therefore, Japanese accountants are subjecting more assets to impairment tests. Conceivably, the more assets assigned to an asset group, the more easily can estimation of the entire value of the group be adjusted. In other words, increases in target assets may abet managerial discretion under Japanese accounting standards.

Moreover, under Japanese impairment standards, when more than one business unit is acquired in a deal wherein goodwill is recognized, the book value of that goodwill is allocated pro-rata across business units. Also, the impairment test is performed on a larger unit including both the asset group and its related goodwill. If the amount recoverable from a business unit is below its carrying amount, impairment losses are allocated first to reduce book value of goodwill assigned to it. Any excess over book value of goodwill is distributed pro-rata to the other assets based on their book value. In other words, goodwill is removed from the balance sheet ahead of physical assets. Consequently, higher proportions of goodwill potentially enable management to delay decisions to declare assets impaired.

Additionally, management can also signify its confidence in an asset's (group's) earnings potential by not impairing it, even if it shows signs of depreciation under current assumptions for goodwill amortization. The drawback is that the management can abuse the hypothesis of slowly accumulating internally-developed goodwill to inflate estimates of future cash flow. In other words, amortization of goodwill invites manipulation in recognizing impairments.

Japanese accounting standards tally impairment losses as the carrying amount of an asset (group) minus its recoverable value (the higher of net realizable value or value in use).[26] Since calculation of value in use involves management discretion (i.e., amount of future cash flow, discount rate, and useful life of the primary asset in an asset group), management can minimize impairment losses by adjusting its estimation. In other words, impairment losses recognized by Japanese listed companies can be much lower than those recognized in the United States, other conditions being equal.[27]

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value, whichever is lower. Hence, even such assets are subject to impairment tests, and the impact of such an experiment is negligible.

[26] Recoverable value = net realizable value or value in use , whichever is higher.

Net realizable value= Market Value − Sale-Related Expenses

Value in use = $\sum_n \frac{\text{future cash flows}_n}{(\text{discount rate})^n}$

where n represents the useful life of the primary asset in an asset group.

[27] Unlike USA accounting rules, the cash flow estimation period under Japanese GAAP is the primary asset's remaining useful life or 20 years, whichever is shorter. Japanese impairment standards do not exclude infinite-lived or non-depreciable assets (e.g., land) from candidates for the primary asset of an asset group. Hence, in general, the longer the period of estimated cash flow, the greater future cash in-

Taken as a whole, current accounting practices in Japan may have induced more discretion (although the cause for this change is not limited to these factors). However, some of the effects are empirically difficult to quantize using financial data.

6.4 Future research

To detect non-discretionary conservatism in impairment accounting as a characteristic of Japanese listed companies, I applied QR test, coupled with the QR-LASSO, to evaluate the impact of multiple factors on accounting choices for asset impairment. It provides more detailed insights which cannot be achieved by other ordinary methods prevailing in most previous research. Results of this study substantiate my prediction that non-discretionary conservatism alone is insufficient in eliminating managerial discretion. The tests also show that asset write-downs are more sensitive to debt covenants than to beginning-of-period ASSET-BTM, which complements the argument presented in Roychowdhury and Martin [2013].

Non-discretionary conservatism is embodied in the unbiased application of accounting principles. In addition, non-discretionary conservatism, when embarked upon, will invalidate management discretion, thus affiliating efficient contracts stemming from information asymmetries. However, the most prominent property I found in Japanese listed companies is that management might have studiously avoided certain asset write-downs even when the beginning-of-period ASSET-BTM suggests a dire need for impairment. As pointed out in prior studies, impairment accounting comprises certain amount of estimates and judgements. Other assets (i.e., goodwill and inventories) that are under the influence of such an accounting process are probably also subordinated to managerial discretion. Moreover, management is now empowered to capitalize development costs on the balance sheets, which will contribute to a growing precariousness of earnings in counties that adopt international financial reporting standards. In other words, the argument contained herein breeds new wariness of conditional conservatism and underlines the need to embrace unconditional conservatism to mitigate further volatility in reporting earnings under uncertain economic environments.

I found evidence for the presence of a buffer zone, which indicates managerial opportunism in the timing of asset write-downs. It is also possible that management postpones timely loss recognition out of proper judgements either based on its exclusive

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flows will be. In regards to audit practice, the impact of this difference in estimation period is hard to determine.

understanding of the company or those inherent in an accounting regime), which Roychowdhury and Martin [2013] refers to as “normal conservatism”. More work needs to be done to distinguish the normal component from the buffer zone. On the other hand, despite arduous attempts to accurately measure the degree of conservatism, especially conditional conservatism, no widely accepted metric exists that can properly reflect the degree of conservatism. Until such metric comes into being the development of further research on conservatism will suffer. I will work toward these causes while pursuing fundamental determinants and traits of conservatism in Japanese companies in my future research.

Appendix 1: Introduction to Quantile Regression (QR)

This appendix relates to the technical discussions on Quantile Regression (QR) tests in Section 5. Introduced by Koenker and Bassett [1978] as a location model, QR is a convenient statistical method for estimating conditional quantile functions. A significant feature of QR is that it can provide more accurate information about how each predictor drives the response variable at any quantile. In other words, OLS derives parameter estimates from the conditional mean of the response variable, whereas QR employs the conditional median or any other quantile of the response variable. A typical QR function can be expressed as follows:

$$Q_{Y|X}(\tau) = X\beta_\tau + \varepsilon_\tau \text{ [28]} \qquad 1.$$

where X denotes a design matrix of p predictors and ε_τ denotes the error term for the τth quantile.

For n independent observations, the τth quantile splits the observations into areas τ and 1−τ. QR estimates (β_τ) are determined by solving this optimization problem:

$$\beta_\tau = \min_{\beta_\tau} \frac{1}{n}\left\{\sum_{i:y_i \geq x_{i\beta}}^{n} \tau|y_i - x_i\,\beta_\tau| + \sum_{i:y_i < x_{i\beta}}^{n}(1-\tau)|y_i - x_i\,\beta_\tau|\right\}$$

$$= \min_{\beta_\tau} \sum_{i=1}^{n} \rho_\tau(y_i - x_i^T\,\beta_\tau) \text{ [29]} \qquad 2.$$

where $\rho_\tau(u) = u \cdot \{\tau - I(u<0)\}$ is the tilted absolute function shown in Figure A,

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[28] Suppose Y is a random variable following a cumulative distribution function $F(y) = P(Y \leq y)$. The τth quantile of Y is defined as follows:
$Q_Y(\tau) = F^{-1}(\tau) = \inf\{y \in R\,|F(y) \geq \tau\}$, where $\tau \in (0,1)$ 3.

[29] The conditional expectation loss function for QR is shown as follows:

$$L = E[\rho_\tau(Y - \hat{y})] = (\tau - 1)\int_{-\infty}^{\hat{y}}(y - \hat{y})dF(y) + \tau\int_{\hat{y}}^{\infty}(y - \hat{y})dF(y) \qquad 4.$$

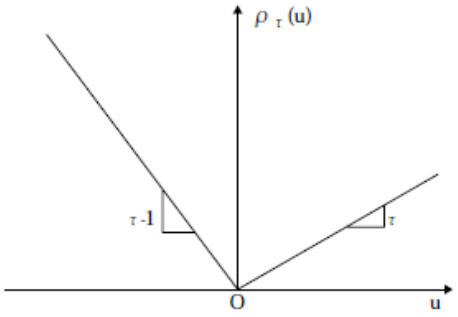
A specific quantile can be found for variable Y by setting the derivative of the expected loss function to 0.

$$\frac{\partial L}{\partial \hat{y}} = (1-\tau)\int_{-\infty}^{\hat{y}} dF(y) - \tau\int_{\hat{y}}^{\infty} dF(y) = 0$$

$$F(\hat{y}) = \tau \qquad 5.$$

and $I\,(u<0)$ is the usual indicator function.[30] Thus far, quantile regression also can be viewed as the extension of LAD,[31] which minimizes a sum of asymmetrically weighted absolute residuals by giving asymmetric penalties $(1-\tau)|\varepsilon_i|$ for over-predicted observations and $\tau|\varepsilon_i|$ for under-predicted observations.

Figure A: Quantile Regression ρ Function



Note: $\rho_\tau(u) = u \cdot \{\tau - I(u<0)\}$ is the tilted absolute function. τ denotes the τth quantile.

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[30] $I\,(u<0) = \begin{cases} I\,(u<0)=1 \; if \; u<0 \\ I\,(u<0)=0 \; if \; u \geq 0 \end{cases}$ 6.

[31] For n independent observations, each observation includes a response and a vector of p predictors. A linear regression function is defined as follows:

$$y_i = \beta_0 + \sum_{j=1}^{p}\beta_j x_{ij} + \varepsilon_i\,,\; i = 1,2,\dots,n. \quad (\; E[\varepsilon_i]=0\,, E\left[\varepsilon_i^2\right] = \sigma^2\,) \qquad 7.$$

ε_i denotes the error term for observation i, measuring the vertical distance between the ith observation (y_i, x_i) and the corresponding point on the regression line. OLS provides solutions that minimize the residual sum of squared errors (RSS).

$$\text{RSS}\,(\beta) = \sum_{i=1}^{n}(y - \beta_0 - \sum_{j=1}^{p}\beta_j x_{ij})^2 = \sum_{i=1}^{n}{\varepsilon_i}^2 \qquad 8.$$

For the OLS estimators to approximate the unknown parameters, values of ε_i must be both independent (exogeneity assumption) and identically distributed (homoscedasticity assumption). Hence, OLS may fail to offer optimal estimators (although still valid) when the homoscedasticity assumption is violated.

The least absolute deviations (LAD) is an alternative to OLS which minimizes the sum of absolute errors (SAE). Unlike RSS, SAE represents the sum of the absolute values of the vertical distance between points in the data set and the corresponding points on the regression line.

$$\text{SAE}(\beta) = \sum_{i=1}^{n}\left|y - \beta_0 - \sum_{j=1}^{p}\beta_j x_{ij}\right| = \sum_{i=1}^{n}|\varepsilon_i| \qquad 9.$$

The symmetry of the piecewise linear absolute loss function implies that minimizing the sum of squared residuals is equivalent to minimizing the median of the absolute residuals. Note that the median is also the 50th quantile. Therefore, we might also define other quantiles as solutions to an optimization problem by imposing an asymmetric penalty on the absolute residuals as quantiles differ from median.

Appendix 2: Introduction to Least Absolute Shrinkage Selection Operator (LASSO)

This appendix relates to the technical discussion on Least Absolute Shrinkage Selection Operator (LASSO) and the adaptive LASSO in Section 5. Developed by Tibshirani [1996b] and Belloni and Chernozhukov [2011], LASSO is a shrinkage method that imposes an $L1$ norm penalty on parameters of an objective function. Shrinkage methods are a kind of continuous subset selection by adding constraints on the value of coefficients. It minimizes the sum of squared errors, subject to the constraint that the sum of absolute values of coefficients ($L1$ norm of the parameter vector) is less than a constant. This constraint removes less important parameters from the model by reducing their coefficients to 0, thereby generating a more sophisticated function. The rationale of shrinkage methods is to trade some unbiasedness for lower variance to improve overall prediction accuracy and to retain variables with impacts large enough to appear in the fitted model. LASSO is highly efficacious in selecting independent variables of greater importance and estimating regression parameters simultaneously. LASSO has been applied to archival research in economics and medicine but not financial accounting.

Consider a linear model for n independent observations, each of which includes a response (y_i) and a vector of p predictors ($x = (\mathrm{x}_1, x_2, \dots, x_p)^T$).

$$y_i = \beta_0 + \sum_{j=1}^{p} \beta_j x_{ij} + \varepsilon_i, \quad i = 1,2, \dots, n. \tag{7.}$$

$\beta = (\beta_0, \beta_1, \dots, \beta_p)^T$ represents a vector of unknown regression coefficients, and ε_i indicates the error term for the ith observation. LASSO estimators are determined by solving the following optimization problem:

$$\min_{\beta} \left\{ \sum_{i=1}^{n} (y - \beta_0 - \sum_{j=1}^{p} \beta_j x_{ij})^2 + \gamma \sum_{j=1}^{p} |\beta_j| \right\} \tag{10.}$$

$\gamma \sum_{j=1}^{p} |\beta_j|$ is the nonnegative penalty term, in which $\gamma \geq 0$ is a tuning parameter that controls the amount of shrinkage: the larger the value of γ, the greater the shrinkage. When γ =0, the estimator is equal to the OLS solution. As γ increases, more shrinkage is imposed on the regression coefficients and the coefficients are shrunk from OLS solution toward 0. Since the intercept β_0 was left out of a penalty term, predictor variables must be standardized in order to strike the intercept. However, the classical L1 norm penalty has been criticized for not being able to simultaneously achieve the oracle property, namely unbiasedness, sparsity and consistency (e.g., Fan and Li [2001]), as it equally penalizes coefficients. For example, large parameters can be overly

penalized which induces unnecessary bias into the estimation, while small parameters be under-penalized at the cost of sparsity. Furthermore, the LASSO solutions tend to remove highly correlated variables altogether or select them all. When related variables are all included in the model, they enter the model with different signs.

The Adaptive LASSO is proposed by Zou [2006] as an extension of the LASSO to attenuate the aforementioned limitations. The Adaptive LASSO overcomes the selection bias in the standard LASSO by assigning a consistent weight to each variable. In other words, such weights can adjust the amount of penalty imposed on each parameter on the basis of their relative importance. The superiority of the Adaptive LASSO has been confirmed in various fields of study. The estimators regularized by the Adaptive LASSO are determined by solving the following optimization problem:

$$\min_{\beta}\left\{\sum_{i=1}^{n}(y - \beta_0 - \sum_{j=1}^{p}\beta_j x_{ij})^2 + \gamma\sum_{j=1}^{p} w_j\left|\beta_j\right|\right\} \quad 11.$$

where weights are set to be $w_j = \left|\hat{\beta}_j\right|^{-\lambda}$ $(\lambda > 0)$.

On the other hand, neither LASSO or the Adaptive LASSO is robust to high-dimensional data set with error distribution (e.g., Li and Zhu [2008]). The Adaptive LASSO regularized quantile regression can be then viewed as a solution to alleviate the drawbacks of LASSO regularized conditional mean regressions. It performs effect selection in the framework of quantile regression. The rationale behind it is to penalize the coefficients at different quantiles by using adaptive weights (e.g., Wu and Liu [2009], Fan et al. [2014]). For a specific tuning parameter γ, the QR-LASSO finds the solution to the following optimization problem at the τth quantile:

$$\min_{\beta_\tau}\ \sum_{i=1}^{n}\rho_\tau(y_i - x_i^T\beta_\tau) + \gamma\sum_{j=1}^{p}\widetilde{w}_j\left|\beta_\tau\right| \quad 12.$$

where weights are set to be $\widetilde{w}_j = \left|\hat{\beta}_\tau\right|^{-\lambda}$ $(\lambda > 0)$.

Appendix 3: Differences in the process of impairment recognition

Table A presents differences that are considered as important between US GAAP and Japan GAAP.

TABLE A: Differences considered as important

USA GAAP	JAPAN GAAP
Under USA GAAP, the impairment tests for assets to be held and used differ from those held for sale.	Japan impairment standards do not have such a separation for assets tested for impairment.
The impairment provisions of ASC 360-10 generally apply to long-lived assets other than goodwill or other intangible assets that are not being amortized. However, asset groups may include assets and liabilities outside the scope of ASC 360-10 (for example, goodwill — if certain conditions are met — and other non-amortizing intangible assets). In this case, the impairment loss will reduce the carrying amount of the long-lived assets of a group covered by ASC 360-10 on a pro-rata basis using the relative carrying amounts of those assets. Thus, in no circumstance will goodwill, indefinite-lived intangibles or other assets excluded from the scope of ASC 360-10 (or liabilities if part of an asset group) be affected by an impairment loss recognized under ASC 360-10, even if those assets or liabilities are included in the asset group being tested for recoverability.	Japanese impairment standards also apply to goodwill. Furthermore, when more than one business units is acquired in the deal where goodwill is recognized, the book value of that goodwill shall be allocated to those business units on a pro-rata basis, and the impairment test should be performed to a larger unit including both the asset group and its related goodwill. Finally, the amount of impairment loss increased by adding goodwill to an asset (group) should be allocated to goodwill first, and the excess amount over the book value of the goodwill will be allocated to the other assets on a pro-rata basis.
According to ASC 360-10, only long-lived tangible asset being depreciated (or identifiable intangible asset being amortized) can be the primary asset of an asset group, which means property such as lands, which do not have a valid period, cannot be a primary asset.	Japanese impairment standards for fixed assets do not exclude non-depreciable assets as asset candidates for the primary asset. Therefore, while the cash flow estimation period is based upon the primary asset's remaining useful life under USA GAAP, the cash flow estimation period under Japan GAAP is determined by either remaining useful life of the primary asset or 20 years, whichever is shorter.

When an asset (group) is deemed unrecoverable, ASC360-10 requires management to calculate impairment loss as the excess of the carrying amount of an asset (group) over its fair value.	Japan requires management to calculate it as the excess of the carrying amount of an asset (group) over its recoverable value (either net realizable value or value in use, whichever is higher[32]).

[32] Recoverable value = net realizable value or value in use , whichever is higher.
Net realizable value= Market Value − Sale-Related Expenses
Value in use = Σ_n (future cash flows$_n$/discount rate^n)
where n represents the useful life of the primary asset in an asset group

Appendix 4: Similarities in the process of impairment recognition

1. Both USA and Japan standards require management to group assets at the lowest level where there are identifiable cash flows that are largely independent of the cash flows of other assets (groups). Moreover, they both acknowledge that grouping assets involves a significant amount of judgement.

2. To assist management in determining when assets should be reviewed for impairment, both USA and Japan standards provide examples of events or changes in circumstances that indicate that impairment might exist. However, the list is not meant to be all-inclusive and management should be alert to potential impairment indicators unique to its business circumstances.

3. A fixed asset (group) is tested for recoverability only when indicators of impairment are present.

4. After an impairment loss is recognized, the adjusted carrying amount of the asset shall be its new accounting basis. Thus, future depreciation or amortization would be based on the asset's new cost basis.

5. Impairment loss is recognized if the undiscounted cash flows used in the test for recoverability are less than fixed assets' (group's) carrying amount

6. Companies may use their own assumptions in estimating future cash flows. Such estimations of future cash flows are used in both impairment tests and the measurement of impairment loss. ASC820 employ the same approaches to estimate fair value for long-lived assets as Japanese standards use to estimate use value for fixed assets (estimate future cash flows are adjusted to present value by a certain discounted rate).

7. Subsequent reversal of a previously recognized impairment loss is prohibited.

Chapter 3
Influence of Ownership Structure on Accounting Conservatism

1. Introduction

This study seeks to explore the influence of ownership structure on accounting conservatism by examining two relatively unique ownership structures. This study also investigates the role of debt contracting and the regulatory efficacy of accounting standards in navigating management's compliance to timely loss recognition. Extant literature grounding on the Anglo-America setting maintains that a firm's financing position affects its choice over accounting conservatism. Prior research also suggests that accounting standards activate conformity in speed with which bad news is reflected into earnings. However, effects of the abovementioned mechanism distinguish in counties with different legal and institutional features, which makes it clear that findings based in a specific disclosure environment requires careful interpretations when they are to be applied in another accounting regime. This paper focuses on effects of ownership structure, which is a crucial building block of corporate governance, on accounting conservatism. I find that the proportion of stable shareholdings (state shareholdings) is negatively related with the degrees of conservative accounting in Japanese (Chinese) listed firms. Moreover, debt contracting is latent in disciplining conservative accounting practice, which could be attributed to the unique financing arrangements in Japan and China. Nonetheless, accounting standards restore the credibility of accounting reports in Japan owing to the strict regulatory enforcement. In comparison, accounting standards lack equal deterring power against managerial discretion in China. Finally, although foreign equity displays little relevance to the level of accounting conservatism in both counties, it exhibits higher demands of conservative accounting information whenever there is a change in capital structure or a well-rounded disclosure environment.

Great strides have been made in demonstrating empirically the effects of ownership on accounting conservatism in both Japan and China. For instance, Usui [2015] document time series characteristics of accounting conservatism in Japan and investigate effects of ownership structure on the level of accounting conservatism. His research reveals how conflicting interests of different stakeholders (e.g., management vs. creditors, shareholders vs. employees, or large shareholders vs. minority shareholders) affect the timeliness of bad news to be reflected in the earnings. Findings in Usui [2015] confirm that firms with more powerful shareholders or larger institutional shareholders exhibit higher level of accounting conservatism. On the other hand, Cullinan et al. [2012] examine influence of controlling shareholders on accounting conservatism in Chinese

listed firms using samples from fiscal year 2007 to 2009. They find that the presence of controlling shareholders leads to lower degrees of conservatism.

This study relates to both studies but extends their findings in the following three ways. First, this study not only focuses on the effect of a specific type of ownership but also seeks to explore the cross-effects of debt contracting and accounting standards disciplines. As suggested in previous studies, accounting conservatism differs between firms with different capital structure (e.g., Ahmed et al. [2002], Usui [2015], Ishida [2016]). However, the unique firm-bank relationship in Japan and China, where banks have better communication channels with the firms other than public accounting reports, may considerably alleviate information asymmetricity between firms and the creditors. The deterioration in creditors' effectiveness to monitor could be even more profound in firms where shareholders are more influential. Furthermore, firms domiciled in different countries often face different accounting practices and regulations. Therefore, whether accounting standards could still play an active role in facilitating contracting beyond its institutional structure is also of research interest. This study aims to disentangle how these factors, when combined, predict the level of accounting conservatism chosen by the management in the Japanese and Chinese settings.

Second, this study employs two market-based measures and two accounting-based measures in view of previous studies on quantitative characteristics of accounting conservatism. The first model is based on Basu [1997] which evaluates firm's sensitivity to bad news against good news using an earnings-return regression. The second measure T_SCORE and the third measure CONSKEW are proposed in Khan and Watts [2009] and Givoly and Hayn [2000], respectively. T_SCORE is developed under Basu's [1997] framework and takes firm specific fundamentals into consideration. CONSKEW, on the other hand, measures the difference between cash flows and earnings. As documented in Givoly and Hayn [2000], earnings will be more negatively skewed when unrealized economic losses are recognized in the financial statements in a timelier manner than economic gains (e.g.,Ball et al. [2000a], Lang et al. [2006]). To ensure the robustness of the findings in this study, I also employed an accrual-based model suggested in Ball and Shivakumar [2006b], which assesses the asymmetric timeliness of bad news to be charged into earnings through accruals. To analyze influence of ownership type on accounting conservatism, this study also employs a model selection technique (i.e., GLM-SELECT).

Finally, when Japan has attracted a big chunk of foreign equity, China has also become one of the most important destinations of foreign investment. With the growing importance of foreign holdings in both countries, an investigation on how entry of foreign

investment affects accounting quality will further extends our understanding on the impact of ownership over accounting conservatism. To this end, this study also seeks to shed new light on the role of foreign investors and how they can improve accounting conservatism with regard to differences in institutional infrastructure.

Empirical results are generally consistent with my expectations with regards to stable and state shareholdings. Moreover, findings in this study offer substantial support that firms with a dual listing status are more likely to recognize bad news in a timelier manner in China. However, no significant evidence is found to explain effects of foreign shareholdings on accounting conservatism in this study. Prior studies suggest that the involvement of foreign investors in corporate governance practice can be an effective way to lower agency cost. Evidence in this study suggests that, despite their expertise and experience, foreign investors may still play a secondary role in corporate monitoring as they still lack opportunity to observe day-to-day accounting practices.

Unlike the cross-country focus of several prior studies (e.g., La Porta et al. [1999], Fan and Wong [2002], Thomsen et al. [2006], Bushman and Piotroski [2006], Lee and Chung [2017], Chen et al. [2017]), this study analyzes the cross-sectional effects of ownership on accounting conservatism in each country separately. This approach allows me to eliminate cross-country confounding factors and thereby exploit firm-level variation in ownership and accounting conservatism. Furthermore, as these countries are among the biggest economic powers in the world, a deep understanding of their institutional features is worthy of the endeavors. Overall findings in this study suggest that conservatism will benefit capital markets more when proper enforcement mechanisms are in place.

Findings in this study shed new insights to the existing conservatism literature on the nature of debt contracting, i.e., creditors' monitoring function in different information environment where creditors' economic gains coincide with those of large shareholders. These findings are of potential interest to both regulators and international investors.

More importantly, this study adds to our understanding on the impact of institutional differences on accounting quality. While authorities and academia strive to accommodate international accounting standards, progress may lag on a practical level. In other words, imitating and adopting newer accounting standards cannot really account for changes in earnings quality, due to the environments of various countries in which economies grew in indigenously.

The remainder of this study proceeds as follows. Section 2 describes the features of the institutional settings in Japan and China. Section 3 develops the hypotheses and specifies the measures and empirical models used for hypothesis testing. Section 4

summarizes the sample selection process and data sources and presents the descriptive statistics. The test results of the main regressions, and robustness checks are presented in Section 5. Finally, Section 6 concludes and presents implications of the findings.

2 Literature Review

2.1 International Studies

The effects of ownership on financial reporting received prominence from the work of Jensen and Meckling [1976]. As ownership structures are inherently more disperse in Anglo-American settings, the research interest of the literature mainly has been confined to managerial ownership (e.g., Warfield et al. [1995], Cheng and Warfield [2005],Erickson et al. [2006], Lafond and Roychowdhury [2008], Kim and Lu [2011], Kannan et al. [2014], and Basu et al. [2016]). Other studies have shown that ownership structure explains, for example, earnings informativeness (e.g., Fan and Wong [2002]), analyst following (Lang et al. [2004], Boubaker and Labégorre [2008]), dividend policy (e.g., Faccio et al. [2001]), and corporate social responsibilities (e.g., Surroca et al. [2013]). However, research attempts to explore the influence of ownership on accounting conservatism is still limited. García Lara et al. [2009] argue that strong corporate governance facilitates conservatism, and not vice versa. The authors develop an aggregate measure comprised of antitakeover protection and CEO involvement and observe an overall positive relationship between governance and conservatism. Velury and Jenkins [2006] examines the impact of institutional monitoring on earnings quality (i.e., reporting timeliness). They find that, while institutional ownership is positively correlated with timely disclosure in general, such effects are impaired as institutional ownership becomes concentrated.

On the other hand, a growing body of literature has sought to understand the economic effects of concentrated ownership on a firm's informational environment across the globe.

The presence of large shareholders is traditionally viewed as optimal as large shareholders are more incentivized than small shareholders to engage in monitoring activities (e.g., Shleifer and Vishny [1986], Huddart [1993]). In other words, the theoretical advantage of concentrated ownership is that bigger shareholders have higher incentives and ability to become effective monitors of management. However, the interests of large shareholders are not necessarily aligned with those of other investors, and therefore, it is inconclusive whether the presence of large shareholders reduces information asymmetry.

For instance, Haw et al. [2004] show that large control ownership, in the absence of

extra-legal regularities, induces aggressive income management for a large sample from 9 East Asian and 13 west European economies. [33] In addition, combining firm-level data and country-level institutional differences, Attig et al. [2008] examine the influence of multiple large shareholders on the cost of equity financing in 21 countries in East Asia and Europe[34] and confirm that the presence of large shareholders lowers equity cost. However, Attig et al. [2008] suggest that it is more likely in firms in which voting power is proportionate to the voting size between large shareholders. Boubaker et al. [2014] investigate the relationship between concentrated ownership and earnings management in a French setting. The authors conclude that controlling shareholders choose to conceal opportunistic practices to prioritize their own interests.

Collectively, the effects of ownership concentration are relatively sensitive to institutional arrangements across countries and regions, such that these empirical findings are not readily generalizable. In this sense, Japanese and Chinese settings provide an interesting context for examining the influence of ownership structures on firm performance. The following subsection summarizes some institutional features that are salient to Japan and China and discusses how these features affect management's disclosure decisions.

2.2 Ownership Structure in Japan

While accounting standards that originated in common-law countries (e.g., the US, UK, Australia, and Canada) prioritize shareholder protection, accounting standards based in code-law countries (e.g., Germany, France, and Japan) are characterized as stake-holders oriented (e.g., Ball et al. [2003]).

Japanese corporate ownership is typically concentrated among strategically oriented shareholders rather than fragmented among liquid investors, which has been widely known as cross shareholding. Japanese corporate ownership differs from the structure of multiple large shareholdings in the U.S. in that: (1) a cross-shareholder holds the shares as a friendly insider sympathetic to incumbent management; (2) when disposal of shares is inevitable, a cross shareholder consults the firm or at least gives notice of its intention to sell; (3) rather than focusing on returns to equity or the control rights of the firm, cross shareholders focus on enhancing amicable relationships with each other and

[33] The analysis subjects in East Asia are Hong Kong, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand; the analysis subjects in Europe include Austria, Belgium, Finland, France, Germany, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland, and the U.K.

[34] The analysis subjects in East Asia are Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand; the analysis subjects in Europe include Austria, Belgium, Finland, France, Germany, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland, and the U.K.

emphasize stable development through cross-shareholdings; (4) there is a strong bank influence on firms affiliated to the same large business groups (e.g., Prowse [1992], Sheard [1994], Yafeh [2000]). As documented by Aoki [1990] and Guo et al. [2015], cross shareholding ownership alters the corporate governance environment in Japanese firms in two critical ways. First, it makes hostile take-over attempts difficult which enables management to focus on long-term value creation for the firm without paying undue attention to short-term pressures arising from the market for corporate control. For example, Jiang and Kim [2000] argue that to the extent that cross-shareholdings improve the flow of information among investors in the same business group, it substantially reduces information asymmetry and enhances the relevance of accounting information. Shuto and Kitagawa [2011] find that institutional ownership alleviates bond investors' concern about management incentives and increases debt-contracting efficiency. On the other hand, such arrangements imply that cross shareholders take only a passive role in corporate governance, thereby delegating considerable discretion to management (e.g., Denis and McConnell [2009]).

Teshima and Shuto [2008] and Shuto and Takada [2010] present initial evidence of the relationship between managerial ownership and conservatism for Japanese listed companies. These findings support the incentive alignment perspective regarding managerial ownership in which the asymmetric timeliness of earnings is inversely associated with extremely high or low managerial ownership. Evidence from Shuto and Iwasaki [2014] suggests that management has a strong propensity for earnings smoothing once the proportion of stable shareholders begins to increase. Usui [2015] explore effects of both internal and external stakeholders on accounting conservatism in Japanese listed firms. The author incorporates a time-serious feature into Basu's [1997] model to measure variation in effects of stakeholders on accounting conservatism over time. In addition, evidence provided in Usui [2015] supports the conjecture that conditional accounting conservatism varies across firms with different ownership structure in Japan. A recent study by Nagata and Nguyen [2017] examines the influence of ownership structure on management earnings forecasts and find that firms with greater bank ownership are more likely to withhold private information and make material changes in their management forecasts less timeously.

As much as there is wide support for theory based on the singularity of ownership in Japan, recently, research has placed an on-going evolution of the Japanese business system under the spotlight (e.g., Noda [2013], He and Shen [2014], Ullah [2017]). Much of this emerging literature focuses on the role of foreign investors in strengthening monitoring mechanisms to deter management's opportunistic behavior. On the other

hand, skepticism remains as to how much shareholder capitalism could be diffused to Japan. Ahmadjian and Robbins [2005] set out to investigate the effects of foreign ownership on firm behavior under a typical stakeholder-oriented Japanese institutional framework. Using a sample set of 1108 observations from 1991 to 2000, the authors find that the influence of foreign investors on disinvestment is restricted by the level of existing domestic shareholders. These findings are complemented by Desender et al. [2016]. Whilst acknowledge that foreign ownership contributes to changes in governance processes, Desender et al. [2016] also suggest that the effects of foreign investors are profound only for firms with lower domestic ownership concentration.

2.3 State-ownership and Cross-listing in China

Although there has been remarkable economic growth in China, a large number of listed companies in China's stock market are still under the substantial control of central or local government or government-controlled institutions (e.g., Bai et al. [2004], Chen et al. [2009]). This unique information environment, like that in Japan, insulates management from capital market pressures and threats of takeovers such that management is able to pursue its own objectives which are often at odds with shareholder value maximization (e.g., Xu and Wang [1999], Jiang et al. [2008], Yu [2013], Cao et al. [2014]).

An often-cited argument on the effects of state ownership is that managers are more concerned about their political careers than about fiduciary duties such that they are prone to opacity and are more likely to suppress negative information during their tenure (e.g., Chen et al. [2005], Li and Zhou [2005], Piotroski et al. [2015]). Ball et al. [2000b] add to this perspective and attribute the lack of timely incorporation of economic losses to managers' incentives to heighten their political standing. Drawing on a sample pool from 38 countries, Bushman and Piotroski [2006] focus on the level of investor protection embodied in corporate law (i.e., impartiality of the judicial system) and conservatism. Their study further confirms that powerful public enforcement slows recognition of good news in reported earnings. On the contrary, high state involvement in the economy is associated with a decrease in the sensitivity of earnings to bad news. However, China is excluded from their samples owing to its socialist legal origin. Cullinan et al. [2012] , covering the period 2007 to 2009, attempt to fill this void but fail to detect a significant negative effect of state ownership. However, their empirical results show that large shareholders prefer lower levels of conservatism in Chinese listed firms.

On the other hand, the impacts of foreign capital in the Chinese context have also

attracted much research effort and have been well documented in the literature. It is conceivable that foreign ownership encourages reforms in corporate governance and disclosure policies in emerging economies (e.g., Guedhami et al. [2009], Wang and Wang [2015], Chen et al. [2017]). Moreover, consistent with research in the Japanese context, evidence has accumulated on whether acceptance of foreign investors entails better corporate governance, whether financial transparency depends on the home origin of the investment, and more importantly, on the type of domestic ownership (e.g., Buckley et al. [2007], Greenaway et al. [2014], Chen et al. [2017]).

In addition to the above-mentioned ownership structures, domestically listed firms in China can issue B-shares and H-shares. B-shares are issued exclusively to foreign investors and domestic investors with US dollar saving accounts while H-shares are traded on stock exchange of Hong Kong. Compared with the mainland stock markets, the Hong Kong stock exchange extends a relatively higher level of investor protection. Moreover, firms that issue B-shares or H-shares are required to provide financial reports in compliance with International Financial Reporting Standards or Hong Kong Generally Accepted Accounting Principles. These financial statements must be audited by Big Four auditors. Thus, firms that issue B-shares and/or H-shares are subjective to dual regulatory requirements and are expected to provide more certificated information (e.g., Brockman and Chung [2003] , Jiang et al. [2008], Huang and Zhu [2015]). Nonetheless, not only do government and state-related institutions still have controlling stakes in H-listed firms, but also the selection of firms is partly for political reasons. This might have undermined the effect of H-share ownership (e.g., Jia et al. [2005], Liu et al. [2017]).

Collectively, it cannot be denied that the roles of differential stakeholders in corporate governance and accounting information are constantly evolving in response to rapidly changing business environments and increased competition in both China and Japan. As there is still a lack of adequate empirical evidence on the effects of institutional differences on accounting conservatism, this study aims to reassess the relevance of these stakeholders to accounting information quality.

3 Hypothesis Development and Research Design

3.1 Hypothesis Development

I choose Japan and China as the subjects of this research for the following reason. Corporate ownership in Japan is concentrated among a stable network of investors with close business ties. Rather than economic gains, these shareholders acquire shares based

on strategic needs. Their long investment horizons would possibly prevent them from fulfilling a monitoring and advisory role in management (e.g., Sheard [1994]). Bhagat et al. [2004] and Chen et al. [2007], among others, argue that while minority shareholders and institutional investors aiming for short-term trading gains tend to require timely disclosure of bad news, large shareholders with greater access to private information might discourage such disclosure owing to their longer investment horizons. In China, the government differs from regular stockholders in that profit maximization is not its only incentive. A sizable literature has pointed out that China has not yet completely moved away from a government-led approach with regards to economic development (e.g., Feinerman [2007] Gao [2011]). High volatility of earnings and huge losses may impair the government's reputation and induces skepticism. In other words, earnings are less likely to reflect economic losses rapidly in a system featuring interlocking or state-owned shareholdings.

Table 1 shows some of the similarities and differences between listed firms in Japan and China.

Table 1 Similarities and Differences between Japan and China

	Japan	China
Dispersed Shareholdings	×	△
Bank Dependence	○	○
Monitoring System	○	△
Two-step impairment test	○	○
Management Turnover	△	△

Classic conservatism research predicts that conservatism grants debtholders a mechanism to monitor managers so that they can respond to declining credit worthiness and liquidity in a timely manner. An emerging conservatism literature supports this conjecture and argue that creditors are the first order demander for conservatism due to their asymmetric loss function (e.g., Ahmed et al. [2002], Beatty et al. [2008], Nikolaev [2010a], Aier et al. [2014], Kravet [2014]). As such, greater use of debt contracts should increase the demand for conservative accounting. In other words, firms with higher debt ratios are expected to provide more conservative information. However, given the preceding discussion on Japan's institutional background, banks in Japan not only play an important role as underwriters and lenders to the firms, but also carry the same corresponding responsibilities as shareholders (e.g., Sheard [1994], Kang and Shivdasani [1995], Kang and Shivdasani [1996]). Arguing from the perspective of

governance in the bank system, Kang and Liu [2008] cast doubt on the bank monitoring theory and point out that a close bank-firm relationship leads to wealth being transferred from bank to borrowers through credit misallocation. Usui [2015] operationalize conflicting of interests between shareholders and creditors by incorporating annual dividend into the Basu's [1997] model. Evidence shows that, in Japanese listed firms, level of accounting conservatism decreases as influence of shareholders grows stronger.

On the other hand, even though there has been significant development of China's stock market since its inception in 1990, bank loans remain the predominant form of financing for Chinese firms. Brandt and Li [2003] and Chen et al. [2013] confirm that state banks, which control more than 90% of the banking assets in China, give preferential treatment to state-owned entities due to political and social considerations. For example, state-owned entities, when grappling with financial deficits, are more likely to secure earlier bailouts from the government. Chen et al. [2010] examine effects of lender's ownership on accounting conservatism in the Chinese setting and find that firms borrow more from state-owned banks are prone to adopt less conservative accounting policies as opposed to those borrow more form commercial banks. In other words, to the extent that corporate financing is accomplished through administrative arrangements as opposed to market mechanisms, there will be lower needs for conservative financial reports.

Based on past research, I first expect that a higher percentage of stable and state shareholders reduces the needs for timely loss recognitions in Japan and China. On the other hand, as debt contracting is conducted more extensively through inside networks in Japan and China, I thereby posit that creditors' monitoring will be less effective as the percentage of stable (state) shareholdings increases.

H1a: Companies with higher stable shareholdings are less likely to report losses in a timely manner.

H1b: With respect to change in debt contracting, companies with higher stable shareholdings still exhibit lower levels of conservatism.

H2a: Companies with higher state shareholdings are less likely to report losses in a timely manner.

H2b: With respect to change in debt contracting, companies with higher state shareholdings still exhibit lower levels of conservatism.

Whether foreign investment is positively related with firm performance and accounting quality has been of great research interest in the literature (e.g., Jiang and Kim [2004],

David et al. [2006], Leuz et al. [2009], Liu et al. [2017]). To sum, two competing views are dominating research on the impact of foreign investors. The first one, termed as governance spillover hypothesis, conjectures that foreign investors' superior knowledge and fiduciary duties enable them to execute influence on the firm's corporate governance and stimulate high quality public information. The other one, known as information asymmetry hypothesis, posits that distance and other information barrier limits foreign investors monitoring capability. Usui [2015] identify a negative relationship between foreign shareholdings and accounting conservatism in Japan. The author interprets the results as evidence of improved communication between foreign investors and domestic shareholders as proportion of foreign equity continues to increase.

As introduced in Section 2.3, to contend in a globalized market, Chinese listed firms have strived to raise capital from foreign investors. Among their attempts to catch up with the advanced capital markets is a firm's decision to cross-list on international stock exchanges. Notwithstanding, evidence documented in previous studies indicates that while cross-listed firms benefit from better information environments, they still demonstrate higher level of earnings management compared with firms based in the host capital markets (e.g., Lang et al. [2006], Herrmann et al. [2015]). In other words, whether the status of cross-listing will improve compliance to accounting standards and propels timely loss recognition in Chinese listed firms is still open to discussion. Furthermore, how foreign investors interplay with information demands from the creditors is relatively unexplored in the extant literature.

Based on the above-mentioned discussion, I thereby propose that following hypothesis in their null forms. Analyses are then performed according to the institutional background for each accounting regime.

H3a: Companies with higher foreign shareholdings are less likely to report losses in a timely manner.

H3b: With respect to change in debt contracting, companies with higher foreign shareholdings still exhibit lower levels of conservatism in China.

H4a: Companies cross-list in B- and H-share are less likely to report losses in a timely manner.

H4b: With respect to change in debt contracting, companies with cross-listing status still exhibit lower levels of conservatism in China.

On the other hand, accounting standards applied in each country could also lead to

variation in accounting quality (e.g., Barth et al. [2008], Peng et al. [2008], Ahmed et al. [2013]). Prior research also infer that accounting standards are more likely to improve accounting quality when rigorously enforced. For instance, Lawrence et al. [2013] show that the timing of impairment loss disclosure is tallied with the requirements mandated by accounting standards. Based on these findings, Lawrence et al. [2013] further specify the mandatory power of statutory regulations in accounting conservatism as "non-discretionary conservatism", which creates an environment conducive to contracting thereby mitigating conflicts of interest. In other words, accounting standards, when strongly enforced, are expected to constrain, if not eliminate, accounting opportunism.

As the third largest securities market in the world, Japan has long been honored as an economic power with high quality of law enforcement (e.g., Cooke [1992]). However, the fallout from recent corporate scandals, such as those involving Olympus and Toshiba, has overshadowed Japan's legacy. Moreover, Japan, together with Germany, is traditionally viewed as a polar case of the U.S in terms of corporate governance style. Hence, it is uncertain whether the theory of non-discretionary conservatism could be readily applied to countries with different institutional features (e.g., Bushman et al. [2004]). On the other hand, while the Chinese capital market is undergoing great institutional change, evidence from previous studies suggests that overall, China has a relatively weak regulatory infrastructure. In other words, it is still unknown that whether accounting standards enforcement is rigorous enough to ensure compliance in face of a politically-led shareholdings structure. This leads to the final hypotheses in this study:

H5a: Non-discretionary conservatism is less effective to impel timely loss recognition in firms with higher stable shareholdings.

H5b: Non-discretionary conservatism is less effective to impel timely loss recognition in firms with higher state shareholdings.

3.2 Variable explanation

To investigate the effect of ownership structure on conservatism in Japan, the following five variables are used in the analysis.

In this study, *STABLE* represents the percentage of shares owned by the largest to the tenth-largest shareholders and other individuals or companies affiliated to the company as defined by Quants Research. The data was manually collect from Quants Research. An important limitation of this metric is that this measure includes managerial

shareholders. Although managerial ownership still constitutes a relatively small fraction of total shareholdings in Japanese listed firms (e.g., Shuto and Takada [2010], Shuto and Kitagawa [2011]), test results in this study may biased by this limitation.

$J.FOREIGN$ represents the percentage of shares owned by foreign individuals or institutions in Japan. This data was also collected from Quants Research. Foreign investors are usually perceived to be more sophisticated in terms of investment experience and the ability to analyze accounting information (e.g., Wang et al. [2008]). Thus, higher proportion of foreign investors are expected to improve information transparency.

The variable $STATE$ is measured as the percentage of state-owned shares deflated by the total number of shares outstanding at the fiscal year-end. This variable reflects the extent to which government ownership influence reporting practice. $C.FOREIGN$ in the Chinese setting is measured as the number of shares issued to foreign investors at initial public offering. $BHMARKET$ is measured as the percentage of H-shares and B-shares deflated by the total number of shares outstanding at the fiscal year-end. Table 2 demonstrates a basic stock classification in China.

Table 2 Stock Classification in China

Type	Sub Classification	Notes	Stock Exchange	Variable
A-Share	Trading limitation[35]	Government	Shanghai	$STATE$
	Tradable	Foreign IPO※		$C.FOREIGN$
		Legal person		$LEGAL$
		Management	Shenzhen	MO
B-Share		Trade in U.S dollars		$BHMARKET$
H-Share		Trade in U.S dollars	Hongkong	

As discussed in introduction, reduced incentive in monitoring from creditors leads to lower demands for accounting conservatism. In this study, I employ the measure $CLEVMV_{t-1}$ to represent the effects from the creditors. It is measured as the change in total liabilities deflated by beginning-of-period market value of shareholder equity. It is conceivable that intense conflicts of interest between lenders and borrowers prompt

[35] Prior to 2005, listed state-owned entities have maintained a dual share structure where the Chinese government owns the majority of non-tradable shares while only a fraction of shares is readily tradable on the stock exchange. With a goal to enhance the role of market mechanism, the Chinese government lifted the legal and technical restrictions on converting non-tradable shares into tradable shares. However, there still remains considerable restrictions on state-owned shares trading.

considerable monitoring from creditors. When a tight monitoring system is already in place, the extra cost to supervise the additional financial liabilities should be almost zero. Simply put, if supplementary monitoring can be implemented at no additional cost, then it is logical for creditors to seek for more conservatism. This renders the predicted sign for $CLEVMV_{t-1}$ to be positive. On the contrary, management, as the other party in a debt contract, has the incentive to deny loss recognition so as not to inflate the debt ratio. A unique governance mechanism (e.g., lenders' insensitiry to change in the borrower's capital cost, a more powerful network of shareholders) can easily trigger such discretions over loss recognition. To test H1b, H2b, H3b, and H4b, $CLEVMV_{t-1}$ will interact with proxies for all ownership structure.

In this study, to test H5a and H5b, the measure of ASSET-BTM ($ABTM_{t-1}$) is employed to explore the effects of accounting standards enforcement on the level of accounting conservatism. $ABTM_{t-1}$ serves as a bench mark for the need to write off underperforming assets. As demonstrated in Lawrence et al. [2013], when $ABTM_{t-1}$ grows higher, a loss is more likely to ensue if management commits to accounting standards.

3.3 Research Design

3.3.1 Modified Basu Model

In line with Lafond and Roychowdhury [2008] and Ahmed and Duellman [2013], this study employs a variation of Basu's asymmetrical timeliness coefficient model to test the hypotheses developed in Section 3.1. Under the framework of Basu [1997], an asymmetric timeliness measure (ρ_3) captures the incremental timeliness of current earnings and recognizes economic losses versus economic gains.

$$E_t = \rho_0 + \rho_1 DR_t + \rho_2 R_t + \rho_3 DR_t * R_t + \varepsilon_t \qquad \text{Eq.1}$$

E_t denotes the net income in fiscal year t deflated by market capitalization measured at the end of fiscal year t−1. R_t denotes the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t. DR_t is a dummy variable that equals 1 if R_t is negative and is 0 otherwise. Accordingly, asymmetric timeliness measure (ρ_3) will be positive if bad news is incorporated into earnings information in a timelier manner than is good news. To explore how ownership structure delays or exacerbates timely loss recognition, I separately estimate the following regression for each country:

Model 1:

$$E_t = \rho_0 + \rho_1 DR_t + \rho_2 R_t + \rho_3 DR_t * R_t + \rho_4 X_{t-1} + \rho_5 DR_t * X_{t-1} + \rho_6 R_t * X_{t-1} + \rho_7 DR_t * R_t * X_{t-1} + \rho_8 CLEVMV_{t-1} + \rho_8 DR_t * CLEVMV_{t-1} + \rho_9 R_t * CLEVMV_{t-1} + \rho_{10} DR_t * R_t * CLEVMV_{t-1} + \rho_{11} ABTM_{t-1} + \rho_{12} DR_t * ABTM_{t-1} + \rho_{13} R_t * ABTM_{t-1} + \rho_{14} DR_t * R_t * ABTM_{t-1} + year\ fixed\ effects + indusrty\ fixed\ effects + \varepsilon_t$$

Model 2:

$$E_t = \rho_0 + \rho_1 DR_t + \rho_2 R_t + \rho_3 DR_t * R_t + \rho_4 D.X_{t-1} + \rho_5 DR_t * D.X_{t-1} + \rho_6 R_t * D.X_{t-1} + \rho_7 DR_t * R_t * D.X_{t-1} + \rho_8 CLEVMV_{t-1} + \rho_8 DR_t * CLEVMV_{t-1} + \rho_9 R_t * CLEVMV_{t-1} + \rho_{10} DR_t * R_t * CLEVMV_{t-1} + \rho_{11} ABTM_{t-1} + \rho_{12} DR_t * ABTM_{t-1} + \rho_{13} R_t * ABTM_{t-1} + \rho_{14} DR_t * R_t * ABTM_{t-1} + \rho_{15} CLEVMV_{t-1} * D.X_{t-1} + \rho_{16} DR_t * CLEVMV_{t-1} * D.X_{t-1} + \rho_{17} R_t * CLEVMV_{t-1} * D.X_{t-1} + \rho_{18} DR_t * R_t * CLEVMV_{t-1} * D.X_{t-1} + \rho_{18} ABTM_{t-1} * D.X_{t-1} + \rho_{17} DR_t * ABTM_{t-1} * D.X_{t-1} + \rho_{18} R_t * ABTM_{t-1} * D.X_{t-1} + \rho_{19} DR_t * R_t * ABTM_{t-1} * D.X_{t-1} + year\ fixed\ effects + indusrty\ fixed\ effects + \varepsilon_t$$

X_t denotes ownership characteristics salient to each country with respect to prior research, respectively. In view of Japan's unique institutional environment, variables representing stable shareholding ($STABLE$) and foreign investors ($J.FOREIGN$) are included in the regressions. For the Chinese settings, variables representing state shareholders ($STATE$), the involvement of foreign investment ($C.FOREIGN$), and status of cross-listing ($BHMARKET$) are tested.

Model 1 is the base line estimation equation in this study. The interaction term $DR_t * R_t * X_{t-1}$ indicates the level of accounting conservatism for a particular ownership type. H1a (H2a) predicts that companies choose less conservative accounting policy given the presence of large (state) shareholders in Japan (China), respectively. Thus , the predicted sign for $DR_t * R_t * STABLE_{t-1}$ ($DR_t * R_t * STATE_{t-1}$) is negative. On the other hand, $DR_t * R_t * FOREIGN_{i,t-1}$ and $DR_t * R_t * BHMARKET_{t-1}$ measures the influence of foreign investors. When the presence of foreign investors or a cross-listing status are effective in improving the sensitivity of earnings to bad news, the sign for the abovementioned interaction terms is predicted to be positive.

In Model 2, a dummy variable $D.X_{t-1}$ is employed to examine the level of conservatism shown by companies with higher proportion of stable (state) ownership or foreign ownership. In the Japanese setting, $D.STABLE_{t-1}$ and $D.JLFOREIGN_{t-1}$ take the value of one if the proportion of stable ownership or foreign ownership is above their means. I expected the sign on $DR_t * R_t * D.STABLE_{t-1}$ and $DR_t * R_t * D.JFOREIGN_{t-1}$ to be negative. In the Chinese setting, $D.STATE_{t-1}$ ($D.CLFOREIGN_{t-1}$) take the value of one if the state or foreign investors is above their means, and zero otherwise.

$D.BHMARKET_{t-1}$ takes the value of one if the firm is cross-listed on the B-share market and/or Hong Kong stock exchange. The signs on $DR_t * R_t * D.STABLE_{t-1}$, $DR_t * R_t * D.FOREIGN$, and $DR_t * R_t * BHMARKET_{t-1}$ are the same in Model 1.

To ensure the robustness of the test results, three measures are included in Model 1 to control for other determinants of conservatism based on prior studies. $ABTM_{t-1}$ is included in this model to verify the effects of accounting standards on management. Evidence documented in Lawrence et al. [2013] show that non-discretionary conservatism explains a substantial proportion of variation in conservative accounting choices. They find that management commits to accounting standards and recognizes impairment losses in accordance with the decrease in the asset values. The predicted sign for $DR_t * R_t * ABTM_{t-1}$ is positive. Aside from $ABTM_{t-1}$, $CLEVMV_{t-1}$ and $SIZE_{t-1}$ are considered in Model 1 to control for leverage and firm size (e.g., Lafond and Roychowdhury [2008], Ahmed and Duellman [2013]). $SIZE_{t-1}$ is natural logarithm of the company's market capitalization.

Finally, as predicted in previous research, variation in leverage generates different demands for timely loss recognition from creditors' side (e.g., LaFond and Watts [2008], Nakamura [2009], Usui [2015], Ishida [2016]). Hence, an increase in debt contracting is likely to induce stricter monitoring of the debtholders, implying a higher level of accounting conservatism. By the same token, when the asset value shows sign for significant devaluation, accounting standards would discipline management to adopt more conservative accounting policies. However, in view of the discussion in the previous sections, it is logical to assume that when influential shareholders discriminate loss recognition, monitoring from the creditors alone may not be effective enough to offset the negative impact of other stakeholders. Model 2 is developed based on Model 1 to test the cross effects of debt contracting (non-discretionary conservatism) and ownership structure. Analyzing their interaction terms would thus generate a fuller picture of the effects of ownership under different circumstance. For instance, as the predicted sign on $D.STABLE_{t-1}$ ($D.STATE_{t-1}$) is negative, a positive coefficient on $CLEVMV_{t-1} * D.STABLE_{t-1}$ or $CLEVMV_{t-1} * D.STATE_{t-1}$ then indicates the negative effects of stable (state) shareholdings are neutralized. In a similar vein, sign on $CLEVMV_{t-1} * D.JFOREIGN_{t-1}$ ($CLEVMV_{t-1} * D.CFOREIGN_{t-1}$) and $CLEVMV_{t-1} * BHMARKET_{t-1}$ are expected to be positive as foreign investors could still restrain management incentives and other shareholders' disclosure preference when financial capacity becomes constrained. As indicated in Section 3.2, the measure of $CLEVMV_{t-1}$ proposes two alternative scenarios over the influence of leverage change. In other words, when the sign on interaction terms between $CLEVMV_{t-1}$ and $D.STABLE_{t-1}$ ($D.STATE_{t-1}$) turns to

negative, it then infers that stable shareholding (state shareholdings) enables firms to adopt less conservative accounting policy as it can compromise monitoring from debt holders. A negative sign on interaction terms between $CLEVMV_{t-1}$ and $D.STABLE_{t-1}$ ($D.CFOREIGN_{t-1}$) then suggest the presence of foreign equity does not counteract managerial discretion. On the hand, the expected sign on all interaction terms with $ABTM_{t-1}$ is positive as strictly enforced accounting standards are anticipated to restore conservative reporting in face of any institutional infrastructure.

3.3.2 GLM-SELECT

In this section, I examine how ownership structure affect accounting conservatism by letting the main ownership variable interact with leverage and ASSET-BTM ratio. As indicated in the introduction, I posit that, given the unique information environment in Japan and China, the level of conservatism is determined by the extent to which interests of contracting parties involved are opposed or intertwined. For example, accounting numbers would be less conservative as influence of the block shareholders outplays that of creditors. The interplay of different forces affected by accounting conservatism could potentially lead to even lower sensitivity to economic losses. Hence, it is crucial to disentangle the reciprocal effects between these stakeholders.

On the other hand, one of the greatest challenges faced by empirical analysis is the selection of a valid set of variables which best fit the observed data. In an effort to advance the findings in this study, I perform a general linear models (GLM) selection procedure proposed by Osborne et al. [2000]. General linear model selection is a diagnostic technique emphasizes the accuracy of a model and more importantly accommodates interaction terms under a linear regression framework. In other words, it improves predictive performance on the cross-effects between the predictors and in the meantime balances goodness of fit. Models 3 and 4 are used to assess the influence of ownership structure on firm-level conservatism in Japan and China, respectively. Two metrics for accounting conservatism (i.e., T_SCORE, CONSKEW) are employed as the dependent variable in each model.

Model 3 (Japan):

$$dependent = \alpha_0 + \alpha_1 CLEVMV_{t-1} + \alpha_2 ABTM_{t-1} + \alpha_3 STABLE_{t-1} + \alpha_4 CLEVMV_{t-1} * STABLE_{t-1} + \alpha_5 ABTM_{t-1} * STABLE_{t-1} + \alpha_6 J.FOREIGN_{t-1} + \alpha_7 CLEVMV_{t-1} * J.FOREIGN_{t-1} + \alpha_8 ABTM_{t-1} * J.FOREIGN_{t-1} + controls + \varepsilon_t$$

Model 4 (China):

$$dependent_t = \alpha_0 + \alpha_1 CLEVMV_{t-1} + \alpha_2 ABTM_{t-1} + \alpha_3 STATE_{t-1} + \alpha_4 CLEVMV_{t-1} * STATE_{t-1} + \alpha_5 ABTM_{t-1} * STATE_{t-1} + \alpha_6 C.FOREIGN_{t-1} + \alpha_7 CLEVMV_{t-1} * C.FOREIGN_{t-1} + \alpha_8 ABTM_{t-1} * C.FOREIGN_{t-1} + \alpha_{10} BHMARKET_{t-1} + \alpha_{10} CLEVMV_{t-1} * BHMARKET_{t-1} + \alpha_{11} ABTM_{t-1} * BHMARKET_{t-1} + controls + \varepsilon_t$$

where

$dependent_t$:

T_SCORE_t : a firm-year conservatism measure devised in Khan and Watts [2009].

$CONSKEW_t$: the difference between the skewness of cash flows from operating activities and the skewness of net income using a three-year rolling window.[36]

ownership variable:

$STABLE_{t-1}$: the percentage of shares owned by the largest to the tenth-largest shareholders and other persons or companies affiliated with the company as defined in Quants Research

$J.FOREIGN_{t-1}$: the percentage of shares owned by foreign individuals or institutions in Japan

$STATE_{t-1}$: the number of state-owned shares deflated by the total number of shares outstanding as of the fiscal year-end

$C.FOREIGN_{t-1}$: the number of shares issued to foreign individuals or institutions at the point of initial public offering deflated by the total number of shares outstanding as of the fiscal year-end in China

$HMARKET_{t-1}$: the number of H-shares and B-shares deflated by the total number of shares outstanding as of the fiscal year-end

controls include interacting terms and the following variables.

$CLEVMV_{t-1}$: change in total liabilities deflated by beginning-of-period market capitalization

$ABTM_{t-1}$: total assets deflated by the sum of market capitalization and total assets

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[36] $CONSKEW_t = \mathrm{E}(\frac{(COF_{i,t}-\mu COF_{i,t})}{\sigma COF_{i,t}})^3 - \mathrm{E}(\frac{(NI_{i,t}-\mu NI_{i,t})}{\sigma NI_{i,t}})^3$

where

COF_t: cash flow from operating activities deflated by total assets at the end of year t.

NI_t: net income deflated by total assets at the end of year t.

$\mu COF_{i,t}$: mean of cash flow from operating activities.

$\sigma COF_{i,t}$: standard deviation of the distribution of cash flow from operating activities.

$\mu NI_{i,t}$: mean of net income.

$\sigma NI_{i,t}$: standard deviation of the distribution of net income.

minus common equity, both measured at the end of fiscal year t−1

$SIZE_{t-1}$: natural logarithm of the company's market capitalization.

PPE_{t-1}: the proportion of property, plant and equipment assets to total assets in year t−1.

$WEAK_t$: a dummy variable takes the value of 1 if $LROA_t$ or LR_t is below 5% and 0 otherwise. $LROA_t$ is a lag indicator for ROA, computed as the average value of ROA_{t-1} and ROA_{t-2}. LR_t is a lag indicator for ROA, computed as the average value of R_{t-1} and R_{t-2}. ROA_t is measured as income before extraordinary items deflated by book value of total assets, both measured at the end of fiscal year t. R_t is the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t.

$DEBT_{t-1}$: proceeds from the issuance of bonds in year t−1 deflated by market capitalization of common equity at the end of year t−1.

GW_{t-1} : book value of goodwill deflated by total assets, both measured at the end of fiscal year t−1.

$INTA_{t-1}$: book value of intangible assets deflated by total assets, both measured at the end of fiscal year t−1.

RD_{t-1}: expenditure on research and development deflated by total sales, both measured at the end of fiscal year t−1

$lnAGE_{t-1}$: the natural logarithm of firm age

The first dependent variable employed in the model is T_SCORE_t, which measures the degree of conditional conservatism suggested in Khan and Watts [2009]. Based on the framework of Basu [1997], they define conditional conservatism as a function of firm size ($SIZE$), marker-to-book ratio (MTB), and market value leverage ($LEVMV$). Although Basu's [1997] approach has been validified in extant literature, controversy still remains regarding its model specification and choice of deflator (e.g., Dietrich et al. [2007]). To ameliorate the concerns, I followed Givoly and Hayn [2000] and employed $CONSKEW_t$ as a non-market-based measure for accounting conservatism. It is computed as the difference between the skewness of net income and the skewness of cash flows from operating activities using a three-year rolling window. The two measures have been extensively applied in previous studies (e.g., García Lara et al. [2016], Zhang [2008a]) and present advantage of allowing me to examine the relation between conservatism and ownership structure on a firm-year level. Both T_SCORE_t and $CONSKEW_t$ are positively correlated with the level of conservatism.

As outlined in the previous section, I expect that larger proportion of stable ownership (state ownership) will counteract conservative disciplines. Therefore, I expect that they will negatively associate with the response variables (T_SCORE_t and $CONSKEW_t$) and will be included in the selected model. In contrast, when firms with a larger proportion of foreign shareholders or a cross-listing firm cut loss and abandon poorly performing projects in a timelier manner, the sign on $J.FOREIGN_{t-1}$, $C.FOREIGN_{t-1}$ and $HMARKET_{t-1}$ will be positive.

To identify the combined effects of accounting standards and leverage, this section also focuses on the interpretation of the coefficients on the interaction terms. I expect that the existing firm-bank relationship in conjunction with higher concentration in ownership will compromise banks' monitoring efficiency. Interaction terms involve $CLEVMV_{t-1}$ are thereby intended to capture the effect of leverage. To the extent the needs for timelier loss recognition diminishes, coefficient on dual interaction term ($CLEVMV_{t-1} * X_{t-1}$), when associate with stable (state) shareholdings, is expected to be negative. Prior study infers that non-discretionary conservatism ($ABTM_{t-1}$) impels accounting conservatism and rules out opportunistic accounting choices. Therefore, I expect the inclusion of measure $ABTM_{t-1}$ will offset the negative influence of stable shareholdings. Therefore, estimates for $ABTM_{t-1} * STABLE_{t-1}$ and $ABTM_{t-1} * STATE_{t-1}$ are positive. On the other hand, sign on the dual interaction terms ($CLEVMV_{t-1} * X_{t-1}$ and $ABTM_{t-1} * X_{t-1}$) associated with foreign shareholdings and cross-listing is expected to be positive if foreign equity is positively correlated with accounting conservatism.

$controls$ include interacting terms and the following predictors. PPE_{t-1} stands for the tangibility of assets and is measured as the proportion of property, plant and equipment assets to total assets in year t－1. Due to the effects of learning curve and survival bias, older and larger firms are more likely to be predictable than younger ones. Moreover, firm age also indicates the length and quality of bank-firm relationship. Following Fama and French [2001] and Shumway [2001], firm age is defined as its "listing age", measured from the year of their first appearance on the database for China. For Japanese listed companies, firm age data is collected from Quants Research database. Other variables controlling for firm's characteristics affect accounting policy and conservatism include the proportion of intangible assets ($INTA_{t-1}$) and goodwill (GW_{t-1}) in the total assets. Together with RD_{t-1}, those variables are included to control for investment uncertainty and growth opportunity. $WEAK_t$ is a dummy variable, taking a value of one if the firm experienced depressed stock performance or a decline in profitability during the last fiscal year. It is supposed to control for the profitability and the non-discretionary

component in conservatism. $DEBT_{t-1}$, on the other hand, controls for capital collected from open market where bond securities can be actively traded. I expect that participants in this market, who might be exposed to more risks if the value of bond fluctuates, will closely follow the issuer's activities and demands transparency.

4. Sample selection

The initial sample pool for Japanese listed firms consists of all listed firms on NIKKE Financial Request. Stock return data from NPM Daily Return Database (Financial Data Solutions). Companies with (a) fiscal year ending other than March; (b) missing data to compute the measure of ASSET-BTM (i.e., and market capitalization or total assets); (c) with negative shareholders' equity; (d) who had changed their year-end in the middle of a fiscal year were excluded from the observations. To reduce analytical complexity, financial institutions were also excluded from the analyses. The computation of $CONSKEW_t$ reduces the sample size by 1457 observations in the GLM analysis. Ownership-related data are manually collected from Quants Research issued by Toyo Keizai from the fiscal year 2003 to 2015.

Table 3 Process of Sample Selection

Panel A : Process of Sample Selection　Japan 2005-2015	
	initial sample
	30437
1 analytical complexity	Δ10492
2 required accounting data	Δ1502
3 negative common equity and asset write-downs	Δ25
4 required data for ownership	Δ163
total	18255
5. required cash flow data	Δ1457
subtotal	16798

Samples for the Chinese stock market include all listed firms covering an analysis period from 2005-2015. Data was collected from WIND Financial Terminal (WFT).[37] The initial sample includes 32296 firm/years which precludes companies with fiscal year ending other than December. Firms in the financial service industry are excluded due to

[37] Data for the Chinese setting is collected while I am visiting Shanghai University of Finance and Economics under the supervision of Professor HuYiming in the financial accounting department.

their distinct regulatory settings. For this sample period, 25414 firm-year observations are identified which have all the data required for the modified Basu model and accrual model. As the computation of $CONSKEW_t$ involves a three-year rolling window, another 3643 observations are excluded for GLM-SELECT analysis.

Table 3 (Continued) Process of Sample Selection

Panel B : Process of Sample Selection China 2005-2015	
	initial sample
	32296
1. required accounting data	△2893
2 negative common equity and asset write-downs	△499
3 required accounting data for ownership	△3490
total	25414
4. required cash flow data	△3643
subtotal	21771

5. Descriptive Statistics and Test Results

5.1 Descriptive Statistics

This section reports the descriptive statistics of variables used in this study by country. A correlation matrix for the variables, with Spearman correlations in the upper quadrant and Pearson correlations in the lower quadrant for each country is provided in Appendix 2. The regression results for calculation of T_SCORE are provided in Appendix 3.

The first four rows in Panel A shows the proportion of shares owned by stable shareholders ($STABLE_{t-1}$) and foreign investors ($J.FOREIGN_{t-1}$), respectively. The median value for stable shareholdings (0.491) is lower than its mean value (0.505). A similar trend can be observed for foreign shareholdings (mean 0.103 vs. median 0.062), indicating concentration of ownership for companies in high percentiles. $D.STABLE_{t-1}$ and $D.JFOREIGN_{t-1}$ takes the value of one if the proportion of stable ownership or foreign ownership is above their means, respectively. The median value and the 3rd quartile is 0 and 1 for $D.STABLE_{t-1}$ ($D.JFOREIGN_{t-1}$), respectively, implying that a relatively small number of companies have relatively concentrated ownership in the sample. Pearson correlation coefficient on foreign shareholdings ($J.FOREIGN_{t-1}$) with firm size ($SIZE_{t-1}$) is 0.669*. The Pearson correlation coefficient on foreign shareholdings ($J.FOREIGN_{t-1}$) and stable shareholdings ($STABLE_{t-1}$) is negative (-0.188). These findings collaborate with evidence documented in Jiang and Kim [2004] that foreign

(institutional) investors selectively choose companies with larger market capitalization and avoid stocks with high cross shareholdings.

On the other hand, ownership levels are skewed in the Chinese setting. $STATE_{t-1}$ represents the percentage of state-owned shares deflated by the total number of shares outstanding at the fiscal year-end. $C.FOREIGN_{t-1}$ in the Chinese setting is measured as the number of shares issued to foreign investors at initial public offering. $BHMARKET_{t-1}$ represents the percentage of H-shares and B-shares deflated by the total number of shares outstanding at the fiscal year-end. Like those in the Japanese setting, $D.STATE_{t-1}$ ($D.CFOREIGN_{t-1}$) takes the value of one if the proportion of state ownership or foreign ownership is above their means and zero otherwise. $D.BHMARKET_{t-1}$ takes the value of one if the firm is cross-listed on the B-share market and/or Hong Kong stock exchange. The sum of the mean value of $C.FOREIGN_{t-1}$and $BHMARKET_{t-1}$ is 0.034. Compared with Japan ($J.FOREIGN_{t-1}$=10.3), foreign investors still only account for a small proportion in China's equity market.

Table 4：Panel A

Japan					
	mean	p25	median	p75	sd
$STABLE_{t-1}$	0.505	0.391	0.491	0.616	0.150
$D.STABLE$	0.481	0.000	0.000	1.000	0.500
$J.FOREIGN_{t-1}$	0.103	0.013	0.062	0.160	0.113
$D.JFOREIGN_{t-1}$	0.389	0.000	0.000	1.000	0.488

China					
	mean	p25	median	p75	sd
$STATE_{t-}$	0.130	0.000	0.000	0.21	0.204
$D.STATE_{t-}$	0.246	0.000	0.000	0.000	0.431
$C.FOREIGN_{t-1}$	0.009	0.000	0.000	0.000	0.058
$D.CFOREIGN_{t-1}$	0.045	0.000	0.000	0.000	0.208
$BHMARKET_{t-1}$	0.025	0.000	0.000	0.000	0.247
$D.BHMARKET_{t-1}$	0.150	0.000	0.000	0.000	0.357

Notes:

$STABLE_{t-1}$: the percentage of shares owned by the largest to the tenth-largest shareholders and other persons or companies affiliated with the company as defined in Quants Research. $D.STABLE_{t-1}$: a dummy variable takes the value of one if the proportion of stable shareholders is above the mean and zero otherwise. $J.FOREIGN_{t-1}$: the percentage of shares owned by foreign individuals or institutions in Japan. $D.JFOREIGN_{t-1}$: a dummy variable takes the value of one if the proportion of foreign shareholders is above the mean and zero otherwise. $STATE_{t-1}$: the percentage of state-owned shares deflated by the total number of shares outstanding as of the fiscal year-end.

$D.STATE_{t-1}$: a dummy variable takes the value of one if the proportion of state shareholders is above the mean and zero otherwise. $C.FOREIGN_{t-1}$: the number of shares issued to foreign investors at initial public offering. $D.CFOREIGN_{t-1}$: a dummy variable takes the value of one if the proportion of foreign ownership is above their means and zero otherwise. $BHMARKET_{t-1}$: the percentage of H-shares and B-shares deflated by the total number of shares outstanding as of the fiscal year-end. $D.HMARKET_{t-1}$: a dummy variable takes the value of one if the firm is cross-listed on the B-share market and/or Hongkong stock exchange.

Panel B summarizes statistics for key variables employed in the analyses. The first three variables are proposed by Basu [1997] to predict the level of accounting conservatism. E_t denotes the net income in fiscal year t deflated by market capitalization measured at the end of fiscal year t. R_t is the buy-and-hold return on common stock for the 12 months ending three months after the end of fiscal year t. DR_t is a dummy variable, taking a value of 1 if R_t is negative, and zero otherwise. The mean value of DR_t for Chinese listed firms (0.416) is lower than that for their counterparts in Japan (0.554), indicating more Japanese firm experienced negative return than do Chinese listed firms across the analysis period.

$ABTM_{t-1}$ denotes ASSET-BTM measured at the end of fiscal year t−1, computed as the book value of total assets deflated by the sum of market capitalization and total assets minus common equity. Following is a dummy variable $BTMD_t$, which takes a value of 1 if $ABTM_{t-1}$ is higher than 1 and 0 otherwise. Differences in the mean value of $ABTM_{t-1}$ and $BTMD_t$ between Japan and China confirm the disparity in R_t and DR_t, as more than half of Japanese firms have lower market values than their book values ($BTMD_t$= 0.53) while fewer than 10% of Chinese-listed firms require asset impairment ($BTMD_t$= 0.097). However, when compared on an accrual basis, Japan exhibits a higher profitability as the 3rd quantile of ACC_t is −0.032 for Japan and 0 for China, respectively. $CLEVMV_{t-1}$ is measured as the change in total liabilities deflated by beginning-of-period market capitalization. It captures the change in capital composition, as well as the incremental needs for conservative accounting from creditors. I expect that increase in debit incurs stronger monitoring from debtholders.

Panel C presents the statistics for the control variables in this study. Firm size ($SIZE$) and firm age (AGE) are included as they are likely correlated with ownership structure and information asymmetry. $LEVMV_{t-1}$ is calculated as book value of total liabilities deflated by market value of common equity at the end of fiscal year t−1. $DEBT_{t-1}$, on the other hand, denotes proceeds from debt issuance deflated by market capitalization at the end of fiscal year t−1. Public debt accounts for only about 9% and 5% of the total liabilities in Japan and China, respectively. This is consistent with the discussion in Section 2 that banks play a much more dominant role as a source of firm financing in Japan and China. This contrasts their counterparts in America, as public equity plays a

much more dominant role as a source of firm financing in the U.S. $PDEBT_{t-1}$ is a dummy variable, taking a value of one if the company issued public bonds in the previous fiscal year and it shows that there is a growing number of Japanese firms that started to seek public suppliers of capital while the proportion of Chinese listed firms seeking public funding remains extremely low.

Table 4：Panel B

Japan					
	mean	p25	median	p75	sd
E_t	0.077	0.051	0.095	0.151	0.377
DR_t	0.554	0.000	1.000	1.000	0.497
R_t	0.034	−0.182	−0.030	0.135	2.400
$ABTM_{t-1}$	1.036	0.851	1.019	1.187	0.362
$BTMD_t$	0.530	0.000	1.000	1.000	0.499
$\mathrm{ACC_t}$	−0.033	−0.060	−0.032	0.004	0.070
ΔCF_t	0.001	−0.027	0.001	0.031	0.134
$D\Delta CF_t$	0.476	0.000	0.000	1.000	0.499
$CLEVMV_{t-1}$	0.023	−0.068	0.000	0.079	3.920
T_SCORE_t	0.130	−0.043	0.097	0.239	0.371
$CONSKEW_t$	0.060	−0.413	0.032	0.569	0.697

China					
	mean	p25	median	p75	sd
E_t	0.068	0.010	0.027	0.053	0.753
DR_t	0.416	0.000	0.000	1.000	0.493
R_{t-1}	0.106	−0.164	0.010	0.256	0.482
$ABTM_{t-1}$	0.623	0.3554	0.5366	0.7661	0.479
$BTMD_t$	0.097	0.000	0.000	0.000	0.296
ACC_t	−0.024	−0.053	0.000	0.023	1.498
ΔCF_t	0.007	−0.036	0.006	0.049	0.131
$D\Delta CF_t$	0.385	0.000	0.000	1.000	0.487
$CLEVMV_{t-1}$	0.200	0.000	0.010	0.095	2.932
T_SCORE_t	0.144	0.060	0.072	0.093	0.674
$CONSKEW_t$	0.024	−0.360	0.000	0.430	0.653

Notes:

E_t denotes the net income in fiscal year t deflated by market capitalization measured at the end of fiscal year t−1.

R_t: the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t−1. DR_t: dummy variable, taking a value of 1 if R_{t-1} is negative, and 0 otherwise. $ABTM_{t-1}$: total assets / market capitalization + total assets −common equity, both measured at the end of fiscal year t−1. $BTMD_t$: a dummy variable takes a value of 1 if $ABTM_{t-1}$ is higher than 1 and 0 otherwise. ACC_t: accruals in year t deflated by average total assets. ΔCF_t: changes in cash flows from operations deflated by average total assets. $D\Delta CF_t$: a dummy variable, taking the value of 1 if $\Delta CF_t$is negative and 0 otherwise. $CLEVMV_{t-1}$: change in total liabilities deflated by beginning-of-period market capitalization. T_SCORE_t: a firm-year conservatism measure devised in Khan and Watts [2009]. $CONSKEW_t$. the difference between the skewness of cash flows from operating activities and the skewness of net income using a three-year rolling window.

Table 4: Panel C

Japan					
	mean	p25	median	p75	sd
$LEVMV_{t-1}$	2.182	0.550	1.237	2.514	4.695
$DEBT_{t-1}$	0.005	0.000	0.000	0.000	0.022
$PDEBT_{t-1}$	0.188	0.000	0.000	0.000	0.391
PPE_{t-1}	0.298	0.166	0.281	0.400	0.184
$SIZE_{t-1}$	10.102	8.885	9.943	11.247	1.960
$lnAGE_{t-1}$	4.086	3.951	4.220	4.369	0.491

China					
	mean	p25	median	p75	sd
$LEVMV_{t-1}$	1.804	0.148	0.338	0.792	12.999
$DEBT_{t-1}$	0.012	0.000	0.000	0.000	0.383
$PDEBT_{t-1}$	0.095	0.000	0.000	0.000	0.293
PPE_{t-1}	0.262	0.1243	0.2291	0.3718	0.179
$SIZE_{t-1}$	14.645	14.037	14.658	15.317	1.262
$lnAGE_{t-1}$	2.799	2.639	2.944	3.091	0.418

Notes

$LEVMV_{t-1}$: book value of total liabilities deflated by market value of common equity at the end of fiscal year t−1. $DEBT_{t-1}$: proceeds from debt issuance deflated by market capitalization, both measured at the end of year t−1. $PDEBT_{t-1}$: a dummy variable, taking a value of one if the company issued public bond in the previous fiscal year. PPE_{t-1}: proportion of property, plant and equipment assets to total assets, measured at the end of year t−1. $SIZE_{t-1}$: the natural logarithm of market capitalization at the end of fiscal year t−1. $lnAGE_{t-1}$: the natural logarithm of firm age.

5.2 Main Results

Table 5 presents main test results of the modified Basu model and assess the association between ownership and conservatism for Japanese and Chinese listed firm. In each panel, the first column presents the regression results for Model 1, which

measures the homogeneous effect of each ownership type across all firms. The third column presents the regression results for Model 2, which examines effects of higher concentration in ownership by replacing the proportion of shares by a dummy variable. The estimations are performed using a fixed effects model. Estimates for interaction terms on control variables are not shown for brevity. Two-tailed P-values are reported in the apprentice.

Model 1:

$$E_t = \rho_0 + \rho_1 DR_t + \rho_2 R_t + \rho_3 DR_t * R_t + \rho_4 X_{t-1} + \rho_5 DR_t * X_{t-1} + \rho_6 R_t * X_{t-1} + \rho_7 DR_t * R_t * X_{t-1} + \rho_8 CLEVMV_{t-1} + \rho_8 DR_t * CLEVMV_{t-1} + \rho_9 R_t * CLEVMV_{t-1} + \rho_{10} DR_t * R_t * CLEVMV_{t-1} + \rho_{11} ABTM_{t-1} + \rho_{12} DR_t * ABTM_{t-1} + \rho_{13} R_t * ABTM_{t-1} + \rho_{14} DR_t * R_t * ABTM_{t-1} + year\ fixed\ effects + indusrty\ fixed\ effects + \varepsilon_t$$

Model 2:

$$E_t = \rho_0 + \rho_1 DR_t + \rho_2 R_t + \rho_3 DR_t * R_t + \rho_4 D.X_{t-1} + \rho_5 DR_t * D.X_{t-1} + \rho_6 R_t * D.X_{t-1} + \rho_7 DR_t * R_t * D.X_{t-1} + \rho_8 CLEVMV_{t-1} + \rho_8 DR_t * CLEVMV_{t-1} + \rho_9 R_t * CLEVMV_{t-1} + \rho_{10} DR_t * R_t * CLEVMV_{t-1} + \rho_{11} ABTM_{t-1} + \rho_{12} DR_t * ABTM_{t-1} + \rho_{13} R_t * ABTM_{t-1} + \rho_{14} DR_t * R_t * ABTM_{t-1} + \rho_{15} CLEVMV_{t-1} * D.X_{t-1} + \rho_{16} DR_t * CLEVMV_{t-1} * D.X_{t-1} + \rho_{17} R_t * CLEVMV_{t-1} * D.X_{t-1} + \rho_{18} DR_t * R_t * CLEVMV_{t-1} * D.X_{t-1} + \rho_{18} ABTM_{t-1} * D.X_{t-1} + \rho_{17} DR_t * ABTM_{t-1} * D.X_{t-1} + \rho_{18} R_t * ABTM_{t-1} * D.X_{t-1} + \rho_{19} DR_t * R_t * ABTM_{t-1} * D.X_{t-1} + year\ fixed\ effects + indusrty\ fixed\ effects + \varepsilon_t$$

5.2.1 Test Results for Modified Basu Model (Model 1)

Panels A reports test results for Japanese listed firms. As per H1a, I posit that stable ownership, who place importance on maintaining a long-term business ties with the firm and the management, engenders lower demand for conservative accounting. Consistent with my expectation, the coefficient on $DR_t * R_t * STABLE_{t-1}$ is significantly negative for both model specifications (-0.559***), indicating that on average, the level of conservatism decreases as the proportion of stable shareholders increases. In model 2, ownership proxy is replaced by a dummy variable, taking a value of one if the number of stable shareholders is above the overall mean in the sample pool. As shown by the results, the coefficient on $DR_t * R_t * D.STABLE_{t-1}$ is negative and statistically significant at the 1% level (-0.664***), suggesting that firms with larger stable shareholdings (above the mean) become less timely in recognizing economic losses.

On the other hand, under H3a, I include the proportion of foreign investors to evidence whether foreign ownership is associated with higher corporate transparency and lower information asymmetry (e.g., Jiang and Kim [2004], Guo et al. [2015]). The results show

that the coefficient on $DR_t * R_t * J.FOREIGN_{t-1}$ is statistically positive and economically important compared to other control variables included in the model. For example, one-unit change in foreign ownership could drives loss recognition by almost the same value (0.971***). However, although estimate on $DR_t * R_t * J.FOREIGN_{t-1}$ in Model 2 is positive, it lacks sufficient explanatory power (0.167). One possible explanation for the reduced significance is the inclusion of the interaction term of $DR_t * R_t * ABTM_{t-1} * D.JFOREIGN_{t-1}$. Overall, test results produced by the modified Basu model offer evidence to reject H3a in the Japanese setting and show that the proportion of foreign shareholding is positively correlated with conservatism.

Turning now to Panel B, which details the regression results for state ownership in Chinese listed firms. As per H2a, I expect that, unlike the U.S., financial soundness may be less relevant for banks to supply capital as the Chinese government has strong incentives to keep state-owned entities from defaulting for political and social concerns. Furthermore, individual investors in China are less experienced and knowledgeable in stock investments and usually traded on market sentiment rather than financial fundamentals (e.g., Kang et al. [2002]). Therefore, reduced reliance on publicly available information can potentially undercut the propensities for timely loss recognition. Consistent with the prediction in this study, the coefficient on $DR_t * R_t * STATE_{t-1}$ is significantly negative (-0.025*). In model 2, coefficient on $DR_t * R_t * D.STATE_{t-1}$, which stands for the sensitivity to bad news for firms with higher than mean proportion of state shareholders, is also significantly negative (-0.007*). These results indicate that firms become less conservative as the fraction of state-ownership increases.

On the other hand, evidence documented in previous studies casts doubt on the effectiveness of foreign investors to accelerate bad news recognition. As shown in Panel B, coefficient on $DR_t * R_t * C.FOREIGN_{t-1}$ and $DR_t * R_t * D.CFOREIGN_{t-1}$ are negative in both models (-0.014 and -0.044), but statistically insignificant. Hence, it is unclear whether firms with higher presence of foreign shareholders accrue unrealized losses in a less timelier manner. In other words, as with the Japanese setting, no substantial difference was found to either reject or support H3a for foreign investors in the Chinese setting, too. In comparison, coefficients on $DR_t * R_t * BHMARKET_{t-1}$ and $DR_t * R_t * D.BHMARKET_{t-1}$ are all positive and significant (0.036*** and 0.082***), indicating a sophisticated information environment will reinforce monitoring and improve earnings quality.

5.2.2 Test Results for Modified Basu Model (Model 2)

Model 2 also investigates how ownership structure affects levels of accounting

conservatism in the Japanese setting under different circumstances. First, with regards to the interaction term between $CLEVMV_{t-1}$ and $D.STABLE_{t-1}$, the coefficient is significantly negative (− 0.422***). As estimate for $DR_t * R_t * CLEVMV_{t-1}$ is insignificant (−0.237), it is uncertain how change in leverage influence accounting conservatism. However, given the coefficient on $DR_t * R_t * D.STABLE_{t-1}$ is significantly negative, it is reasonable to infer that stable shareholdings either depresses timely loss recognition even when leverage continues to rise or provokes managerial discretion to avoid triggering debt covenants.

Table 5 Test Results for Basu Model

Panel A：Japan				
	Model 1		Model 2	
	estimates	P − value	*estimates*	P − value
$DR_t * R_t$	0.069	(0.510)	0.221	(0.078)
$DR_t * R_t * CLEVMV_{t-1}$	0.004	(0.824)	−0.237	(0.099)
$DR_t * R_t * ABTM_{t-1}$	0.601***	(0.000)	0.233*	(0.038)
$DR_t * R_t * STABLE_{t-1}$	−0.559***	(0.000)		
$DR_t * R_t * D.STABLE_{t-1}$			−0.664***	(0.000)
$DR_t * R_t * CLEVMV_{t-1} * D.STABLE_{t-1}$			−0.422***	(0.000)
$DR_t * R_t * ABTM_{t-1} * D.STABLE_{t-1}$			0.589***	(0.000)
$DR_t * R_t * J.FOREIGN_{t-1}$	0.971***	(0.000)		
$DR_t * R_t * D.JFOREIGN_{t-1}$			0.167	(0.163)
$DR_t * R_t * CLEVMV_{t-1} * D.JFOREIGN_{t-1}$			0.120*	(0.031)
$DR_t * R_t * ABTM_{t-1} * D.JFOREIGN_{t-1}$			0.305*	(0.017)
$DR_t * R_t * SIZE_{t-1}$	−0.027***	(0.000)	−0.035***	(0.000)
intercept	0.534***	(0.000)	0.404***	(0.000)
F	27.71		29.19	
N	18255			

Notes:

E_t denotes the net income in fiscal year t deflated by market capitalization measured at the end of fiscal year t−1. R_{t-1}: the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t−1. DR_t: dummy variable, taking a value of 1 if R_{t-1} is negative, and 0 otherwise. $STABLE_{t-1}$: the percentage of shares owned by the largest to the tenth-largest shareholders and other persons or companies affiliated with the company. $D.STABLE_{t-1}$: a dummy variable takes the value of one if the proportion of stable shareholders is above the mean and zero otherwise. $J.FOREIGN_{t-1}$: the percentage of shares owned by foreign individuals or institutions in Japan. $D.JFOREIGN_{t-1}$: a dummy variable takes the value of one if the proportion of foreign shareholders is above the mean and zero otherwise. $CLEVMV_{t-1}$ is measured as the change in total liabilities deflated by beginning-of-period market capitalization. $ABTM_{t-1}$: total assets / market capitalization + total assets −common equity, both measured at the end of fiscal year t−1. $SIZE_{t-1}$: the natural logarithm of market capitalization at the end of fiscal year t−1. ***, **, * indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively.

Table 5 Test Results for Basu Model

Panel B：China				
	Model 1		Model 2	
	estimates	P − value	*estimates*	P − value
$DR_t * R_t$	0.055	0.091	0.087**	0.010
$DR_t * R_t * CLEVMV_{t-1}$	−0.003	0.672	0.001	0.944
$DR_t * R_t * ABTM_{t-1}$	−0.021*	0.026	−0.017	0.164
$DR_t * R_t * STATE_{t-1}$	−0.025*	0.026		
$DR_t * R_t * D.STATE_{t-1}$			−0.007*	0.028
$DR_t * R_t * CLEVMV_{t-1} * D.STATE_{t-1}$			0.010	0.497
$DR_t * R_t * ABTM_{t-1} * D.STATE_{t-1}$			−0.046*	0.021
$DR_t * R_t * C.FOREIGN_{t-1}$	−0.014	0.784		
$DR_t * R_t * D.CFOREIGN_{t-1}$			−0.044	0.101
$DR_t * R_t * CLEVMV_{t-1} * D.CFOREIGN_{t-1}$			0.021	0.572
$DR_t * R_t * ABTM_{t-1} * D.CFOREIGN_{t-1}$			0.117*	0.017
$DR_t * R_t * BHMARKET_{t-1}$	0.036***	0.001		
$DR_t * R_t * D.BHMARKET_{t-1}$			0.082***	0.001
$DR_t * R_t * CLEVMV_{t-1} * D.BHMARKET_{t-1}$			−0.009	0.739
$DR_t * R_t * ABTM_{t-1} * D.BHMARKET_{t-1}$			−0.066	0.063
$DR_t * R_t * SIZE_{t-1}$	−0.002	0.417	−0.004	0.083
intercept	0.010	0.415	0.007	0.556
F	75.62		43.19	
N	25414			

Notes:

E_t denotes the net income in fiscal year t deflated by market capitalization measured at the end of fiscal year t−1. R_{t-1}: the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t−1. DR_t: dummy variable, taking a value of 1 if R_{t-1} is negative, and 0 otherwise. $C.FOREIGN_{t-1}$: the number of shares issued to foreign investors at initial public offering. $D.CFOREIGN_{t-1}$: a dummy variable takes the value of one if the proportion of foreign ownership is above their means and zero otherwise. $HMARKET_{t-1}$: the percentage of H-shares and B-shares deflated by the total number of shares outstanding as of the fiscal year-end. $D.HMARKET_{t-1}$: a dummy variable takes the value of one if the firm is cross-listed on the B-share market and/or Hongkong stock exchange. $CLEVMV_{t-1}$ is measured as the change in total liabilities deflated by beginning-of-period market capitalization. $ABTM_{t-1}$: total assets / market capitalization + total assets −common equity, both measured at the end of fiscal year t−1. $SIZE_{t-1}$: the natural logarithm of market capitalization at the end of fiscal year t−1. ***, **, * indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively.

On the other hand, estimate for $DR_t * R_t * CLEVMV_{t-1} * D.JFOREIGN_{t-1}$ is positive and statistically significant (0.120*) in the Japanese setting. This again infers that foreign investors, when work on their own, are less efficient in proving accounting quality.

Finally, estimate for $DR_t * R_t * ABTM_{t-1}$ (0.233*) indicates a high level of regulatory effect in Japan. In the meantime, estimates for $DR_t * R_t * ABTM_{t-1} * D.STABLE_{t-1}$ and $DR_t * R_t * ABTM_{t-1} * D.JFOREIGN_{t-1}$ are both significantly positive (0.589*** and 0.305*). In other words, non-discretionary conservatism is adequately effective to improve conservative accounting in Japan. These test results reject H5a in this study, which predicts effects of regulatory enforcement will be neutralized in view of a closely connected shareholding structure.

As with Panel A, Model 2 in Panel B also analyzes the interplay between ownership structure and other elements that are deemed influential on the level of accounting conservatism in the Chinese setting. However, estimates for $DR_t * R_t * CLEVMV_{t-1}$ and $DR_t * R_t * ABTM_{t-1}$ are both insignificant (0.001 and -0.017), which makes it difficult to predict the cross effect of debt contracting (non-discretionary conservatism) and each ownership structure. Nonetheless, the coefficient on $DR_t * R_t * ABTM_{t-1} * D.STATE_{t-1}$ is significantly negative (-0.046*), inferring that the power of non-discretionary conservatism is not strong enough to invalidate all downward impact of state shareholdings. This contradicts the findings in Lawrence et al. [2013], wherein accounting standards deter accounting opportunism and overshadow other factors concerning accounting conservatism (e.g., debt contracting, accounting opportunism).

In summary, test results in this section provide supports that stable shareholdings (state shareholdings) are negatively associated with accounting conservatism, while cross-listing is positively correlated with timely loss recognition in the Chinese setting. Evidence in this section also indicates a weak enforcement environment in China while regulations in Japan is relatively more effective in facilitating accounting conservatism. In the next section, a model selection technique is employed to determine a more powerful predicting model with regards to the combined effects of the factors discussed in this section.

5.2.3 Test Results for GLM-SELECT

This section presents test results for general linear model selection (GLM-SELECT hereafter) which detect the relationship between firm level conservatism and ownership structure. In order to reduce the selection bias, the adaptive least absolute shrinkage and selection operator (LASSO) is implemented as the selection method (Tibshirani [1996a] and Wu and Liu [2009]). It allows predictors to enter or leave the model individually, through which only non-zero parameters would be retained in the model. I applied the Adjusted R-square statistic ($Adj.R^2$), Akaike's information criterion (AIC), Corrected Akaike's information criterion ($AICC$) and Bayesian information criterion

(BIC)/ Schwarz Bayesian information criterion (SBC) to evaluate the quality of the models produced by GLM-SELECT. In all the tests, BIC/SBC introduces a much stronger penalty over the other criterion.

Figures 1 and 2 report the selection process for Japan and China, respectively.[38] The upper plots show how the model evolves through the selection process. Each colored line represents the value taken by a different variable. The vertical axis reveals the fit statistics of the variables and assesses the relative importance of the effects selected at any step of the selection process. The horizontal axis provides information as to when effects of the selected variables enter the model. The lower plot in the panel shows the stopping criterion used to choose the model and how it changes as variables enter or leave the model. The vertical gray line connecting the upper plot and the lower plot indicates the maximum number of steps, which when reached, denotes the termination of the selection process. The effects chosen by then are viewed as the optimal model to explain the response variable.

Table 6 reports the test results for ordinary least square regression based on the original model (OLS model hereafter) and the model determined by GLM-SELECT (GLM model hereafter). Estimates on control variables are not reported for brevity. It should be noted that careful attention is needed on interpretation of test results in this section due to measurement error with regards to the dependent variables (T_SCORE_t and $CONSKEW_t$) applied in the model.

5.2.3.1 Test Results for Model 3 (Japan)

Panels A and B report test results for models chosen by GLM-SELECT in the Japanese setting. H1a predicts that stable shareholdings generate a lower demand for accounting conservatism. Estimate for $STABLE_{t-1}$ is significantly negative (-0.176***) in the CONSKEW specification. This is consistent with the prediction in this study that higher proportion of stable shareholdings reduces bad news sensitivity. On the other hand, sign on $CLEVMV_{t-1}$ is statically positive in the OLS model (0.032***), indicating that leverage serves as a primary driver for conservatism. Moreover, consistent with the expectation in this study, coefficients on $CLEVMV_{t-1} * STABLE_{t-1}$ are significantly negative in the OLS model and the GLM model (-0.067*** and -0.025***). This implies that despite the existence of increased needs for conservatism, earnings are still prone to be less responsive to bad news in the presence of high stable shareholdings, which offer supports for the H1b.

[38] Due to the update of SAS system which forces local language in descriptive analysis, figures are shown in Japanese. The author sincerely apologizes for the mix-up.

Under H5a, I also predict that a weakening enforcement environment will fail to improve accounting quality which manifests as a negative association between the measure $ABTM_{t-1}$ and the dependent variables. However, sign on the interaction term $ABTM_{t-1} * STABLE_{t-1}$ is 0.084*** in the T_SCORE specification. This result holds when the dependent variable changes to CONSKEW, where coefficient on $ABTM_{t-1} * STABLE_{t-1}$ is also statistically positive (0.061*), suggesting that negative effects of stable shareholdings are offset when assets are over evaluated. These results again reject H5a in the Japanese setting.

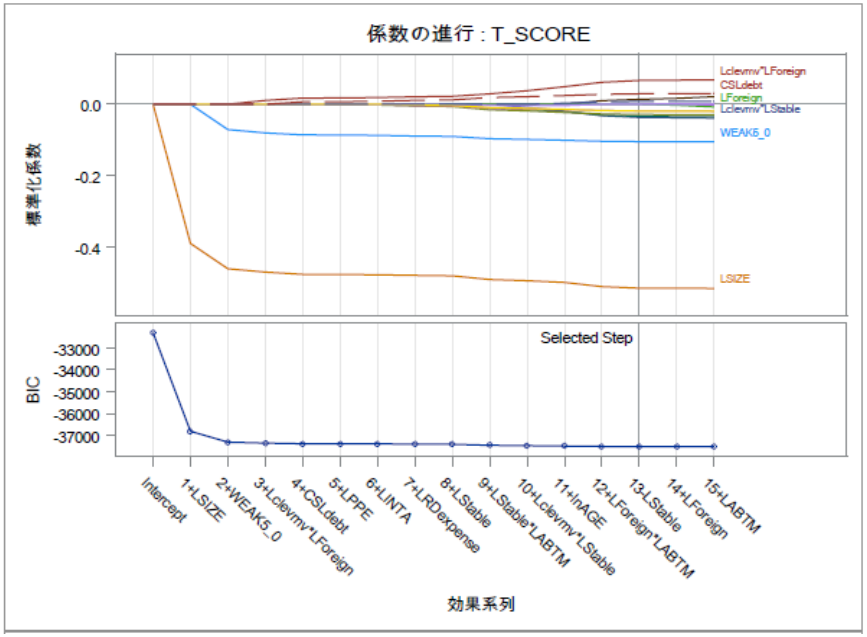
H3a predicts that foreign investors do not necessarily promote accounting conservatism and spur changes in accounting practices. However, sign on the individual effect of $FOREIGN_{t-1}$ lacks sufficient explanatory power in both of the T_SCORE and CONSKEW specifications, thereby influence of foreign investors are inconclusive in this test. Nonetheless, the interaction term of $ABTM_{t-1} * FOREIGN_{t-1}$ is significantly positive and is included in the model (0.243***), implying that foreign investors are more vigilant in asset overvaluation and assist in prompting loss cut.

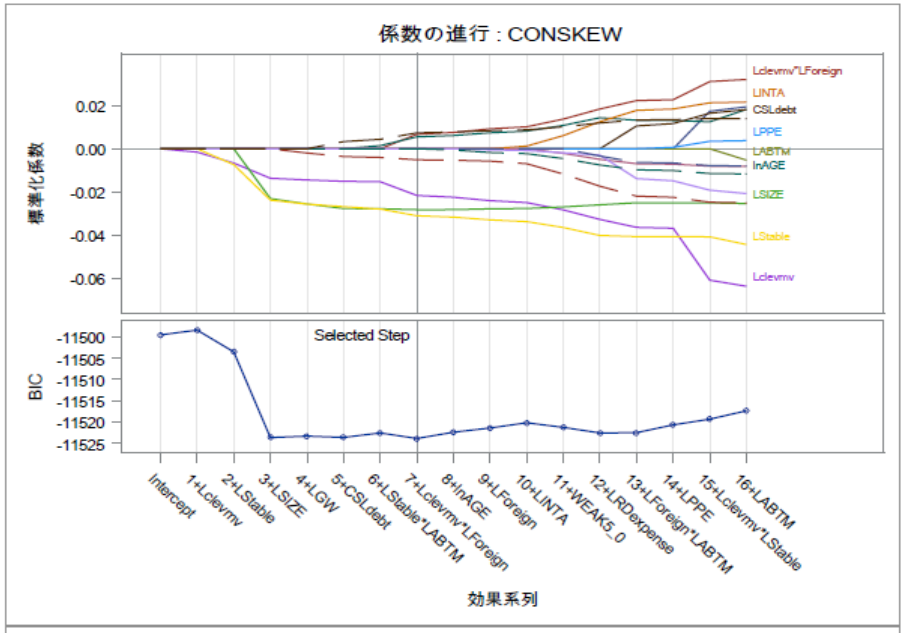
Findings in this section are similar with those in the previous section with regards to the cross effects between debt contracting and foreign equity. Coefficient on $CLEVMV_{t-1} * J.FOREIGN_{t-1}$ is significantly positive in both specifications (0.088*** and 0.009**) while the individual effect of $J.FOREIGN_{t-1}$ is not statistically significant and excluded from the model. This again implies that effects of foreign investors alone are not enough to make an impact in conventional accounting practices.

5.2.3.2 Test Results for Model 4 (China)

Turning to the Chinese setting, estimates for leverage ($CLEVMV_{t-1}$) are positive and significant at 1% level (0.098***) in the T_SCORE specification. This agrees with prior study that a major source of demand for accounting conservatism arises from creditors' needs for timely loss recognition (e.g., Watts [2003a]). H1b predicts that the presence of state shareholders moderates the conflicting interests between contracting parties and lowers sensitivity to bad news. However, effect of state ownership is insignificant in both speculations (-0.017 and -0.074). Hence, it is unclear whether state shareholdings induce lower level of accounting conservatism, which leaves H2a unanswered in the Chinese setting. On the other hand, the interaction term $CLEVMV_{t-1} * STATE_{t-1}$ is negative in both specification (-0.148*** and -0.079**), indicating that higher proportion of state ownership ensues lower level of accounting conservatism even when leverage increases. This offers supports for H2b proposed in this study. It also should be noted that the estimate for $ABTM_{t-1} * STATE_{t-1}$ is significantly negative (-0.143***) in

Figure 1 Panel A: Japan

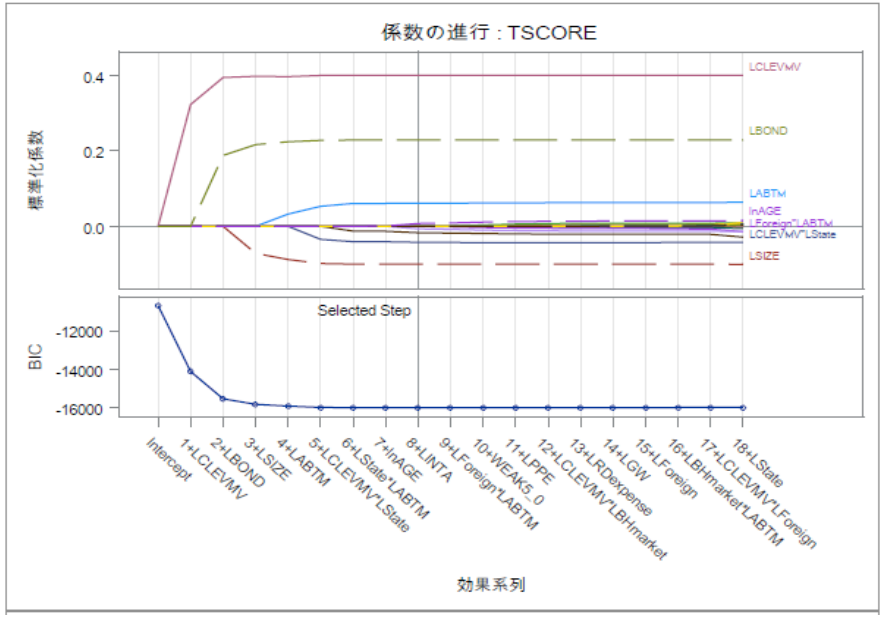


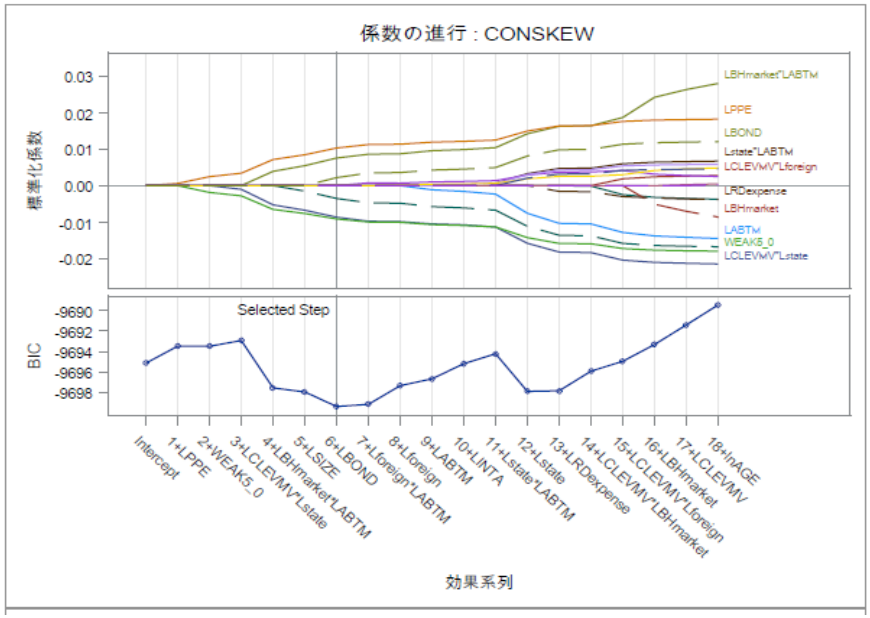


Notes:

T_SCORE_t: a firm-year conservatism measure devised in Khan and Watts [2009]. $CONSKEW_t$. the difference between the skewness of cash flows from operating activities and the skewness of net income using a three-year rolling window. $STABLE_{t-1}$: the percentage of shares owned by the largest to the tenth-largest shareholders and other persons or companies affiliated with the company as defined in Quants Research. $J.FOREIGN_{t-1}$: the percentage of shares owned by foreign individuals or institutions in Japan. $CLEVMV_{t-1}$ is measured as the change in total liabilities deflated by beginning-of-period market capitalization. $ABTM_{t-1}$: total assets / market capitalization + total assets －common equity, both measured at the end of fiscal year t－1. $SIZE_{t-1}$: the natural logarithm of market capitalization at the end of fiscal year t－1. PPE_{t-1}: proportion of property, plant and equipment assets to total assets, measured at the end of year t－1. $DEBT_{t-1}$: proceeds from debt issuance deflated by market capitalization, both measured at the end of year t－1. $lnAGE_{t-1}$: the natural logarithm of firm age. $WEAK_t$: a dummy variable takes the value of 1 if $LROA_t$ or LR_t is below 5% and 0 otherwise. $LROA_t$ is a lag indicator for ROA, computed as the average value of ROA_{t-1} and ROA_{t-2}. LR_t is a lag indicator for ROA, computed as the average value of R_{t-1} and R_{t-2}. ROA_t is measured as income before extraordinary items deflated by book value of total assets, both measured at the end of fiscal year t. R_t is the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t. GW_{t-1}: book value of goodwill deflated by total assets, both measured at the end of fiscal year t－1. $INTA_{t-1}$: book value of intangible assets deflated by total assets, both measured at the end of fiscal year t－1. RD_{t-1}. expenditure on research and development deflated by total sales, both measured at the end of fiscal year t－1.

Figure 1 Panel B: China





Notes:

T_SCORE_t: a firm-year conservatism measure devised in Khan and Watts [2009]. $CONSKEW_t$. the difference between the skewness of cash flows from operating activities and the skewness of net income using a three-year rolling window. $STATE_{t-1}$: the percentage of state-owned shares deflated by the total number of shares outstanding as of the fiscal year-end. $C.FOREIGN_{t-1}$: the number of shares issued to foreign investors at initial public offering. $HMARKET_{t-1}$: the percentage of H-shares and B-shares deflated by the total number of shares outstanding as of the fiscal year-end. $CLEVMV_{t-1}$ is measured as the change in total liabilities deflated by beginning-of-period market capitalization. $ABTM_{t-1}$: total assets / market capitalization + total assets −common equity, both measured at the end of fiscal year t−1. $SIZE_{t-1}$: the natural logarithm of market capitalization at the end of fiscal year t−1. PPE_{t-1}: proportion of property, plant and equipment assets to total assets, measured at the end of year t−1. $DEBT_{t-1}$: proceeds from debt issuance deflated by market capitalization, both measured at the end of year t−1. $lnAGE_{t-1}$: the natural logarithm of firm age. $WEAK_t$: a dummy variable takes the value of 1 if $LROA_t$ or LR_t is below 5% and 0 otherwise. $LROA_t$ is a lag indicator for ROA, computed as the average value of ROA_{t-1} and ROA_{t-2}. LR_t is a lag indicator for ROA, computed as the average value of R_{t-1} and R_{t-2}. ROA_t is measured as income before extraordinary items deflated by book value of total assets, both measured at the end of fiscal year t. R_t is the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t. GW_{t-1}: book value of goodwill deflated by total assets, both measured at the end of fiscal year t−1. $INTA_{t-1}$: book value of intangible assets deflated by total assets, both measured at the end of fiscal year t−1. RD_{t-1}. expenditure on research and development deflated by total sales, both measured at the end of fiscal year t−1.

Model 3 (Japan):

$$T\_SCORE_t\ (CONSKEW_t) = \alpha_0 + \alpha_1 CLEVMV_{t-1} + \boldsymbol{\alpha_2} ABTM_{t-1} + \alpha_3\ STABLE_{t-1} + \alpha_4 CLEVMV_{t-1} * STABLE_{t-1} + \alpha_5\ ABTM_{t-1} * STABLE_{t-1} + \alpha_6 J.FOREIGN_{t-1} + \alpha_7\ CLEVMV_{t-1} * J.FOREIGN_{t-1} + \alpha_8 ABTM_{t-1} * J.FOREIGN_{t-1} + controls + \varepsilon_t$$

Table 6　Test Results for GLM-SELECT

Panel A：Japan T_SCORE_t					
		OLS		GLM	
		estimates	P − value	*estimates*	P − value
$CLEVMV_{t-1}$	?	0.032***	(0.000)		
$ABTM_{t-1}$	+	−0.089**	(0.002)		
$STABLE_{t-1}$	−	−0.027	(0.607)		
$CLEVMV_{t-1} * STABLE_{t-1}$	−	−0.067***	(0.000)	−0.025***	(0.000)
$ABTM_{t-1} * STABLE_{t-1}$	−	−0.015	(0.748)	0.084***	(0.000)
$J.FOREIGN_{t-1}$	−	0.182	(0.059)		
$CLEVMV_{t-1} * J.FOREIGN_{t-1}$	−	0.028	(0.160)	0.088***	(0.000)
$ABTM_{t-1} * J.FOREIGN_{t-1}$	−	0.249***	(0.000)	0.243***	(0.000)
intercept		1.223***	(0.000)	0.128***	(0.000)
Adj − R^2		0.266		0.130	
N		18255			

Notes:

T_SCORE_t: a firm-year conservatism measure devised in Khan and Watts [2009]. $STABLE_{t-1}$: the percentage of shares owned by the largest to the tenth-largest shareholders and other persons or companies affiliated with the company as defined in Quants Research. $J.FOREIGN_{t-1}$: the percentage of shares owned by foreign individuals or institutions in Japan. $CLEVMV_{t-1}$ is measured as the change in total liabilities deflated by beginning-of-period market capitalization. $ABTM_{t-1}$: total assets / market capitalization + total assets −common equity, both measured at the end of fiscal year t−1. ***, **, * indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively.

Table 6　Test Results for GLM-SELECT

Panel B：Japan $CONSKEW_t$					
		OLS		GLM	
		estimates	P − value	*estimates*	P − value
$CLEVMV_{t-1}$	?	−0.025	(0.204)	−0.002**	(0.009)
$ABTM_{t-1}$	+	0.085	(0.184)		
$STABLE_{t-1}$	−	−0.074***	(0.000)	−0.176***	(0.000)
$CLEVMV_{t-1} * STABLE_{t-1}$	−	0.015	(0.627)		
$ABTM_{t-1} * STABLE_{t-1}$	−	0.084	(0.432)	0.061*	(0.028)
$J.FOREIGN_{t-1}$	−	−0.171	(0.272)		
$CLEVMV_{t-1} * J.FOREIGN_{t-1}$	−	0.069	(0.125)	0.009**	(0.009)
$ABTM_{t-1} * J.FOREIGN_{t-1}$	−	0.169	(0.277)		
intercept		0.148	(0.109)	0.201***	(0.000)
Adj − R^2		0.003		0.003	
N		16798			

Notes:

$CONSKEW_t$. the difference between the skewness of cash flows from operating activities and the skewness of net income using a three-year rolling window. $STABLE_{t-1}$: the percentage of shares owned by the largest to the tenth-largest shareholders and other persons or companies affiliated with the company as defined in Quants Research. $J.FOREIGN_{t-1}$: the percentage of shares owned by foreign individuals or institutions in Japan. $CLEVMV_{t-1}$: the change in total liabilities deflated by beginning-of-period market capitalization. $ABTM_{t-1}$: total assets / market capitalization + total assets −common equity, both measured at the end of fiscal year t−1. ***, **, * indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively.

Model 4 (China):

$$T\_SCORE_t\ (CONSKEW_t) = \alpha_0 + \alpha_1 CLEVMV_{t-1} + \alpha_2 ABTM_{t-1} + \alpha_3\ STATE_{t-1} + \alpha_4 CLEVMV_{t-1} * STATE_{t-1} + \alpha_5 ABTM_{t-1} * STATE_{t-1} + \alpha_6 C.FOREIGN_{t-1} + \alpha_7\ CLEVMV_{t-1} * C.FOREIGN_{t-1} + \alpha_8 ABTM_{t-1} * C.FOREIGN_{t-1} + \alpha_{10} BHMARKET_{t-1} + \alpha_{10} CLEVMV_{t-1} * BHMARKET_{t-1} + \alpha_{11} ABTM_{t-1} * BHMARKET_{t-1} + controls + \varepsilon_t$$

Table 6 Test Results for GLM-SELECT

Panel C : China T_SCORE_t					
		OLS		GLM	
		estimates	P − value	*estimates*	P − value
$CLEVMV_{t-1}$	?	0.051***	(0.000)	0.098***	(0.000)
$ABTM_{t-1}$	+	0.110***	(0.000)	0.145***	(0.000)
$STATE_{t-1}$	−	−0.017	(0.678)		
$CLEVMV_{t-1} * STATE_{t-1}$	−	−0.088***	(0.000)	−0.148***	(0.000)
$ABTM_{t-1} * STATE_{t-1}$	−	−0.023	(0.715)	−0.143***	(0.000)
$C.FOREIGN_{t-1}$	−	0.086	(0.536)		
$CLEVMV_{t-1} * C.FOREIGN_{t-1}$	−	−0.107	(0.667)		
$ABTM_{t-1} * C.FOREIGN_{t-1}$	−	−0.194	(0.476)		
$BHMARKET_{t-1}$	−	−0.025	(0.456)		
$CLEVMV_{t-1} * BHMARKET_{t-1}$	−	0.031	(0.051)		
$ABTM_{t-1} * BHMARKET_{t-1}$	−	0.014	(0.727)		
intercept		0.931***	(0.000)	1.355***	(0.000)
Adj − R^2		0.383		0.315	
N		25414			

Notes: T_SCORE_t: a firm-year conservatism measure devised in Khan and Watts [2009].

Table 6　Test Results for GLM-SELECT

Panel D：China $CONSKEW_t$					
		OLS		GLM	
		estimates	P－value	*estimates*	P－value
$CLEVMV_{t-1}$	?	−0.005	(0.137)		
$ABTM_{t-1}$	+	0.008	(0.636)		
$STATE_{t-1}$	−	−0.074	(0.306)		
$CLEVMV_{t-1} * STATE_{t-1}$	−	−0.053	(0.088)	−0.079**	(0.001)
$ABTM_{t-1} * STATE_{t-1}$	−	0.177	(0.106)		
$C.FOREIGN_{t-1}$	−	−0.012	(0.967)		
$CLEVMV_{t-1} * C.FOREIGN_{t-1}$	−	0.114	(0.789)		
$ABTM_{t-1} * C.FOREIGN_{t-1}$	−	0.217	(0.679)		
$BHMARKET_{t-1}$	−	0.073	(0.195)		
$CLEVMV_{t-1} * BHMARKET_{t-1}$	−	−0.048	(0.099)		
$ABTM_{t-1} * BHMARKET_{t-1}$	−	0.020	(0.770)	0.061**	(0.001)
intercept		0.159	(0.093)	0.104***	(0.000)
Adj－R^2		0.007		0.006	
N		21771			

Notes:

$CONSKEW_t$. the difference between the skewness of cash flows from operating activities and the skewness of net income using a three-year rolling window. $STATE_{t-1}$: the percentage of state-owned shares deflated by the total number of shares outstanding as of the fiscal year-end. $C.FOREIGN_{t-1}$: the number of shares issued to foreign investors at initial public offering. $HMARKET_{t-1}$: the percentage of H-shares and B-shares deflated by the total number of shares outstanding as of the fiscal year-end. $CLEVMV_{t-1}$ is measured as the change in total liabilities deflated by beginning-of-period market capitalization. $ABTM_{t-1}$: total assets / market capitalization + total assets －common equity, both measured at the end of fiscal year t－1. $SIZE_{t-1}$: the natural logarithm of market capitalization at the end of fiscal year t－1. ***, **, * indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively.

the T_SCORE specification, which is consistent with the test results in the modified Basu model. In short, this supports H5b that accounting standards lack enough deterring power to discipline timely loss recognition as state shareholdings increases in the Chinese setting.

On the other hand, public companies listed in a more advanced information environment (B-share and H-share market) are usually expected to recognize losses more quickly than other companies with a domestic listing only as they are exposed to much greater pressures for adequate levels of disclosure placed by investors. As is demonstrated in Panel D, although the individual effect of $BHMARKET_{t-1}$ is not included in both models, its interaction term with non-discretionary conservatism ($ABTM_{t-1} * BHMARKET_{t-1}$) is significantly positive (0.061**) in the CONSKEW specification. This implies that non-discretionary conservatism facilitates timelier loss recognition when combined with better information infrastructure.

To sum, findings in this section offer support for H1b and H2b that stable (state) ownership depresses accounting conservatism in Japan (China) even when circumstance (change in leverage) predicts the opposite. In addition, test results substantiate H5b in the Chinese setting that non-discretionary conservatism is less effective in promoting accounting quality. On the contrary, H5a is rejected in the Japanese setting as the interaction term with $ABTM$ ratio for stable shareholdings is significantly positive. Finally, test results documented in the Chinese setting provides additional evidence to reject H4a and suggests the importance of an advanced information environment on timely loss recognition.

6. Additional Test : Accrual Model

As a final test, I employed a modified accrual model to examine the degree of conditional conservatism in this section. In line with Basu [1997], Ball and Shivakumar [2006] argue that conservatism also induces asymmetry in the timeliness of gain and loss accrual recognition in which operating cash flows indicate the bad news and the good news. According to their framework, a decline in operating cash flows, more often than not, indicates a reduction in the asset's value (bad news). Hence, loss accruals should be captured in a timelier manner as conservatism requires management to reflect such value deterioration at the time the information arises.

$$\mathrm{ACC_t} = \alpha_0 + \alpha_1 D\Delta CF_{\mathrm{t}} + \alpha_2 \Delta CF_t + \alpha_3 D\Delta CF_{\mathrm{t}} * \Delta CF_{\mathrm{t}} + \alpha_4 \Delta REV_t + \alpha_5 GPPE + \varepsilon_t \qquad \text{Eq.2}$$

where $\mathrm{ACC_t}$ denotes accruals in year t.[39] ΔCF_t denotes changes in cash flows from operations taken form the cash flow statement. $D\Delta CF_t$ is a dummy variable, taking the value of 1 if ΔCF_t is negative and zero otherwise. ΔREV_t denotes changes in net sales in year t. $GPPE_t$ denotes gross property, plant, and equipment. The variables are all deflated by average total assets in year t. As in Jones model, changes in sales control for non-discretionary accruals of current assets and liabilities, while property, plant and equipment control for the non-discretionary component of depreciation expenses. Again, as with Basu [1997], $D\Delta CF_\mathrm{t} * \Delta CF_\mathrm{t}$ measures the extent to which firms are conservative. Under conservative reporting, $D\Delta CF_\mathrm{t} * \Delta CF_\mathrm{t}$ is expected to be positive. Following García Lara et al. [2009] and Haw et al. [2014], I incorporate both the main effect variables and their interaction terms into the base-line accrual model to examine the relationship between ownership structure and the level of accounting conservatism .

Model 5:

$$\mathrm{ACC_t} = \alpha_0 + \alpha_1 D\Delta CF_t + \alpha_2 \Delta CF_\mathrm{t} + \alpha_3 D\Delta CF_\mathrm{t} * \Delta CF_\mathrm{t} + \alpha_4 D.X_{t-1} + \alpha_5 D\Delta CF_t * D.X_{t-1} + \alpha_6 \Delta CF_\mathrm{t} * D.X_{t-1} + \alpha_7 D\Delta CF_\mathrm{t} * \Delta CF_\mathrm{t} * X_{t-1} + \alpha_8 CLEVMV_{t-1} + \alpha_9 D\Delta CF_t * CLEVMV_{t-1} + \alpha_{10} \Delta CF_\mathrm{t} * CLEVMV_{t-1} + \alpha_{11} D\Delta CF_t * \Delta CF_\mathrm{t} * CLEVMV_{t-1} + \alpha_{12} ABTM_{t-1} + \alpha_{13} D\Delta CF_t * ABTM_{t-1} + \alpha_{14} \Delta CF_\mathrm{t} * ABTM_{t-1} + \alpha_{15} D\Delta CF_t * \Delta CF_\mathrm{t} * ABTM_{t-1} + \alpha_{16} CLEVMV_{t-1} * D.X_{t-1} + \alpha_{17} D\Delta CF_t * CLEVMV_{t-1} * D.X_{t-1} + \alpha_{18} \Delta CF_\mathrm{t} * CLEVMV_{t-1} * D.X_{t-1} + \alpha_{19} D\Delta CF_t * \Delta CF_\mathrm{t} * CLEVMV_{t-1} * D.X_{t-1} + \alpha_{20} ABTM_{t-1} * D.X_{t-1} + \alpha_{21} D\Delta CF_t * ABTM_{t-1} * D.X_{t-1} + \alpha_{22} \Delta CF_\mathrm{t} * ABTM_{t-1} * D.X_{t-1} + \alpha_{23} D\Delta CF_t * \Delta CF_\mathrm{t} * ABTM_{t-1} * D.X_{t-1} + \alpha_{24} \Delta REV_t + \alpha_{25} GPPE_t + year\ fixed\ effects + indusrty\ fixed\ effects + \varepsilon_t$$

In model 5, $D.X_{t-1}$ divides samples into two groups with different level of concentration in each ownership structure. In the Japanese settings, $D.STABLE_{\mathrm{t-1}}$ and $D.JFOREIGN_{\mathrm{t-1}}$ takes the value of one if the proportion of stable ownership or foreign ownership is above their means, respectively. In the Chinese setting, $D.STATE_{t-1}$ ($D.CFOREIGN_{\mathrm{t-1}}$) takes the value of one if the proportion of stable ownership or foreign ownership is above their means. $D.BHMARKET_{t-1}$ takes the value of one if the firm is cross-listed on the B-share market and/or Hong Kong stock exchange.

According to H1a and H2a, I expect that the presence of stable (state) shareholders will reduce the demand for timelier loss recognition, therefore the predicted sign for $D\Delta CF_\mathrm{t} * \Delta CF_\mathrm{t} * D.STABLE_{t-1}$ and $D\Delta CF_\mathrm{t} * \Delta CF_\mathrm{t} * D.STATE_{t-1}$ is negative. In a similar vein, I

[39] Following Kothari et al. [2005], accruals in year t are measured based on the following equation:
$ACC_t = \Delta CA_t - \Delta Cash_t - (\Delta CL_t - \Delta STD_t) - Dep_t$
ΔCA_t : change in current assets
$\Delta Cash_t$: change in cash and cash equivalents
ΔCL_t : change in current liabilities
ΔSTD_t : change in current liabilities transformed from non-current liabilities
Dep_t : depreciation expenses

expect that influence of foreign investors would be weaker due to the unique institutional environments in those two accounting regimes.

Table 7 summarizes the test results for the modified accrual model. In Table 7, Panel A reports the fixed effects regression results for the Japanese setting. With regard to H1a in this study, the anticipated sign on the primary variable of interest, $D.STABLE_{t-1}$ is negative. However, estimate on $D\Delta CF_{\mathrm{t}} * \Delta CF_{\mathrm{t}} * STATE_{t-1}$ is significantly positive (0.337***), which differs with test results in the modified Basu models (coefficient on $\mathrm{DR_t} * R_t * STATE_{t-1}$and $\mathrm{DR_t} * R_t * D.STATE_{t-1}$ is significantly negative (−0.025*** and −0.007*)). One possible explanation of the observed change in sign and significance on stable shareholdings ($STABLE_{t-1}$) in the accrual-based model could be interpreted as effects of a developed regulatory infrastructure in Japan and management's deviation from accrual management. It is consistent with the conjectures made in Cohen et al. [2008] and Cohen and Zarowin [2010] that accrual-based earnings management is costlier and much easier to be detected by auditors. Therefore, results in Panel A could not entirely reject H1a in that firms could still delay loss recognition in non-cash-based transactions (i.e., asset impairment losses). Turning to foreign shareholdings in Panel A, sign on the dummy variable $D.JFOREIGN_{t-1}$ is −0.551, suggesting that higher proportion of foreign investors does not necessarily lead to higher commitment to conservatism. As an additional test, I also replace the main effect to adjusted foreign ownership ($A.JFOREIGN_{t-1}$)[40] suggested in Jiang and Kim [2004]. It measures the proportion of foreign equity ownership relative to that of stable ownership. Estimate for $A.JFOREIGN_{t-1}$ is 0.056*** (P − value = 0.000). This result shows that foreign investors are more likely to actively prompt accounting conservatism in firms whose proportion of stable ownership is relatively lower.

H1b predicts that creditors do not sufficiently facilitate accounting conservatism as ownership concentration intensifies among a close network of shareholders in Japan. However, estimate for $D\Delta CF_t * \Delta CF_{\mathrm{t}} * CLEVMV_{t-1}$ is negative and statistically significant (−0.080***), suggesting that the level of conservatism decreases when leverage is higher than the previous accounting period. The negative impact comes from the cross effect of debt contracting and stable shareholdings ($D\Delta CF_t * \Delta CF_{\mathrm{t}} * CLEVMV_{t-1} *$

[40] Adjusted foreign ownership ($A.JFOREIGN_{t-1}$) is measured as follows:

$$A.JFOREIGN_{t-1} = J.FOREIGN_{t-1}/(1 - STABLE_{t-1})$$

where:

$J.FOREIGN_{t-1}$: the percentage of shares owned by foreign individuals or institutions in Japan.

$STABLE_{t-1}$: the percentage of shares owned by the largest to the tenth-largest shareholders and other persons or companies affiliated with the company.

$D.STABLE_{t-1}$=−0.071***) could be then attributed to management's incentives to avoid inflated financial leverage when the proportion of stable shareholdings grows higher. In conclusion, the accrual model provides additional evidence for H1b. On the other hand, sign on $D\Delta CF_t * \Delta CF_t * ABTM_{t-1}$ is positive and significant at the 1% level (0.676***), implying a sound enforcement effects of accounting standards. Moreover, estimate for $D\Delta CF_t * \Delta CF_t * ABTM_{t-1} * D.STABLE_{t-1}$ is also statistically positive (0.419***). When compared with the estimate for $D\Delta CF_t * \Delta CF_t * D.STABLE_{t-1}$ (0.337***), the increased economic importance could be attributed to the inclusion of $ABTM_{t-1}$. This shows that non-discretionary conservatism has an incremental positive effect on accounting conservatism, which is consistent with evidence found in the modified Basu model ($ABTM_{t-1} * D.STABLE_{t-1}$ = 0.589***) and GLM-SELCET analysis ($ABTM_{t-1} * D.STABLE_{t-1}$ = 0.084*** and 0.061*) and rejects H5a proposed in Section 3.1.

Turning to cross effects for foreign shareholdings in Panel A, the coefficient on $D\Delta CF_t * \Delta CF_t * CLEVMV_{t-1} * D.JFOREIGN_{t-1}$ is significantly negative (−0.131 ***) in the accrual model. This is different with findings in the previous sections wherein the coefficient on $CLEVMV_{t-1} * D.JFOREIGN_{t-1}$ is significantly positive (0.120* in the modified Basu model; 0.088*** in the GLM − T_SCORE specification and 0.009** in the GLM − CONSKEW specification). [41] The change in the sign on $D\Delta CF_t * \Delta CF_t * CLEVMV_{t-1} * D.JFOREIGN_{t-1}$ could be attributed to the downward impact of leverage, but it also indirectly implies that a higher proportion of foreign equity does not contribute to higher level of conservative accounting, which partly substantiate the argument in Usui [2015],

[41] To exclude the possibility that the change in sign on $CLEVMV_{t-1}$ and $CLEVMV_{t-1} * D.JFOREIGN_{t-1}$ is due to measurement error (use of different deflater), I replaced $CLEVMV_{t-1}$ and $ABTM_{t-1}$ with two dummy variables, i.e., $Tr.CLEVMV_t$ and $BTMD_t$ using the model specification shown below. Test results show that the sign on $CLEVMV_{t-1}$ is positive but is not statistically significant (0.029, P − value = 0.61) while that on $CLEVMV_{t-1} * D.JFOREIGN_{t-1}$ is insignificantly negative (−0.018, P − value = 0.776). I also replace the $D.JFOREIGN_{t-1}$ with $D.AJFOREIGN_{t-1}$, which is a dummy variable takes the value of one if $D.AJFOREIGN_{t-1}$ (the relative proportion of foreign equity against stable shareholdings) is above its mean value. The estimate remains significantly negative (−0.110***). Furthermore, test results produced by the following model do not change the core findings in this study.

$$\begin{aligned}ACC_t = {} & \alpha_0 + \alpha_1 D\Delta CF_t + \alpha_2 \Delta CF_t + \alpha_3 D\Delta CF_t * \Delta CF_t + \alpha_4 X_{t-1} + \alpha_5 D\Delta CF_t * X_{t-1} + \alpha_6 \Delta CF_t * X_{t-1} + \\ & \alpha_7 D\Delta CF_t * \Delta CF_t * X_{t-1} + \alpha_8 Tr.CLEVMV_{t-1} + \alpha_9 D\Delta CF_t * Tr.CLEVMV_{t-1} + \alpha_{10} \Delta CF_t * Tr.CLEVMV_{t-1} + \\ & \alpha_{11} D\Delta CF_t * \Delta CF_t * Tr.CLEVMV_{t-1} + \alpha_{12} BTMD_t + \alpha_{13} D\Delta CF_t * BTMD_t + \alpha_{14} \Delta CF_t * BTMD_t + \alpha_{15} D\Delta CF_t * \\ & \Delta CF_t * BTMD_t + \alpha_{16} Tr.CLEVMV_{t-1} * X_{t-1} + \alpha_{17} D\Delta CF_t * Tr.CLEVMV_{t-1} * X_{t-1} + \alpha_{18} \Delta CF_t * \\ & Tr.CLEVMV_{t-1} * X_{t-1} + \alpha_{19} D\Delta CF_t * \Delta CF_t * Tr.CLEVMV_{t-1} * X_{t-1} + \alpha_{20} BTMD_t * X_{t-1} + \alpha_{21} D\Delta CF_t * \\ & BTMD_t * X_{t-1} + \alpha_{22} \Delta CF_t * BTMD_t * X_{t-1} + \alpha_{23} D\Delta CF_t * \Delta CF_t * BTMD_t * X_{t-1} + \alpha_{24} \Delta REV_t + \alpha_{25} GPPE_t + \\ & year\ fixed\ effects + indusrty\ fixed\ effects + \varepsilon_t\end{aligned}$$

$Tr.CLEVMV_{t-1}$ is a dummy variable taking the value of one if $CLEVMV_{t-1}$ is positive and zero otherwise. $BTMD_t$ is a dummy variable takes the value of one when $ABTM_{t-1}$ is above one, and zero otherwise.

who found higher percentage of foreign equity is negatively associated with the level of accounting conservatism.

On the other hand, the positive estimate on $D\Delta CF_t * \Delta CF_t * ABTM_{t-1} * D.JFOREIGN_{t-1}$ is significantly positive (0.493***). It could be considered as the power of regulatory enforcement. This evidence provides additional evidence on the importance of regulatory environments on accounting quality.

Test results for the Chinese setting are presented in Panel B. Under H2a, I posit that state-owned entities are favored and supported by the government to achieve certain political goals. As a result, even some investment is not profitable, firms with higher presence of the state will not cut back on those project in a timelier manner. Evidence in Panel C is consistent with my conjecture and findings in the previous sections. Estimates of $D\Delta CF_t * \Delta CF_t * D.STATE_{t-1}$ are negative and statistically significant (−0.299***), which further confirms that firms with higher state shareholdings reacts negatively to bad news.

Table 7　Test Results for Accrual Model

Panel A：Japan		
$D\Delta CF_t * \Delta CF_t$	0.471***	(0.000)
$D\Delta CF_t * \Delta CF_t * CLEVMV_{t-1}$	−0.080*	(0.011)
$D\Delta CF_t * \Delta CF_t * ABTM_{t-1}$	0.676***	(0.000)
$D\Delta CF_t * \Delta CF_t * D.STABLE_{t-1}$	0.337***	(0.000)
$D\Delta CF_t * \Delta CF_t * CLEVMV_{t-1} * D.STABLE_{t-1}$	−0.071*	(0.029)
$D\Delta CF_t * \Delta CF_t * ABTM_{t-1} * D.STABLE_{t-1}$	0.419***	(0.000)
$D\Delta CF_t * \Delta CF_t * D.JFOREIGN_{t-1}$	−0.551	(0.168)
$D\Delta CF_t * \Delta CF_t * CLEVMV_{t-1} * D.JFOREIGN_{t-1}$	−0.131***	(0.000)
$D\Delta CF_t * \Delta CF_t * ABTM_{t-1} * D.JFOREIGN_{t-1}$	0.493***	(0.000)
$D\Delta CF_t * \Delta CF_t * SIZE_{t-1}$	−0.221***	(0.000)
intercept	0.017	(0.342)
F	313.42	
N	18255	

Notes:

ACC_t: accruals in year t deflated by average total assets. ΔCF_t: changes in cash flows from operations deflated by average total assets. $D\Delta CF_t$: a dummy variable, taking the value of 1 if $\Delta CF_t$is negative and 0 otherwise. $STABLE_{t-1}$: the percentage of shares owned by the largest to the tenth-largest shareholders and other persons or companies affiliated with the company as defined in Quants Research. $D.STABLE_{t-1}$: a dummy variable takes the value of one if the proportion of stable shareholders is above the mean and zero otherwise. $J.FOREIGN_{t-1}$: the percentage of shares owned by foreign individuals or institutions in Japan. $D.JFOREIGN_{t-1}$: a dummy variable takes the value of one if the proportion of foreign shareholders is above the mean and zero otherwise. $CLEVMV_{t-1}$: change in total liabilities deflated by beginning-of-period market capitalization. $ABTM_{t-1}$: total assets / market capitalization + total

assets −common equity, both measured at the end of fiscal year t−1. $SIZE_{t-1}$: the natural logarithm of market capitalization at the end of fiscal year t−1. ***, **, * indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively.

On the other hand, evidence shows that firms are not timelier in responding to unrealized losses with a presence of foreign shareholders as predicted in H3a in the Chinese setting. Although it is statistically insignificant, coefficient on $D\Delta CF_{\mathrm{t}} * \Delta CF_{\mathrm{t}} * D.FOREIGN_{t-1}$ is negative (−0.139). Since the data employed in this study only includes foreign investors as a founding member (IPO legal person share), although it to some degree addresses the endogeneity concerns, it also changes the nature of such investment. An alternative explanation is that, accruals become an easy target for earnings management due to a poorly enforced information infrastructure in China as opposed to Japan and the U.S. It is also possible that the cost to implement higher reporting practice will be even higher for foreign investors. Therefore, effects of foreign investor on accounting conservatism are yet not conclusive in this section. As is forecast in H4a, Panel B shows that firms with a cross-listing status show greater level of accounting conservatism. The negative relation between accruals and cash flow is more profound for cross-listing firms as demonstrated by the significantly positive coefficient on $D\Delta CF_{\mathrm{t}} * \Delta CF_{\mathrm{t}} * D.BHMARKET_{t-1}$ (0.484**).

Panel B also reports the test results for the cross effect between debt contracting and non-discretionary conservatism. First, it is noteworthy that estimates for $D\Delta CF_t * \Delta CF_{\mathrm{t}} * CLEVMV_{t-1}$ and $D\Delta CF_t * \Delta CF_{\mathrm{t}} * ABTM_{t-1}$ are both significantly negative (−0.053*** and −0.741***), which reflects a weaker regulatory environment in China. Nonetheless, the interaction term between $CLEVMV_{t-1}$ and $D.FOREIGN_{t-1}$ is significantly positive (0.701***), extending partial evidence to reject H3b. Moreover, interaction terms involving $D.BHMARKET_{t-1}$ are also positive and statistically significant (0.312*** and 0.515*), which supplements test results in other analyses applied in this study and shows that exposure to sophisticated market does improve earnings quality.

To summarize test results in this section, empirical evidence overall provides strong support for the downward impact of state ownership on accounting conservatism in China. Second, findings in this section, together with test results in Section 5.2.3 (GLM-SELECT), suggest that the relationship between foreign shareholdings and accounting conservatism is indirect and weak. Finally, test results also uphold the importance of regulatory power and the positive effects of cross-listing on accounting conservatism. Table 8 presents the test results for each hypothesis in this study.

Table 7　Test Results for Accrual Model

Panel B：China		
$D\Delta CF_t * \Delta CF_t$	1.166***	(0.000)
$D\Delta CF_t * \Delta CF_t * CLEVMV_{t-1}$	−0.053***	(0.000)
$D\Delta CF_t * \Delta CF_t * ABTM_{t-1}$	−0.741***	(0.000)
$D\Delta CF_t * \Delta CF_t * D.STATE_{t-1}$	−0.299**	(0.002)
$D\Delta CF_t * \Delta CF_t * CLEVMV_{t-1} * D.STATE_{t-1}$	−0.022	(0.790)
$D\Delta CF_t * \Delta CF_t * ABTM_{t-1} * D.STATE_{t-1}$	0.045	(0.776)
$D\Delta CF_t * \Delta CF_t * D.CFOREIGN_{t-1}$	−0.139	(0.594)
$D\Delta CF_t * \Delta CF_t * CLEVMV_{t-1} * D.CFOREIGN_{t-1}$	0.701*	(0.015)
$D\Delta CF_t * \Delta CF_t * ABTM_{t-1} * D.CFOREIGN_{t-1}$	0.262	(0.520)
$D\Delta CF_t * \Delta CF_t * D.BHMARKET_{t-1}$	0.484*	(0.013)
$D\Delta CF_t * \Delta CF_t * CLEVMV_{t-1} * D.BHMARKET_{t-1}$	0.312***	(0.001)
$D\Delta CF_t * \Delta CF_t * ABTM_{t-1} * D.BHMARKET_{t-1}$	0.515*	(0.046)
$D\Delta CF_t * \Delta CF_t * SIZE_{t-1}$	−0.052*	(0.018)
intercept	0.184***	(0.000)
F	31.57	
N	25414	

Notes:

ACC_t: accruals in year t deflated by average total assets. ΔCF_t: changes in cash flows from operations deflated by average total assets. $D\Delta CF_t$: a dummy variable, taking the value of 1 if $\Delta CF_t$is negative and 0 otherwise. $STATE_{t-1}$: the percentage of state-owned shares deflated by the total number of shares outstanding as of the fiscal year-end. $D.STATE_{t-1}$: a dummy variable takes the value of one if the proportion of state shareholders is above the mean and zero otherwise. $C.FOREIGN_{t-1}$: the number of shares issued to foreign investors at initial public offering. $D.CFOREIGN_{t-1}$: a dummy variable takes the value of one if the proportion of foreign ownership is above their means and zero otherwise. $HMARKET_{t-1}$: the percentage of H-shares and B-shares deflated by the total number of shares outstanding as of the fiscal year-end. $D.HMARKET_{t-1}$: a dummy variable takes the value of one if the firm is cross-listed on the B-share market and/or Hongkong stock exchange. $CLEVMV_{t-1}$: change in total liabilities deflated by beginning-of-period market capitalization. $ABTM_{t-1}$: total assets / market capitalization + total assets −common equity, both measured at the end of fiscal year t−1. $SIZE_{t-1}$: the natural logarithm of market capitalization at the end of fiscal year t−1. ***, **, * indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively.

Table 8 : Summary of Test Results A

	Results	Japan	China
H1a	uphold	Sign on $STABLE_{t-1}$ is significantly negative in Models 1 through 3. Contradicting evidence found in Model 5.	
H1b	uphold	Sign on $CLEVMV_{t-1} * STABLE_{t-1}$ is significantly negative in Models 2,3, and 5.	
H2a	uphold		Sign on $STATE_{t-1}$ is significantly negative in Model 1, 2, and 5.
H2b	uphold		Sign on $\mathrm{CLEVMV}_{t-1} * STATE_{t-1}$ is significantly negative in Models 4 and 5.
H3a	unanswered	No evidence found in all models.	No evidence found in all models.
H3b	rejected	Sign on $CLEVMV_{t-1} * J.FOREIGN_{t-1}$ is significantly positive in Models 2 and 3. Contradicting evidence found in Model 5.	Sign on $\mathrm{CLEVMV}_{t-1} * C.FOREIGN_{t-1}$ is significantly positive in Model 5.
H4a	rejected		Sign on $BHMARKET_{t-1}$ is significantly positive in Models 1, 2, and 5.
H4b	rejected		Sign on $CLEVMV_{t-1} * BHMARKET_{t-1}$ is significantly positive in Model 5.
H5a	rejected	Sign on $\mathrm{ABTM}_{t-1} * STABLE_{t-1}$ is significantly positive in Models 2, 3 and 5.	
H5b	uphold		Sign on $\mathrm{ABTM}_{t-1} * STATE_{t-1}$ is significantly negative in Models 2 and 4.

Notes:

Models 1 and 2 modify Basu's [1997] framework through incorporating ownership variables into an earnings-return regression. Model 3 (Japan) and Model 4 (China) utilize a model select technique (GLM-SELECT) with T_SCORE or CONSKEW being the dependent variable. Model 5 modifies Ball and Shivakumar's [2006] framework through incorporating ownership variables into an accrual-based model.

7. Conclusion

This study has sought out to add to the extant literature on how ownership structure is associated with accounting conservatism in two unique institutional environments. The institutional features in Japan and China provide a desirable setting to evaluate the impact of ownership on accounting practice, and to investigate whether this impact differs systematically with the institutional basics. Prior study has already pointed out that the level of accounting conservatism adopted in a firm associates with the relative

equilibrium results from conflicting of interests between different stakeholders (e.g., Cullinan et al. [2012], Usui [2015]). Findings in this study compliments prior studies and show that stable shareholdings and state ownership, both of which can weaken shareholders' incentive to monitor, lead to variation in management's accounting decisions and result in lower level of conservatism.

This study also aims to examine whether other factors which are in favor of accounting conservatism resists or facilitates influence of a unique governance mechanism. For example, evidence documented in previous studies has provided much insight on the interrelated relation between debt contracting and conservative reporting. (e.g., Qiang [2007], Ball et al. [2008], Beatty et al. [2008], Nakamura [2009], Nikolaev [2010a], Haw et al. [2014], Ishida [2016]). In short, debt holders need a lower bound on the annual reporting to detect value deterioration and thus prevent exploitation from management and shareholders. Firms benefit from more conservative accounting to reduce capital cost. However, reporting practices varies across different accounting regimes and thereby could possibly affect the effectiveness of this mechanism. Table 9 summarizes the main findings concerning the cross effects of debt contracting. It demonstrates the sign and significance level on the main effect of each predictor tested in this study and their interaction terms. First, effects of debt contract on average fluctuate between stable (state) shareholdings and foreign shareholdings. Overall, evidence found in this study attests to the conjecture that debt holders overlook sign for loss recognition when the proportion of stable shareholders (state shareholders) is larger. Nonetheless, monitoring from debt holders strengthens when the proportion of foreign equity rises.

Another explanation for the rising of accounting conservatism is regulator's demands for timely loss recognition (Watts [2003], Qiang [2007]). Notwithstanding, one frequently voiced concern in the context of accounting conservatism is management's willingness to recognize losses as they occur. In spite of the fact that management has an asymmetric incentive to recognize gains earlier than losses, the flexibilities inherent in the accounting standards could have failed to curb such opportunistic accounting behavior (e.g., Francis et al. [1996], Riedl [2004a]). In this study, I employed the measure of ASSET-BTM proposed in Lawrence et al. [2013] to examine the effect of mandated regulation on accounting practice in both crounties. As is shown in Table 9, compared to the Chinese setting, Japan has a better enforcement enviorment to improve accounting quality. In particular, it nulified stable shareholder's disclosure preference over less conservative accoutnting. On the contray, it is less influencial in the Chinese setting to offset the negative impact of state shareholdings on timely loss recgnition. Nontheless, evidence with regard to the effect of cross-listing suggest that firms dual-list in the B-

share or H-share market execute more conservative accounting, whih further emphasizes the importance of a better information enviornment on quality accounting reporting. This result holds in the four model specifications analyized in this study. On the other hand, no substancial proof verifies or subverts hypothses with regards to effects of foreign equity.

Although the core evidence in this study is on average robust, test results may suffer from model misspecifications and omitted variables. Variables proxy for ownership structure also need further screening to account for their genuine effects over accounting policies. Furthermore, other measures (e.g., $CLEVMV$) employed in this study may not be sophisticated enough to pick up the actual effects as intended. Finally, more work is required to enhance theoretical establishment.

To my knowledge, this study constitutes the first effort to examine how differential ownership structure, debt contracting arrangements, and accounting regulations interplay over accounting conservatism. Most importantly, this study highlights the notion that accounting quality is a function of institutional setting in which the firm resides. As data become more widely available, future work will focus on identifying and evaluating the effects of institutional differences on accounting conservatism and other earnings qualities.

Table 9 Summary of Test Results B

Panel A：Japan						
		Basu	Accrual		T_SCORE	CONSKEW
$CLEVMV_{t-1}$	+	−	−*	$CLEVMV_{t-1}$		−**
$ABTM_{t-1}$	+	+*	+***	$ABTM_{t-1}$		
$D.STABLE_{t-1}$	−	−***	+***	$STABLE_{t-1}$		−***
$CLEVMV_{t-1} * D.STABLE_{t-1}$	−	−***	**−***	$CLEVMV_{t-1} * STABLE_{t-1}$	−***	
$ABTM_{t-1} * D.STABLE_{t-1}$	−	+***	+***	$ABTM_{t-1} * STABLE_{t-1}$	+***	+***
$D.JFOREIGN_{t-1}$	−	+	−	$J.FOREIGN_{t-1}$		
$CLEVMV_{t-1} * D.JFOREIGN_{t-1}$	−	+*	−***	$CLEVMV_{t-1} * J.FOREIGN_{t-1}$	+***	+**
$ABTM_{t-1} * D.JFOREIGN_{t-1}$	−	+*	+***	$ABTM_{t-1} * J.FOREIGN_{t-1}$	+***	

Notes:

$STABLE_{t-1}$: the percentage of shares owned by the largest to the tenth-largest shareholders and other persons or companies affiliated with the company as defined in Quants Research. $D.STABLE_{t-1}$: a dummy variable takes the value of one if the proportion of stable shareholders is above the mean and zero otherwise. $J.FOREIGN_{t-1}$: the percentage of shares owned by foreign individuals or institutions in Japan. $D.JFOREIGN_{t-1}$: a dummy variable takes the value of one if the proportion of foreign shareholders is above the mean and zero otherwise. $CLEVMV_{t-1}$: change in total liabilities deflated by beginning-of-period market capitalization. $ABTM_{t-1}$: total assets / market capitalization + total assets −common equity, both measured at the end of fiscal year t−1. ***, **, * indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively.

Table 9 Summary of Test Results B

Panel B：China						
		Basu	Accrual		T_SCORE	CONSKEW
$CLEVMV_{t-1}$	?	+	−***	$CLEVMV_{t-1}$	+***	
$ABTM_{t-1}$	+	−	−***	$ABTM_{t-1}$	+***	
$D.STATE_{t-1}$	−	−*	−**	$STATE_{t-1}$		
$CLEVMV_{t-1} * D.STATE_{t-1}$	−	+	−	$CLEVMV_{t-1} * STATE_{t-1}$	−***	−**
$ABTM_{t-1} * D.STATE_{t-1}$	−	−*	+	$ABTM_{t-1} * STATE_{t-1}$	−***	
$D.CFOREIGN_{t-1}$	−	−	−	$C.FOREIGN_{t-1}$		
$CLEVMV_{t-1} * D.CFOREIGN_{t-1}$	−	+	+*	$CLEVMV_{t-1} * C.FOREIGN_{t-1}$		
$ABTM_{t-1} * D.CFOREIGN_{t-1}$	−	+*	+	$ABTM_{t-1} * C.FOREIGN_{t-1}$		
$D.BHMARKET_{t-1}$	−	+***	+*	$BHMARKET_{t-1}$		
$CLEVMV_{t-1} * D.BHMARKET_{t-1}$	−	−	+***	$CLEVMV_{t-1} * BHMARKET_{t-1}$		
$ABTM_{t-1} * D.BHMARKET_{t-1}$	−	−	+*	$ABTM_{t-1} * BHMARKET_{t-1}$		+**

Notes:

$STATE_{t-1}$: the percentage of state-owned shares deflated by the total number of shares outstanding as of the fiscal year-end. $D.STATE_{t-1}$: a dummy variable takes the value of one if the proportion of state shareholders is above the mean and zero otherwise. $C.FOREIGN_{t-1}$: the number of shares issued to foreign investors at initial public offering. $D.CFOREIGN_{t-1}$: a dummy variable takes the value of one if the proportion of foreign ownership is above their means and zero otherwise. $HMARKET_{t-1}$: the percentage of H-shares and B-shares deflated by the total number of shares outstanding as of the fiscal year-end. $D.HMARKET_{t-1}$: a dummy variable takes the value of one if the firm is cross-listed on the B-share market and/or Hongkong stock exchange. $CLEVMV_{t-1}$: change in total liabilities deflated by beginning-of-period market capitalization. $ABTM_{t-1}$: total assets / market capitalization + total assets −common equity, both measured at the end of fiscal year t−1. ***, **, * indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively.

Appendix 1:

Table A:Variable Definition

Variable	Definition
$STABLE_{t-1}$	the percentage of shares owned by the largest to the tenth-largest shareholders and other persons or companies affiliated with the company as defined in Quants Research
$D.STABLE_{t-1}$	a dummy variable takes the value of one if the proportion of stable shareholders is above the mean and zero otherwise
$J.FOREIGN_{t-1}$	the percentage of shares owned by foreign individuals or institutions in Japan
$D.JFOREIGN_{t-1}$	a dummy variable takes the value of one if the proportion of foreign shareholders is above the mean and zero otherwise
$A.JFOREIGN_{t-1}$	the relative proportion of foreign investors in total shareholding $A.JFOREIGN_{t-1} = J.FOREIGN_{t-1}/(1 - STABLE_{t-1})$
$STATE_{t-1}$	the percentage of state-owned shares deflated by the total number of shares outstanding as of the fiscal year-end
$D.STATE_{t-1}$	a dummy variable takes the value of one if the proportion of state shareholders is above the mean and zero otherwise
$C.FOREIGN_{t-1}$	the number of shares issued to foreign investors at initial public offering
$D.CFOREIGN_{t-1}$	a dummy variable takes the value of one if the proportion of foreign ownership is above their means and zero otherwise
$HMARKET_{t-1}$	the percentage of H-shares and B-shares deflated by the total number of shares outstanding as of the fiscal year-end
$D.HMARKET_{t-1}$	a dummy variable takes the value of one if the firm is cross-listed on the B-share market and/or Hongkong stock exchange
E_t	net income in fiscal year t deflated by market capitalization measured at the end of fiscal year t－1.
R_t	the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t.
DR_t	a dummy variable, taking a value of 1 if R_t is negative, and 0 otherwise.
$CLEVMV_{t-1}$	change in total liabilities deflated by beginning-of-period market capitalization
$ABTM_{t-1}$	total assets deflated by the sum of market capitalization and total assets minus common equity
T_SCORE_t	a firm-year conservatism measure devised in Khan and Watts [2009]
$CONSKEW_t$	the difference between the skewness of cash flows from operating activities and the skewness of net income using a three-year rolling window
ACC_t	accruals deflated by average total assets

ΔCF_t	changes in cash flows from operations deflated by average total assets
$D\Delta CF_t$	a dummy variable, taking the value of 1 if ΔCF is negative and 0 otherwise
PPE_t	the proportion of property, plant and equipment assets to total assets
$SIZE_t$	natural logarithm of the company's market capitalization
$WEAK_t$	a dummy variable takes the value of 1 if $LROA_t$ or LR_t is below 5% and 0 otherwise. $LROA_t$ is a lag indicator for ROA, computed as the average value of ROA_{t-1} and ROA_{t-2}. LR_t is a lag indicator for ROA, computed as the average value of R_{t-1} and R_{t-2}. ROA_t is measured as income before extraordinary items deflated by book value of total assets, both measured at the end of fiscal year t. R_t is the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t
$DEBT_{t-1}$	proceeds from the issuance of bonds in year t−1 deflated by market capitalization of common equity at the end of year t−1
GW_{t-1}	book value of goodwill deflated by total assets, both measured at the end of fiscal year t−1
$INTA_{t-1}$	book value of intangible assets deflated by total assets, both measured at the end of fiscal year t−1
RD_{t-1}	expenditure on research and development deflated by total sales, both measured at the end of fiscal year t−1
$lnAGE_{t-1}$	the natural logarithm firm age

Appendix 2: Correlation matrix for the variables. Spearman correlations in the upper quadrant and Pearson correlations in the lower quadrant.

Table B Panel A: Japan Correlation matrix

	E_t	DR_t	R_{t-1}	ACC_t	ΔCF_t	$D\Delta CF_t$	$ABTM_{t-1}$	$SIZE_{t-1}$	$CLEVMV_{t-1}$	$STABLE_{t-1}$	$J.FOREIGN_{t-1}$
E_t	1.000	−0.1023*	0.134*	0.184*	0.081*	−0.073*	0.088*	−0.073*	0.067*	0.127*	−0.026*
DR_t	−0.052*	1.000	−0.861*	0.034*	−0.082*	0.072*	−0.102*	0.034*	0.061*	0.018*	0.017*
R_{t-1}	0.001	−0.108*	1.000	−0.038*	0.097*	−0.080*	0.135*	−0.033*	−0.073*	−0.039*	−0.019*
ACC_t	0.265*	0.0162*	0.014	1.000	−0.476*	0.365*	−0.050*	0.006	0.081*	−0.018*	0.010
ΔCF_t	0.024*	−0.032*	0.012	−0.290*	1.000	−0.865*	−0.016*	−0.002	0.044*	0.019*	0.009
$D\Delta CF_t$	−0.037*	0.074*	−0.014	0.275*	−0.348*	1.000	0.033*	−0.039*	−0.034*	0.000	−0.039*
$ABTM_{t-1}$	0.010	−0.099*	0.002	−0.057*	−0.002	0.032*	1.000	−0.450*	−0.091*	0.033*	−0.267*
$SIZE_{t-1}$	0.019*	0.048*	−0.015*	0.015	0.000	−0.034*	−0.393*	1.000	0.097*	−0.247*	0.737*
$CLEVMV_{t-1}$	0.014	0.011	−0.002	0.024*	0.053*	−0.012	−0.010	0.010	1.000	0.041*	0.087*
$STABLE_{t-1}$	0.042*	0.020*	−0.023*	−0.005	0.006	−0.005	0.004	−0.252*	0.015*	1.000	−0.219*
$J.FOREIGN_{t-1}$	−0.012	0.005	−0.012	0.010	0.002	−0.039*	−0.234*	0.669*	0.003	−0.188	1.000

Notes:

E_t denotes the net income in fiscal year t deflated by market capitalization measured at the end of fiscal year t−1. R_{t-1}: the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t−1. DR_t: dummy variable, taking a value of 1 if R_{t-1} is negative, and 0 otherwise. ACC_t: accruals in year t deflated by average total assets. ΔCF_t: changes in cash flows from operations deflated by average total assets. $D\Delta CF_t$: a dummy variable, taking the value of 1 if ΔCF_t is negative and 0 otherwise. $ABTM_{t-1}$: total assets / market capitalization + total assets −common equity, both measured at the end of fiscal year t−1. $ABTM_{t-1}$: total assets − market capitalization + total assets −common equity, both measured at the end of fiscal year t−1. $SIZE_{t-1}$: the natural logarithm of market capitalization at the end of fiscal year t−1. $SIZE_{t-1}$: the natural logarithm of market capitalization at the end of fiscal year t−1. $CLEVMV_{t-1}$ is measured as the change in total liabilities deflated by beginning-of-period market capitalization. $STABLE_{t-1}$: the percentage of shares owned by the largest to the tenth-largest shareholders and other persons or companies affiliated with the company as defined in Quants Research. $J.FOREIGN_{t-1}$: the percentage of shares owned by foreign individuals or institutions in Japan.

Table B Panel B: China Correlation matrix

	E_t	DR_t	R_{t-1}	ACC_t	ΔCF_t	$D\Delta CF_t$	$ABTM_{t-1}$	$SIZE_{t-1}$	$CLEVMV_{t-1}$	$STATE_{t-1}$	$C.FOREIGN_{t-1}$	$HMARKET_{t-1}$
E_t	1.000	−0.212*	0.263*	0.069*	0.098*	−0.095*	0.266*	0.228*	0.148*	0.105*	0.033*	0.109*
DR_t	−0.059*	1.000	−0.866*	−0.017*	−0.065*	0.060*	−0.054*	0.076*	0.001	0.004	−0.004	0.016*
R_{t-1}	0.233*	−0.593*	1.000	0.023*	0.080*	−0.070*	0.067*	−0.075*	0.003	−0.006	0.007	−0.013
ACC_t	−0.004	0.003	−0.003	1.000	0.062*	−0.053*	−0.054*	0.063*	0.016*	−0.060*	−0.005	−0.015
ΔCF_t	0.013*	−0.041*	0.056*	−0.568*	1.000	−0.862*	0.012	0.018*	0.020*	0.004	0.010	−0.009
$D\Delta CF_t$	−0.016*	0.058*	−0.058*	−0.001	−0.508*	1.000	−0.018*	−0.025*	−0.020*	−0.001	−0.013*	0.003
$ABTM_{t-1}$	0.176*	−0.157*	0.030*	0.007	−0.006	0.008	1.000	0.106*	0.231*	0.231*	0.024*	0.170*
$SIZE_{t-1}$	−0.099*	0.189*	−0.090*	0.005	0.015*	0.035*	−0.354*	1.000	0.082*	−0.061*	0.0323*	0.141*
$CLEVMV_{t-1}$	0.267*	−0.034*	−0.001	0.000	0.003	0.002	0.074*	−0.118*	1.000	0.0734*	−0.009	0.031*
$STATE_{t-1}$	−0.021*	0.050*	−0.010	0.000	0.004	0.059*	0.038*	0.093*	−0.010	1.000	0.019*	0.113*
$C.FOREIGN_{t-1}$	−0.008	−0.002	0.004	0.002	0.006	−0.027*	−0.036*	0.041*	−0.008	−0.030*	1.000	0.040*
$HMARKET_{t-1}$	−0.001	0.006	−0.013	−0.001	−0.006	0.020*	0.091*	0.137*	−0.003	0.139*	0.011	1.000

Notes:

E_t denotes the net income in fiscal year t deflated by market capitalization measured at the end of fiscal year t−1. R_{t-1}: the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t−1. DR_t: dummy variable, taking a value of 1 if R_{t-1} is negative, and 0 otherwise. ACC_t: accruals in year t deflated by average total assets. ΔCF_t: changes in cash flows from operations deflated by average total assets. $D\Delta CF_t$: a dummy variable, taking the value of 1 if ΔCF_t is negative and 0 otherwise. $ABTM_{t-1}$: total assets / market capitalization + total assets −common equity, both measured at the end of fiscal year t−1. $SIZE_{t-1}$: the natural logarithm of market capitalization at the end of fiscal year t−1. $CLEVMV_{t-1}$: change in total liabilities deflated by beginning-of-period market capitalization. $HMARKET_{t-1}$: the percentage of H-shares and B-shares deflated by the total number of shares outstanding as of the fiscal year-end. $D.HMARKET_{t-1}$: a dummy variable takes the value of one if the firm is cross-listed on the B-share market and/or Hongkong stock exchange.

Appendix 3: Regression Results for T_SCORE

Khan and Watts [2009] incorporated three firm-specific characteristics into the Basu model to estimate an annual across-sectional Basu coefficient. These are firm size ($SIZE$), marker-to-book ratio (MTB), and market value leverage ($LEVMV$). G_SCORE in Eq. 3 denotes the timeliness of good news being reflected on income statements, and C_SCORE in Eq. 4 denotes the incremental timeliness of bad news being reflected on income statements. However, Eq. 3 and Eq. 4 are not regression models. Instead, Khan and Watts [2009] substituted them into the Basu model to estimate parameters μ_i and γ_i (i=1~4). Then, μ_i and γ_i (i=1~4) were in turn substituted into Eq. 3 and Eq. 4 as empirical estimators to compute annual G_SCORE and C_SCORE for each firm/year sample. T_SCORE is thus the sum of G_SCORE and C_SCORE, which measures the degree of conditional conservatism.

The model applied in this study is outlined below, where $SIZE_t$ represents the natural log of market capitalization; MTB_t represents the ratio of market capitalization to the book value of common equity at the end of the year t. $LEVMV_t$ represents leverage which is calculated as book value of total liabilities deflated by the market capitalization. In this study, E_t, the dependent variable in Eq.5, denotes the net income in fiscal year t deflated by market capitalization measured at the end of fiscal year t−1. R_t is the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t. As with Basu [1997], DR_t is a dummy variable that equals 1 if R_t is negative and is 0 otherwise. Table 9 reports the regression results for Japan and China. T_SCORE used in this study is measured on the basis of Eq. 3 and 4.

$$G\_SCORE=\beta_3 = \widehat{\mu_1} + \widehat{\mu_2}SIZE_{i,t} + \widehat{\mu_3}MTB_{i,t} + \widehat{\mu_4}LEVMV_{i,t} \quad \text{Eq.3}$$

$$C\_SCORE = \beta_4 = \widehat{\gamma_1} + \widehat{\gamma_2}SIZE_{i,t} + \widehat{\gamma_3}MTB_{i,t} + \widehat{\gamma_4}LEVMV_{i,t} \quad \text{Eq.4}$$

$$E_t = \beta_1 + \beta_2 DR_{i,t} + R_{i,t}(\mu_1 + \mu_2 SIZE_{i,t} + \mu_3 MTB_{i,t} + \mu_4 LEVMV_{i,t}) + DR_{i,t}R_{i,t}(\gamma_1 + \gamma_2 SIZE_{i,t} + \gamma_3 MTB_{i,t} + \gamma_4 LEVMV_{i,t}) + (\delta_1 SIZE_{i,t} + \delta_2 MTB_{i,t} + \delta_3 LEVMV_{i,t} + \delta_4 DR_{i,t}SIZE_{i,t} + \delta_5 DR_{i,t}MTB_{i,t} + \delta_6 DR_{i,t}LEVMV_{i,t}) + \varepsilon_i \quad \text{Eq.5}$$

Table C：Regression Results for T_SCORE

	Japan	China
$\beta_2(DR)$	0.036	0.065***
	(0.075)	(0.001)
$\mu_1(R)$	0.028*	0.175***
	(0.039)	(0.000)
$\mu_2(R*SIZE)$	−0.003*	−0.011***
	(0.023)	(0.000)
$\mu_3(R*MTB)$	−0.0003	−0.0007***
	(0.546)	(0.000)
$\mu_4(R*LEVMV)$	−0.009***	0.042***
	(0.000)	(0.000)
$\gamma_1(DR*R)$	0.142*	0.205**
	(0.025)	−0.004
$\gamma_2(DR*R*SIZE)$	−0.006	−0.014**
	(0.286)	−0.004
$\gamma_3(DR*R*MTB)$	−0.0007	0.005
	(0.230)	−0.072
$\gamma_4(DR*R*LEVMV)$	0.005	0.066***
	(0.055)	(0.000)
$\delta_1(SIZE)$	0.003***	0.011***
	(0.000)	(0.000)
$\delta_2(MTB)$	0.0004	0.0005***
	(0.310)	(0.000)
$\delta_3(LEVMV)$	−0.006***	−0.004**
	(0.000)	−0.006
$\delta_4(DR*SIZE)$	−0.001	−0.005***
	(0.466)	(0.000)
$\delta_5(DR*MTB)$	−0.001	−0.0001
	(0.117)	(0.778)
$\delta_6\ (DR*LEVMV)$	−0.001	0.011***
	(0.322)	(0.000)
intercept	0.053***	−0.132***
	(0.000)	(0.000)
F	24.37	2998.98

N	18255	25414

Note:

N denotes the number of observations in each ASSET-BTM group. E_t denotes the net income in fiscal year t, deflated by market capitalization at the end of fiscal year t−1. R_t is the buy-and-hold return on common stock for the twelve months ending three months after the end of fiscal year t. DR_t is a dummy variable that equals one if R is negative and is zero otherwise. $SIZE_t$ represents the natural log of market capitalization. MTB_t represents market capitalization to book value of common equity at the end of fiscal year t. $LEVMV_{i,t}$ represents leverage, which is calculated as book value of total liabilities deflated by market capitalization at the end of fiscal year t. ***, **, * indicate significance at the two-tailed 1%, 5%, 10% confidence level, respectively.

Chapter 4
Conclusion and Future Research

Conservatism is among the most important characteristics guiding accounting practice. However, to the extent management's human capital and financial gains are tied with the firm, it is axiomatic for them to emphasize available good news and delay the disclosure of bad news. Extant literature is replete with empirical evidence for opportunistic use of managerial discretion owing to the subjectivity in accounting standards. In comparison, there is a relative paucity in the literature on the regulatory power of accounting standards. Lawrence et al. [2013] make an insightful contribution in this area wherein the authors provide initial evidence on a firmly restraining power of accounting standards in the U.S. through an empirical examination on the implementation of asset impairment. The findings in Lawrence et al. [2013] attest to the existence of a non-discretionary factor inherent in procedural accounting rules (i.e., non-discretionary conservatism) and therefore evidence the importance of accounting standards. It also calls for further attention on the recent initiatives to converge accounting standards which have received considerable attention from international investors, standards setters, and academics across the world. If changes in accounting standards (i.e., move closer to the U.S GAAP or the international accounting standards) could have similar impacts on financial reporting quality in different accounting realms, a unified set of accounting standards could lead to a fundamental improvement in information infrastructure.

The question addressed in the first study is whether application of asset impairment accounting standards effectively regulates the implementation of impairment losses and improves accounting conservatism in Japanese listed firms. Test results suggest that the recent change in accounting rules with respect to asset impairment is less likely to result in better accounting quality. As with prior research, I examine the relationship between asset write-downs and beginning-of-period ASSET-BTM, which is a metric represents the extent to which a company's book value is under/over evaluated against its market value. As the market value deviates from the book value, the principle of conservatism requires a timelier disclosure of a downward change in asset values than that of an upward change. Aside from conventional regression method, this study employs a model selection technique (LASSO: Least Absolute Shrinkage Selection Operator), through which determinants for asset impairment will be ranked in terms of relevance. On the other hand, a quantile regression assesses effects of the chosen predictors on the implementation of asset write-downs at a specific quantile, thereby providing a thorough

understanding of the underlying relationship between ASSET-BTM and the disclosure of asset impairment losses. Findings in the first essay show that, although the degree of accounting conservatism for sub partitions sharply intensifies as the indicator for loss recognition points to greater demands for timely disclosure of bad news, the growth in the level of accounting conservatism fluctuates and demonstrates a different pattern when compared with that identified in the U.S. Specifically, test results by the LASSO analysis and quantile regression implies that firms exhibiting greater needs for value correction do not execute asset write-downs in accordance with accounting standards. Moreover, an additional test using samples drawn from China and the U.S. verifies that the most important driver for asset impairment in Japan and China is debt contracting when that for the U.S is the regulatory power of accounting standards.

The second essay investigates impacts of ownership structure on accounting conservatism in Japanese and Chinese listed firms. It is motivated by the first essay, whose test results indicate that accounting conservatism in Japan and China is affected more by other institutional factors than requirements of accounting standards. I expect further analysis involving institutional difference in Japan and China could help to answer the question left in the first essay since it is unclear what hinders proper disclosure of loss information. In particular, I examine effects of stable (state) shareholdings, an underlying feature which greatly differentiate Japan (China) from the U.S. in institutional framework, on accounting conservatism. Furthermore, I incorporate debt contracting and the regulatory force of accounting standards in both settings so as to extend findings in the first essay. Consistent with the hypothesis, findings in this study proves that variations in market infrastructure lead to differences in conservative accounting policy in Japanese and Chinese listed firms. Test results document in the second study show that stable (state) shareholdings reduces bad news sensitivity and such effects are more profound in firms with higher proportion of stable (state) shareholders. More importantly, evidence in the second essay implies that institutional framework with distinct traits could generate similar economic consequences even though domestic accounting standards are different. For example, although accounting standards in China are more similar to the U.S., than to those adopt in Japan, a presumably increased demand for accounting conservatism from debtholders fail to evoke timelier loss recognition in China and Japan. This can be attributed to a close firm-bank relationship which is more common in Japan and China, but is less likely in the U.S. The second essay further extends the first essay by examining whether regulatory force could outweigh impacts of ownership structure in the two unique settings. The inclusion of the interaction with non-discretionary conservatism

demonstrates a significantly positive effect of accounting standards in Japanese listed firms, suggesting an overall better regulatory environment in Japan. On the other hand, the inclusion of interaction with debt contracting (non-discretionary conservatism) and foreign equity indicates that foreign investors tend to play a supportive role in enhancing conservative accounting in Japan and China. Nevertheless, evidence also suggests that a domestically listed Chinese firm will tend to release adverse accounting information in a timelier manner when it also lists in Hong Kong stock exchange or the B-share market.

In general, empirical evidence is consistent with the hypotheses in this study. However, this study still has several limitations stated as follows. First, I could not entirely rule out the possibilities that test results are biased due to model misspecification and measurement errors in proxies for accounting conservatism. For example, the measure of ASSET-BTM ratio, which stands for effects of accounting standards, is computed on an aggregate level and is therefore influenced by factors other than the intrinsic value of assets (e.g., macroeconomic influence on stock price, temporary downward bias at the beginning of an investment cycle). Test results of the accrual model in the second essay are also partly inconsistent with evidence produced by analyses in previous sections. Future research will focus on refinement of both the models (e.g., screen out time-series change in level of accounting conservatism) and metrics (e.g., proxy for firm-bank relationship and cross shareholdings) used in this study.

Second, this study fails to consider other institutional differences suggest in earlier research. For example, litigation concern is an alternative explanation for accounting conservatism (e.g., Watts [2003a], Qiang [2007]). However, this area is relatively underexplored in Japan and China. For example, prior studies employ a dummy variable to proxy for litigious industry such as biochemistry or retailing firms (e.g., Francis et al. [1994]). I incorporate a dummy variable in the U.S setting based on previous studies to test its effects on accounting conservatism, but the correlation between this variable and accounting conservatism is weak and insignificant (test results are unreported[42]). It is also unclear whether such classification based on industries could be readily applied to firms domiciled in other countries where shareholders are relatively reticent about their rights (i.e., lower possibilities of being sued by shareholders). On the other hand, prior research has also sought to address this issue by classifying different realms by their jurisdictional origins (i.e., code law versus. common law). Such research design helps to comprehensively understand the role of legal and political system on accounting conservatism. However, it is difficult to filter out the possible confounding effects

[42] The variable (LITIGATION) is set to one if a firm is in the following industries (SIC codes 2833–2836, 3570–3577, 3600–3674, 5200–5961, and 7370) and zero otherwise

existing across the borders. Future research could try to explore the impact of litigation on reporting quality and conservatism by incorporating a difference-in-difference research (e.g., the passage of an accounting rule or law code) wherein the country serves as its own control.

Finally, research design in this study fails to take the endogeneity concerns into consideration. Specially, although little evidence is found with regards to the influence of foreign equity on accounting conservatism in the second essay, it is still possible that foreign investors incline to choose firms with lower information asymmetric and such firms are thus expected to be more sensitive to bad news. To validate these arguments in prior studies, I investigate investment of foreign equity drawing on anecdotal evidence from two Japanese listed companies. Table 1 exhibits changes in the ten largest shareholders in TOSHIBA and Olympus in fiscal year 2012 and 2017, respectively. Both companies have been reported to engage in inappropriate accounting practices, which have raised concerns over the credibility of financial reporting in the public. In panel A, it is clear that foreign investment only accounts for 2.2% of the whole equity in fiscal year 2012 for TOSHIBA. However, the proportion of foreign equity rose to 19.6% (8.9% + 6.9% + 3.8%) after its accounting scandal came into light in fiscal year 2017. The case of Olympus is similar to that of TOSHIBA. In fiscal year 2012, foreign equity accounted for about 4.3% (2.5% + 1.8%) of the whole equity and has gradually risen to 10.8% (4.9% +4.1% +1.8%) through fiscal year 2017. The rise in proportion of foreign equity can be viewed as a signal to the market as well as to other stakeholders by showing its commitment to corporation governance reformation. Another possible explanation could be that foreign investors will opt for bargains due to lack of investment opportunity. In other words, there is a great likelihood that such incidents present an otherwise extremely rare chance for foreign investors to buy in stocks with great value at a much lower cost. Although such evidence hinges to a peculiar situation and is inadequate to fully disentangle the puzzles posed in prior research, it is possible that foreign equity does not necessarily a priori prone for more conservative firms. Moreover, test results in this study also show that higher foreign equity does not directly link with higher accounting quality, implying that foreign investors are not capable of influencing managerial decisions or reinforcing public information production. Future research could explore effects of foreign investment by tracing the change in equity holdings and variations in expected length of shareholdings (long-term, mid-term or short-term foreign investors).

As a final note in this section, this study is a preliminary attempt to explore effects of accounting standards as well as its association with other influential factors on

accounting conservatism. Although findings in this study provides some important implications for investors, accounting regulators and standards setters, great gaps remain between theoretical construction and the application of accounting standards on a practical level. Future work will seek to address this issue through model sophistication and data mining techniques. On the other hand, like most of the previous research on accounting conservatism, validity of the findings in this study relies on the reliability of measurement suggested in Basu [1997] and Ball and Shivakumar [2006b]. Future work will also put an importance on exploring a more reliable firm-specific indicator for accounting conservatism.

Table 1 Panel A : Antidotal Evidence in Case of TOSHIBA (The largest ten shareholders)

2012		2017	
The Master Trust Bank of Japan	5.8	GOLDMAN SACHS INTERNATIONAL	8.9
Japan Trustee Services Bank (JTSB)	5.5	JP MORGAN CHASE BANK 380055	6.9
The Dai-ichi Life Insurance Company, Ltd	2.7	CHASE MANHATTAN BANK GTS CLIENTS ACCOUNT ESCROW	3.8
Nippon Life Insurance Company	2.6	The Dai-ichi Life Insurance Company, Ltd	2.7
SSBT OD05 OMNIBUS ACCOUNT-TREATY CLIENTS	2.2	employee stock ownership committee	2.7
employee stock ownership committee	2.2	Nippon Life Insurance Company	2.6
Japan Trustee Services Bank (JTSB) Account 9	1.9	Japan Trustee Services Bank (JTSB)	2.2
Japan Trustee Services Bank (JTSB) Account 4	1.5	Japan Trustee Services Bank (JTSB) Account No.5	1.9
NIPPONKOA INSURANCE CO., LTD	1.2	The Master Trust Bank of Japan	1.6
Sumitomo Mitsui Banking Corporation (SMBC)	1.2	Japan Trustee Services Bank (JTSB) Account No 1	1.4

Table 1 Panel B : Antidotal Evidence in Case of Olympus (The largest ten shareholders)

2012		2017	
Nippon Life Insurance Company	4.8	The Master Trust Bank of Japan	8.0
The Bank of Tokyo-Mitsubishi UFJ, Ltd.	4.8	Sony, Ltd.	5.0
The Master Trust Bank of Japan	3.7	State Street Corporation 505001	4.9
Japan Trustee Sumitomo Mitsui Banking Account	3.3	Japan Trustee Services Bank	4.5
Japan Trustee Services Bank	3.1	State Street Corporation 505223	4.1
Sumitomo Mitsui Banking Corporation (SMBC)	3.0	Nippon Life Insurance Company	3.9
Morgan Stanley Capital International	2.5	The Bank of Tokyo-Mitsubishi UFJ, Ltd.	3.9
TERUMO CORPORATION	2.0	Japan Trustee Sumitomo Mitsui Banking Account	3.3
State Street Corporation[43]	1.8	Sumitomo Mitsui Banking Corporation (SMBC)	2.4
Treasure Stock	1.6	State Street Corporation	1.8

[43] Founded in 1792, State Street Corporation is the second oldest financial institution in the United States of America.

References

Ahmadjian, C. L., G. E. Robbins, 2005. A Clash of Capitalisms: Foreign Shareholders and Corporate Restructuring in 1990s Japan. *American Sociological Review* 70 (3), 451-471.

Ahmed, A. S., B. K. Billings, R. M. Morton, M. Stanford-Harris, 2002. The role of accounting conservatism in mitigating bondholder-shareholder conflicts over dividend policy and in reducing debt costs. *Accounting Review* 77 (4), 867-890.

Ahmed, A. S., S. Duellman, 2013. Managerial Overconfidence and Accounting Conservatism. *Journal of Accounting Research* 51 (1), 1-30.

Ahmed, A. S., M. Neel, D. Wang, 2013. Does Mandatory Adoption of IFRS Improve Accounting Quality? Preliminary Evidence. *Contemporary Accounting Research* 30 (4), 1344-1372.

Aier, J. K., L. Chen, M. Pevzner, 2014. Debtholders' Demand for Conservatism: Evidence from Changes in Directors' Fiduciary Duties. *Journal of Accounting Research* 52 (5), 993-1027.

Ali, A., W. Zhang, 2015. CEO tenure and earnings management. *Journal of Accounting and Economics* 59 (1), 60-79.

Aoki, M., 1990. Toward an Economic Model of the Japanese Firm. *Journal of Economic Literature* 28 (1), 1-27.

Attig, N., O. Guedhami, D. Mishra, 2008. Multiple large shareholders, control contests, and implied cost of equity. *Journal of Corporate Finance* 14 (5), 721-737.

Bai, C.-E., Q. Liu, J. Lu, F. M. Song, J. Zhang, 2004. Corporate governance and market valuation in China. *Journal of Comparative Economics* 32 (4), 599-616.

Ball, R., S. P. Kothari, V. V. Nikolaev, 2013a. Econometrics of the Basu Asymmetric Timeliness Coefficient and Accounting Conservatism. *Journal of Accounting Research* 51 (5), 1071-1097.

Ball, R., S. P. Kothari, V. V. Nikolaev, 2013b. On Estimating Conditional Conservatism. *The Accounting Review* 88 (3), 755-787.

Ball, R., S. P. Kothari, A. Robin, 2000a. The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics* 29 (1), 1-51.

Ball, R., A. Robin, G. Sadka, 2008. Is financial reporting shaped by equity markets or by debt markets? An international study of timeliness and conservatism. *Review of Accounting Studies* 13 (2-3), 168-205.

Ball, R., A. Robin, J. S. Wu, 2000b. Accounting standards, the institutional environment and issuer incentives: Effect on timely loss recognition in China. *Asia-Pacific Journal of Accounting & Economics* 7 (2), 71-96.

Ball, R., A. Robin, J. S. Wu, 2003. Incentives versus standards: properties of accounting income in four East Asian countries. *Journal of Accounting & Economics* 36 (1-3), 235-270.

Ball, R., L. Shivakumar, 2006a. The role of accruals in asymmetrically timely gain and loss recognition. *Journal of Accounting Research* 44 (2), 207-242.

Ball, R. A. Y., L. Shivakumar, 2006b. The Role of Accruals in Asymmetrically Timely Gain and Loss Recognition. *Journal of Accounting Research* 44 (2), 207-242.

Barth, M. E., W. R. Landsman, M. Lang, C. Williams, 2012. Are IFRS-based and US GAAP-based accounting amounts comparable? . *Journal of Accounting and Economics* 54 (1), 68-93

Barth, M. E., W. R. Landsman, M. H. Lang, 2008. International Accounting Standards and Accounting Quality. *Journal of Accounting Research* 46 (3), 467-498.

Bartov, E., F. W. Lindahl, W. E. Ricks, 1998. Stock Price Behavior Around Announcements of Write-Offs. *Review of Accounting Studies* 3 (4), 327-346.

Basu, N., I. Paeglis, M. Rahnamaei, 2016. Multiple blockholders, power, and firm value. *Journal of Banking & Finance* 66 (Supplement C), 66-78.

Basu, S., 1997. The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting & Economics* 24 (1), 3-37.

Beatty, A., J. Weber, J. J. Yu, 2008. Conservatism and debt. *Journal of Accounting & Economics* 45 (2-3), 154-174.

Beaver, W. H., S. G. Ryan, 2000. Biases and Lags in Book Value and Their Effects on the Ability of the Book-to-Market Ratio to Predict Book Return on Equity. *Journal of Accounting Research* 38 (1), 127-148.

Beaver, W. H., S. G. Ryan, 2005. Conditional and unconditional conservatism: Concepts and modeling. *Review of Accounting Studies* 10 (2-3), 269-309.

Belloni, A., V. Chernozhukov, 2011. L1-Penalized Quantile Regression in High-Dimensional Sparse Models. *Annals of Statistics* 39, 82–130.

Bhagat, S., B. Black, M. Blair, 2004. Relational Investing And Firm Performance. *Journal of Financial Research* 27 (1), 1-30.

Boubaker, S., F. Labégorre, 2008. Ownership structure, corporate governance and analyst following: A study of French listed firms. *Journal of Banking & Finance* 32 (6), 961-976.

Boubaker, S., H. Mansali, H. Rjiba, 2014. Large controlling shareholders and stock price synchronicity. *Journal of Banking & Finance* 40 (Supplement C), 80-96.

Brandt, L., H. Li, 2003. Bank discrimination in transition economies: ideology, information, or incentives? *Journal of Comparative Economics* 31 (3), 387-413.

Brockman, P., D. Y. Chung, 2003. The Inter-Temporal Behavior of Informed and Uninformed Traders. *Review of Quantitative Finance and Accounting* 21 (251).

Buckley, P. J., C. Wang, J. Clegg, 2007. The impact of foreign ownership, local ownership and industry characteristics on spillover benefits from foreign direct investment in China. *International Business Review* 16 (2), 142-158.

Bushman, R. M., J. D. Piotroski, 2006. Financial reporting incentives for conservative accounting: The influence of legal and political institutions. *Journal of Accounting and Economics* 42 (1), 107-148.

Bushman, R. M., J. D. Piotroski, A. J. Smith, 2004. What Determines Corporate Transparency? *Journal of Accounting Research* 42 (2), 207-252.

Cao, J. L., M. L. a. Pan, X. a. Qian, M. a. Tian, G. Gang, 2014. Political Promotion, CEO Incentives, and the Relationship between Pay and Performance. *https://ssrn.com/abstract=1914033*.

Chen, G., M. Firth, L. Xu, 2009. Does the type of ownership control matter? Evidence from China's listed companies. *Journal of Banking & Finance* 33 (1), 171-181.

Chen, H., J. Z. Chen, G. J. Lobo, Y. Wang, 2010. Association Between Borrower and Lender State Ownership and Accounting Conservatism. *Journal of Accounting Research* 48 (5), 973-1014.

Chen, R., S. El Ghoul, O. Guedhami, H. Wang, 2017. Do state and foreign ownership affect investment efficiency? Evidence from privatizations. *Journal of Corporate Finance* 42 (Supplement C), 408-421.

Chen, X., J. Harford, K. Li, 2007. Monitoring: Which institutions matter? *Journal of Financial Economics* 86 (2), 279-305.

Chen, Y., H. Li, L.-A. Zhou, 2005. Relative performance evaluation and the turnover of provincial leaders in China. *Economics Letters* 88 (3), 421-425.

Chen, Y., M. Liu, J. Su, 2013. Greasing the wheels of bank lending: Evidence from private firms in China. *Journal of Banking & Finance* 37 (7), 2533-2545.

Cheng, Q., T. D. Warfield, 2005. Equity Incentives and Earnings Management. *The Accounting Review* 80 (2), 441-476.

Cohen, D. A., A. Dey, T. Z. Lys, 2008. Real and Accrual - Based Earnings Management in the Pre - and Post - Sarbanes - Oxley Periods. *The Accounting Review* 83 (3), 757-787.

Cohen, D. A., P. Zarowin, 2010. Accrual-based and real earnings management activities around seasoned equity offerings. *Journal of Accounting and Economics* 50 (1), 2-19.

Cooke, T. E., 1992. The Impact of Size, Stock Market Listing and Industry Type on Disclosure in the Annual Reports of Japanese Listed Corporations. *Accounting and Business Research* 22 (87), 229-237.

Cullinan, C. P., F. Wang, P. Wang, J. Zhang, 2012. Ownership structure and accounting conservatism in China. *Journal of International Accounting, Auditing and Taxation* 21 (1), 1-16.

David, P., T. Yoshikawa, M. D. R. Chari, A. A. Rasheed, 2006. Strategic investments in Japanese corporations: do foreign portfolio owners foster underinvestment or appropriate investment? *Strategic Management Journal* 27 (6), 591-600.

Dechow, P. M., A. P. Hutton, R. G. Sloan, 1999. An empirical assessment of the residual income valuation model. *Journal of Accounting & Economics* 26 (1-3), 1-34.

Denis, D. K., J. J. McConnell, 2009. International Corporate Governance. *Journal of Financial and Quantitative Analysis* 38 (1), 1-36.

Desender, K. A., R. V. Aguilera, M. López-puertas-Lamy, R. Crespi, 2016. A clash of governance logics: Foreign ownership and board monitoring. *Strategic Management Journal* 37 (2), 349-369.

Dichev, I. D., J. R. Graham, C. R. Harvey, S. Rajgopal, 2013. Earnings quality: Evidence from the field. *Journal of Accounting and Economics* 56 (2), 1-33.

Dietrich, J. R., K. A. Muller, III, E. J. Riedl, 2007. Asymmetric timeliness tests of accounting conservatism. *Review of Accounting Studies* 12 (1), 95-124.

Elliott, J. A., J. D. Hanna, 1996. Repeated accounting write-offs and the information content of earnings. *Journal of Accounting Research* 34, 135-155.

Enomoto, M., 2006. Selection of the adoption year of accounting standards for impairment of fixed assets and accounting behavior. *The Japanese Association of Management Accounting* 15 (2), 41-56.

Erickson, M., M. Hanlon, E. L. Maydew, 2006. Is There a Link between Executive Equity Incentives and Accounting Fraud? *Journal of Accounting Research* 44 (1), 113-143.

Faccio, M., H. P. L. Larry, L. Young, 2001. Dividends and Expropriation. *The American Economic Review* 91 (1), 54-78.

Fama, E. F., K. R. French, 2001. Disappearing dividends: changing firm characteristics or lower propensity to pay? *Journal of Financial Economics* 60 (1), 3-43.

Fan, J., Y. Fan, E. Barut, 2014. Adaptive Robust Variable Selection. *The Annals of Statistics* 42 (1), 324–351.

Fan, J., R. Li, 2001. Variable Selection via Nonconcave Penalized Likelihood and its Oracle Properties *Journal of the American Statistical Association* 96 (456).

Fan, J. P. H., T. J. Wong, 2002. Corporate ownership structure and the informativeness of accounting earnings in East Asia. *Journal of Accounting and Economics* 33 (3), 401-425.

Feinerman, J. V., 2007. New Hope for Corporate Governance in China? *The China Quarterly*

191, 590-612.

Francis, J., J. D. Hanna, L. Vincent, 1996. Causes and Effects of Discretionary Asset Write-Offs. *Journal of Accounting Research* 34, 117-134.

Francis, J., D. Philbrick, K. Schipper, 1994. Shareholder Litigation and Corporate Disclosures. *Journal of Accounting Research* 32 (2), 137-164.

Gao, Y., 2011. Government Intervention, Perceived Benefit, and Bribery of Firms in Transitional China. *Journal of Business Ethics* 104 (2), 175-184.

García Lara, J. M., B. García Osma, F. Penalva, 2009. Accounting conservatism and corporate governance. *Review of Accounting Studies* 14 (1), 161-201.

García Lara, J. M., B. García Osma, F. Penalva, 2016. Accounting conservatism and firm investment efficiency. *Journal of Accounting and Economics* 61 (1), 221-238.

Garrod, N., U. Kosi, A. Valentincic, 2008. Asset write-offs in the absence of agency problems. *Journal of Business Finance & Accounting* 35 (3-4), 307-330.

Givoly, D., C. Hayn, 2000. The changing time-series properties of earnings, cash flows and accruals: Has financial reporting become more conservative? *Journal of Accounting & Economics* 29 (3), 287-320.

Greenaway, D., A. Guariglia, Z. Yu, 2014. The more the better? Foreign ownership and corporate performance in China. *The European Journal of Finance* 20 (7-9), 681-702.

Guay, W., 2006. Discussion of The Role of Accruals in Asymmetrically Timely Gain and Loss Recognition *Journal of Accounting Research* 44 (2), 243-255.

Guedhami, O., J. A. Pittman, W. Saffar, 2009. Auditor choice in privatized firms: Empirical evidence on the role of state and foreign owners. *Journal of Accounting and Economics* 48 (2), 151-171.

Guo, J., P. Huang, Y. Zhang, N. Zhou, 2015. Foreign Ownership and Real Earnings Management: Evidence from Japan. *Journal of International Accounting Research* 14 (2), 185-213.

Haw, I.-M., B. Hu, L.-S. Hwang, W. Wu, 2004. Ultimate Ownership, Income Management, and Legal and Extra-Legal Institutions. *Journal of Accounting Research* 42 (2), 423-462.

Haw, I.-M., J. J. Lee, W.-J. Lee, 2014. Debt Financing and Accounting Conservatism in Private Firms. *Contemporary Accounting Research* 31 (4), 1220-1259.

He, W., J. Shen, 2014. Do foreign investors improve informational efficiency of stock prices? Evidence from Japan. *Pacific-Basin Finance Journal* 27 (Supplement C), 32-48.

Healy, P. M., J. M. Wahlen, 1999. A Review of the Earnings Management Literature and Its Implications for Standard Setting. *Accounting Horizons* 13 (4), 365-383.

Herrmann, D., T. Kang, Y. K. Yoo, 2015. The impact of cross-listing in the United States on

the precision of public and private information. *Journal of International Business Studies* 46 (1), 87-103.

Huang, W., T. Zhu, 2015. Foreign institutional investors and corporate governance in emerging markets: Evidence of a split-share structure reform in China. *Journal of Corporate Finance* 32 (Supplement C), 312-326.

Huddart, S., 1993. The Effect of a Large Shareholder on Corporate Value. *Management Science* 39 (11), 1407-1421.

Iatridis, G. E., 2012. Audit quality in common-law and code-law emerging markets: Evidence on earnings conservatism, agency costs and cost of equity. *Emerging Markets Review* 13 (2), 101-117.

Ishida, S., 2016. 会計保守主義に関する実証研究 ： 負債契約からのアプローチ. Department of Accounting and Finance, Hitotsubashi University, Doctrate Degree Thesis.

Jensen, M. C., W. H. Meckling, 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3 (4), 305-360.

Jia, J., Q. Sun, W. H. S. Tong, 2005. Privatization Through an Overseas Listing: Evidence from China's H-Share Firms. *Financial Management* 34 (3), 5-30.

Jiang, B.-B., J. Laurenceson, K. K. Tang, 2008. Share reform and the performance of China's listed companies. *China Economic Review* 19 (3), 489-501.

Jiang, L., J.-B. Kim, 2000. Cross-Corporate ownership, information asymmetry and the usefulness of accounting performance measures in Japan. *The International Journal of Accounting* 35 (1), 85-98.

Jiang, L., J.-B. Kim, 2004. Foreign Equity Ownership and Information Asymmetry: Evidence from Japan. *Journal of International Financial Management & Accounting* 15 (3), 185-211.

Jung, K., Y. Kim, R. Stulz, 1996. Timing, investment opportunities, managerial discretion, and the security issue decision. *Journal of Financial Economics* 42, 159-185.

Kang, J.-K., W.-L. Liu, 2008. Bank incentives and suboptimal lending decisions: Evidence from the valuation effect of bank loan announcements in Japan. *Journal of Banking & Finance* 32 (6), 915-929.

Kang, J.-K., A. Shivdasani, 1995. Firm performance, corporate governance, and top executive turnover in Japan. *Journal of Financial Economics* 38 (1), 29-58.

Kang, J.-K., A. Shivdasani, 1996. Does the Japanese Governance System Enhance Shareholder Wealth? Evidence from the Stock-Price Effects of Top Management Turnover. *The Review of Financial Studies* 9 (4), 1061-1095.

Kang, J., M.-H. Liu, S. X. Ni, 2002. Contrarian and momentum strategies in the China stock market: 1993–2000. *Pacific-Basin Finance Journal* 10 (3), 243-265.

Kannan, Y. H., T. R. Skantz, J. L. Higgs, 2014. The Impact of CEO and CFO Equity Incentives on Audit Scope and Perceived Risks as Revealed Through Audit Fees. *AUDITING: A Journal of Practice & Theory* 33 (2), 111-139.

Kato, K., M. Li, D. J. Skinner, 2017. Is Japan Really a "Buy"? The Corporate Governance, Cash Holdings and Economic Performance of Japanese Companies. *Journal of Business Finance & Accounting* 44 (3-4), 480-523.

Khan, M., R. L. Watts, 2009. Estimation and empirical properties of a firm-year measure of accounting conservatism. *Journal of Accounting & Economics* 48 (2-3), 132-150.

Kim, E. H., Y. Lu, 2011. CEO ownership, external governance, and risk-taking. *Journal of Financial Economics* 102 (2), 272-292.

Kobayashi, M., H. Osano, 2011. The new main bank system. *Journal of the Japanese and International Economies* 25 (3), 336-354.

Koenker, R., G. Bassett, 1978. Regression Quantiles. *Econometrica* 46 (1), 33-50.

Kothari, S., A. Leone, C. E. Wasley, 2005. Performance Matched Discretionary Accrual Measures. *Journal of Accounting Economics* 39 (1), 163–197.

Kravet, T. D., 2014. Accounting conservatism and managerial risk-taking: Corporate acquisitions. *Journal of Accounting and Economics* 57 (2), 218-240.

La Porta, R., F. Lopez-De-Silanes, A. Shleifer, 1999. Corporate Ownership Around the World. *The Journal of Finance* 54 (2), 471-517.

Lafond, R., S. Roychowdhury, 2008. Managerial Ownership and Accounting Conservatism. *Journal of Accounting Research* 46 (1), 101-135.

LaFond, R., R. L. Watts, 2008. The information role of conservatism. *Accounting Review* 83 (2), 447-478.

Lang, M., J. Smith Raedy, W. Wilson, 2006. Earnings management and cross listing: Are reconciled earnings comparable to US earnings? *Journal of Accounting and Economics* 42 (1), 255-283.

Lang, M. H., K. V. Lins, D. P. Miller, 2004. Concentrated Control, Analyst Following, and Valuation: Do Analysts Matter Most When Investors Are Protected Least? *Journal of Accounting Research* 42 (3), 589-623.

Lawrence, A., R. Sloan, Y. Sun, 2013. Non-discretionary conservatism: Evidence and implications. *Journal of Accounting & Economics* 56 (2-3), 112-133.

Lee, J., K. H. Chung, 2017. Foreign Ownership and Stock Market Liquidity

Leuz, C., K. V. Lins, F. E. Warnock, 2009. Do Foreigners Invest Less in Poorly Governed Firms? *The Review of Financial Studies* 22 (8), 3245-3285.

Leuz, C., D. Nanda, P. D. Wysocki, 2003. Earnings management and investor protection: an international comparison. *Journal of Financial Economics* 69 (3), 505-527.

Li, H., L.-A. Zhou, 2005. Political turnover and economic performance: the incentive role of personnel control in China. *Journal of Public Economics* 89 (9), 1743-1762.

Li, Y., J. Zhu, 2008. L1-Norm Quantile Regression. *Journal of Computational and Graphical Statistics* 17 (1), 163-185

Liu, L. X., F. Jiang, M. Sathye, 2017. Does bonding really bond? Liability of foreignness and cross-listing of Chinese firms on international stock exchanges. *Research in International Business and Finance* 41 (Supplement C), 109-124.

Nagata, K., P. Nguyen, 2017. Ownership structure and disclosure quality: Evidence from management forecasts revisions in Japan. *Journal of Accounting and Public Policy*.

Nakamura, R., 2009. 保守主義に関する実証研究 ： 保守的な会計手続きがエージェンシーコストに与える影響. Department of Accounting and Finance, Hitotsubashi University, Doctrate Degree Thesis.

Nikolaev, V. V., 2010a. Debt Covenants and Accounting Conservatism. *Journal of Accounting Research* 48 (1), 137-175.

Nikolaev, V. V., 2010b. Debt Covenants and Accounting Conservatism Journal of Accounting Research Volume 48, Issue 1. *Journal of Accounting Research* 48 (1), 51-89.

Noda, T., 2013. Determinants of the Timing of Downsizing Among Large Japanese Firms: Long-Term Employment Practices and Corporate Governance. *Japanese Economic Review* 64 (3), 363-398.

Oler, M., 2014. Accounting standards effectiveness on equity overstatement – Conservatism when it matters. *Research in Accounting Regulation* 26.

Osborne, M. R., B. Presnell, B. A. Turlach, 2000. A new approach to variable selection in least squares problems. *IMA Journal of Numerical Analysis* 20 (3), 389-403.

Pae, J. H., D. B. Thornton, M. Welker, 2005. The link between earnings conservatism and the price-to-book ratio. *Contemporary Accounting Research* 22 (3), 693-717.

Patatoukas, P. N., J. K. Thomas, 2011. More Evidence of Bias in the Differential Timeliness Measure of Conditional Conservatism. *The Accounting Review* 86 (5), 1765-1793

Peng, S., R. H. Tondkar, J. van der Laan Smith, D. W. Harless, 2008. Does Convergence of Accounting Standards Lead to the Convergence of Accounting Practices?: A Study from China. *The International Journal of Accounting* 43 (4), 448-468.

Piotroski, J. D., T. J. Wong, T. Zhang, 2015. Political Incentives to Suppress Negative Information: Evidence from Chinese Listed Firms. *Journal of Accounting Research* 53 (2), 405-459.

Prowse, S. D., 1992. The Structure of Corporate Ownership in Japan. *The Journal of Finance* 47 (3), 1121-1140.

Qiang, X., 2007. The Effects of Contracting, Litigation, Regulation, and Tax Costs on

Conditional and Unconditional Conservatism: Cross - Sectional Evidence at the Firm Level. *The Accounting Review* 82 (3), 759-796.

Ramanna, K., R. L. Watts, 2012. Evidence on the use of unverifiable estimates in required goodwill impairment. *Review of Accounting Studies* 17 (4), 749-780.

Rees, L., S. Gill, R. Gore, 1996a. An Investigation of Asset Write-Downs and Concurrent Abnormal Accruals. *Journal of Accounting Research* 34 (3), 157-169.

Rees, L., S. Gill, R. Gore, 1996b. An Investigation of Asset Write-Downs and Concurrent Abnormal Accruals. *Journal of Accounting Research* 34, 157-169.

Riedl, E. J., 2004a. An Examination of Long-Lived Asset Impairments. *The Accounting Review* 79 (3), 823-852.

Riedl, E. J., 2004b. An examination of long-lived asset impairments. *Accounting Review* 79 (3), 823-852.

Roychowdhury, S., X. Martin, 2013. Understanding discretion in conservatism: An alternative viewpoint. *Journal of Accounting & Economics* 56 (2-3), 134-146.

Roychowdhury, S., R. L. Watts, 2007. Asymmetric timeliness of earnings, market-to-book and conservatism in financial reporting. *Journal of Accounting & Economics* 44 (1-2), 2-31.

Salter, S. B., T. Kang, G. Gotti, T. S. Doupnik, 2013. The Role of Social Values, Accounting Values and Institutions in Determining Accounting Conservatism. *Management International Review* 53 (4), 607-632.

Sheard, P., 1994. Reciprocal Delegated Monitoring in the Japanese Main Bank System. *Journal of the Japanese and International Economies* 8 (1), 1-21.

Shleifer, A., R. W. Vishny, 1986. Large Shareholders and Corporate Control. *Journal of Political Economy* 94 (3, Part 1), 461-488.

Shumway, T., 2001. Forecasting Bankruptcy More Accurately: A Simple Hazard Model. *The Journal of Business* 74 (1), 101-124.

Shuto, A., T. Iwasaki, 2014. Stable Shareholdings, the Decision Horizon Problem and Earnings Smoothing. *Journal of Business Finance & Accounting* 41 (9-10), 1212-1242.

Shuto, A., N. Kitagawa, 2011. The Effect of Managerial Ownership on the Cost of Debt:Evidence From Japan. *Journal of Accounting, Auditing & Finance* 26 (3), 590-620.

Shuto, A., T. Takada, 2010. Managerial Ownership and Accounting Conservatism in Japan: A Test of Management Entrenchment Effect. *Journal of Business Finance & Accounting* 37 (7-8), 815-840.

Skinner, D. J., 2008. The Rise of Deferred Tax Assets in Japan: The Role of Deferred Tax Accounting in the Japanese Banking Crisis. *Journal of Accounting and Economics* 46

(2-3), 218-239.

Skinner, D. J., S. Srinivasan, 2012. Audit Quality and Auditor Reputation: Evidence from Japan. *The Accounting Review* 87 (5), 1737-1765.

Smith, C. W., R. L. Watts, 1992. The investment opportunity set and corporate financing dividend and compensation policies. *Journal of Financial Economics* 29, 263-292.

Surroca, J., J. A. Tribó, S. A. Zahra, 2013. Stakeholder Pressure on MNEs and the Transfer of Socially Irresponsible Practices to Subsidiaries. *Academy of Management Journal* 56 (2), 549-572.

Szczesny, A., A. Valentincic, 2013. Asset Write-offs in Private Firms – The Case of German SMEs. *Journal of Business Finance & Accounting* 40 (3-4), 285-317.

Teshima, N., A. Shuto, 2008. Managerial Ownership and Earnings Management: Theory and Empirical Evidence from Japan. *Journal of International Financial Management & Accounting* 19 (2), 107-132.

Thomsen, S., T. Pedersen, H. K. Kvist, 2006. Blockholder ownership: Effects on firm value in market and control based governance systems. *Journal of Corporate Finance* 12 (2), 246-269.

Tibshirani, R., 1996a. Regression Shrinkage and Selection via the Lasso. *Journal of the Royal Statistical Society. Series B (Methodological)* 58 (1), 267-288.

Tibshirani, R., 1996b. Regression shrinkage and selection via the Lasso. *Journal of the Royal Statistical Society Series B-Methodological* 58 (1), 267-288.

Ullah, W., 2017. Evolving corporate governance and firms performance: evidence from Japanese firms. *Economics of Governance* 18 (1), 1-33.

Usui, A., 2015. Economic Analysis if Accounting Institutions. First Edition ed: Chuokeizai, 561-576.

Velury, U., D. S. Jenkins, 2006. Institutional ownership and the quality of earnings. *Journal of Business Research* 59 (9), 1043-1051.

Wang, J., X. Wang, 2015. Benefits of foreign ownership: Evidence from foreign direct investment in China. *Journal of International Economics* 97 (2), 325-338.

Wang, Q., T. J. Wong, L. Xia, 2008. State ownership, the institutional environment, and auditor choice: Evidence from China. *Journal of Accounting and Economics* 46 (1), 112-134.

Warfield, T. D., J. J. Wild, K. L. Wild, 1995. Managerial ownership, accounting choices, and informativeness of earnings. *Journal of Accounting and Economics* 20 (1), 61-91.

Watts, R. L., 2003a. Conservatism in Accounting Part I: Explanations and Implications. *Accounting Horizons* 17 (3), 207-221.

Watts, R. L., J. L. Zimmerman. 1986. Positive Accounting Theory: Prentice-Hall Inc.

Wu, Y., Y. Liu, 2009. Variable Selection in Quantile Regression. *Statistica Sinica* 19, 801-817.

Xu, X., Y. Wang, 1999. Ownership structure and corporate governance in Chinese stock companies. *China Economic Review* 10 (1), 75-98.

Yafeh, Y., 2000. Corporate governance in Japan: past performance and future prospects. *Oxford Review of Economic Policy* 16 (2), 74-84.

Yu, M., 2013. State ownership and firm performance: Empirical evidence from Chinese listed companies. *China Journal of Accounting Research* 6 (2), 75-87.

Zhang, J., 2008a. The contracting benefits of accounting conservatism to lenders and borrowers. *Journal of Accounting & Economics* 45 (1), 27-54.

Zhang, J., 2008b. The contracting benefits of accounting conservatism to lenders and borrowers. *Journal of Accounting and Economics* 45 (1), 27-54.

Zou, H., 2006. The Adaptive Lasso and Its Oracle Properties *Journal of the American Statistical Association* 101 (476), 1418-1429