Financial Reporting Quality and Corporate Bond Markets

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Abstract

Financial Reporting Quality and Corporate Bond Markets

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Recent research proposes that financial reporting is actually shaped by debt markets instead of by equity markets. As noted by Baker, Greenwood and Wurgler (2003), "Relative to the literature on equity financing patterns, and relative to the actual importance of debt finance in the U.S. economy, the literature on debt financing patterns is surprisingly underdeveloped". Hence, the interface between financial reporting and debt financing has recently emerged as a fruitful idea for research. In fact, because of their asymmetric payoff function and fixed claims on corporate assets, creditors have stronger incentives than equity investors to demand high quality financial reporting.

In this dissertation, I build up alternative arguments for conservatism that can be applied to the public bond market and cannot be generalized to the private debt market or the equity market. For instance, Merton's (1974) theoretical bond pricing model indicates that equity holders and bondholders value a firm's operating volatility in different ways. Thus, bond and equity investors could have different expectations and needs regarding what they consider to be useful financial reporting. In that regard, recent evidence on the interface between financial reporting quality and debt markets largely focuses on private bank loan contracting. However, in terms of providing capital to corporations, public debt markets are as large as private debt markets, with substantial differences in terms of monitoring efficiency, private information availability, seniority in liquidation, and re-

contracting flexibility. Hence, public bondholders can value financial reporting quality in a way that differs from private debt holders' perspective.

Using accounting conservatism and internal control effectiveness as proxies for financial reporting quality, I investigate two sets of research questions that relate to the effects of financial reporting quality on corporate bond financing. I consider both conditional and unconditional conservatism. Conditional conservatism depends upon future economic circumstances and reflects the writing down of book values under sufficiently adverse circumstances while not allowing their writing up under favorable circumstances (e.g., lower of cost or market for inventories). Unconditional conservatism reflects the consistent application of Generally Accepted Accounting Principles (GAAP) that reduces earnings independent of future economic events, resulting in the book value of net assets being understated due to predetermined aspects of the accounting process (e.g., immediate expensing of R&D expenditures according to U.S. GAAP). First, I investigate the main effect of accounting conservatism and the moderating effect of internal control effectiveness on the yield spread of new corporate bond issues. Second, I assess the main effect of accounting conservatism and internal control effectiveness on the underpricing of newly issued corporate bonds. Both yield spreads and underpricing reflect different market realities. While the yield spread of new corporate bond issues is determined through negotiations among bond issuers, investment bankers and large institutional investors the underpricing of newly issued corporate bonds reflects the responses of all bond investors based on their assessment of the available information.

My main empirical findings are: (1) conditional conservative reporting relates to higher yield spreads in new corporate bond issues; (2) unconditional conservative

reporting relates to lower yield spreads in new corporate bond issues; (3) ineffective internal controls enhance the effect of conditional conservative reporting to raise the yield spread; (4) both conditional and unconditional conservative reporting relate to the underpricing of newly issued corporate bonds. However, internal control effectiveness does not seem to matter in the underpricing.

This dissertation mainly contributes to the existing literature in two ways. First, this study extends the conservatism literature by linking conservative reporting to corporate bond financing patterns. With theoretical arguments and empirical evidence that are inconsistent with the debt contracting efficiency view of conservatism, my study casts some doubt as to how generalizable is the traditional debt contracting efficiency argument regarding the interface between conservatism and the cost of debt. Second, research on Sarbanes-Oxley Act's internal control provisions needs to go beyond the equity holders' and private debt holders' perspectives, and consider other financial stakeholders who contract on the basis of financial statements. This dissertation fills the void in the internal control literature by providing initial empirical evidence as to how internal control effectiveness affects corporate bond financing.

Key Words: Accounting Conservatism; Internal Control Effectiveness; Information Asymmetry; Yield Spread; Underpricing

Dedication

I am particularly indebted to my parents for their unconditional support and extraordinary sacrifices they have made for me. I dedicate this dissertation to my dearest father, Xiaohe Liu, and mother, Chenghua Zeng, who instilled in me the importance of education and encouraged me to chase my dreams.

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Chapter 1 Introduction

Most prior research assumes that the information needs of equity markets' participants determine corporate financial reporting. However, Lev (1989) challenges the usefulness of accounting earnings to equity markets. He argues that the biased accounting measurement principles result in low information content of reported earnings. This justifies the weak predictability of earnings to stock prices and returns. More recently, Ball and Shivakumar (2008), and Ball, Robin and Sadka (2008b) argue that debt markets rather than equity markets actually shape financial reporting. Debt contracts include accounting numbers that are used by creditors to predict future cash flows, assess the default risk of debt issuers, as well as monitor the behavior of managements. Debt financing represents the predominant source of external funding for U.S. corporations (Denis and Mihov 2003). In fact, the total value of U.S. corporate debt issuance (including private and public debt) between 1991 and 2009 amounts to about $22.9 trillion, while the total value of equity issuance (including common and preferred stock) for the same period represents only about $3.2 trillion.[1] Furthermore, as noted by Baker et al. (2003), "Relative to the literature on equity financing patterns, and relative to the actual importance of debt finance in the U.S. economy, the literature on debt financing patterns is surprisingly underdeveloped." Hence, the interface between financial reporting and debt financing has recently emerged as a fruitful focus for research. In fact, considering their asymmetric payoff function and fixed claims on corporate assets,

[1] Data source: Securities Industry and Financial Markets Association (http://www.sifma.org).

creditors have stronger incentives than equity investors to demand high-quality financial reporting (Ball, Bushman and Vasvari 2008a).[2]

According to statistics by the Securities Industry and Financial Markets Association, the total value of U.S. new corporate public debt issues during 1991-2009 is about $11.4 trillion, representing almost half of U.S. corporate debt financing during the same period. However, current research on debt markets focuses largely on the effect of financial reporting quality on private debt contracting (Ball et al. 2008a; Graham, Li and Qiu 2008; Wittenberg-Moerman 2008; Zhang 2008; Sunder, Sunder and Zhang 2009; Costello and Wittenberg-Moerman 2011; Kim, Song and Zhang 2011). Overall, these studies conclude that high financial reporting quality decreases the cost of private bank loan financing. By contrast, little is known about the effect of financial reporting quality on public bond financing (Mansi, Maxwell and Miller 2004, 2011; Nikolaev 2010).

As noted by Holthausen and Watts (2001), "It is not apparent that the relevance of a given number would be the same for equity investors and lenders, and what is relevant for one user or user group, may not be relevant for another". The relative scant evidence on the relationship between financial reporting and corporate debt financing, as well as the focus on private debt financing, raise several questions. For instance, Merton's (1974) theoretical bond pricing model indicates that equity holders and bondholders value a firm's operating volatility in different ways. More specifically, Bessembinder and Maxwell (2008) point out that bond is issued by a corporation at different point of time with distinct contracts that differ in terms of bond features and that are traded separately. From this perspective, corporate bonds differ substantially from common equities. Hence,

[2] Ball et al. (2008b) provide empirical evidence that accounting conservatism is actually shaped by debt markets but not by equity markets.

bond and equity investors could have different expectations and needs regarding what they consider to be useful financial reporting. In addition, the literature indicates that public and private debt financings differ substantially in terms of monitoring efficiency (Diamond 1984, 1991; Rajan 1992), private information availability (Fama 1985; Bhattacharya and Chiesa 1995), seniority in liquidation (Carey 1995; Welch 1997), and renegotiation flexibility (Bharath, Sunder and Sunder 2008). Therefore, conclusions drawn from research on private debt contracts can not be a reliable indication as to how public debt markets interact with financial reporting.

This dissertation uses conservative reporting and internal controls as proxies for financial reporting quality. Mueller (1964) indicates that the lower of cost or market method is the most widely used accounting practice. In addition, Sterling (1967) regards conservatism as the most influential and pervasive principle of valuation in traditional accounting. Basu (1997) overcomes the measurement problem of conservatism. Since then, researchers have introduced various measures of conservatism and empirically tested various conservatism-related research questions. Among the four widely recognized explanations for accounting conservatism (contracting, litigation, regulation, and taxation) (Watts 2003a, 2003b), contracting, especially debt contracting, is the most influential and intensively studied one. Accounting conservatism mitigates information asymmetries among contracting parties, and thus alleviates adverse selection and moral hazard problems as indicated by Jensen and Meckling (1976).

Recent corporate scandals such as Enron, WorldCom, Nortel, and Parmalat re-emphasize the importance of conservatism in alleviating the expropriation of corporate

resources.[3] These financial scandals also indicate the breakdown in corporate internal controls and the lack of adequate corporate governance mechanisms. Rational investors would require higher risk premiums on their investment to compensate the increased uncertainty in estimating corporate performance. The officially stated purpose of the Sarbanes-Oxley Act (SOX) in 2002 was to protect investors by improving the accuracy and reliability of corporate disclosures made pursuant to the securities laws. The Act comprises various provisions targeting corporate accounting oversight, auditor independence, corporate responsibility, and enhanced financial disclosures and so on. The endless debates on the cost and benefit of SOX internal control provisions (especially Section 404) make it the most controversial ones among SOX provisions. Policymakers advocate that internal control provisions can eventually generate high quality financial reporting, which will lower cost of capital (U.S. House of Representatives 2005).

In this dissertation, I develop alternative arguments for conservatism that can be applied to the public bond market and cannot be generalized to the private debt market or the equity market. More specifically, I investigate the effects of financial reporting quality, as proxied by accounting conservatism and internal control effectiveness, on the cost of publicly issued corporate bonds from two perspectives: the yield spread of new corporate bond issues and the underpricing of corporate bonds that start trading on the market. In the new corporate bond issue market, the negotiation among bond issuers, investment bankers, and large institutional investors determines the yield spread of new bond issues. While, in the seasoned bonds market, the underpricing of newly issued

[3] More specifically, Enron and Parmalat inflated their earnings by relying on large related party transactions, while WorldCom hid a deteriorating operating performance by capitalizing maintenance and repair expenses. Nortel booked several billion of assets which were quickly shown to be worthless and overstated its 2000 sales by 11%.

bonds reflects the responses of all bond investors based on their assessment of the available information.

For the purpose of the thesis, I consider both conditional and unconditional conservatism. Conditional conservatism depends upon future economic circumstances and reflects the writing down of book values under sufficiently adverse circumstances while not allowing their writing up under favorable circumstances (e.g., lower of cost or market for inventories). Unconditional conservatism reflects the consistent application of Generally Accepted Accounting Principles (GAAP) that reduces earnings independent of future economic events, resulting in the book value of net assets being understated due to predetermined aspects of the accounting process (e.g., immediate expensing of R&D Expenditures according to U.S. GAAP) (Beaver and Ryan, 2005).

First, in Chapter 3, I investigate the main effect of accounting conservatism on the yield spread of new corporate bond issues. In addition, I take into consideration the moderating effect of internal control effectiveness on the above main effect. Such analysis seeks to answer the following four research questions: (1) Whether and to what extent does conditional and unconditional conservative reporting influence the yield spread of new corporate bond issues? (2) Whether there exists an interaction effect between conservative reporting and internal control effectiveness on the yield spread of new corporate bond issues? The traditional debt contracting efficiency view of conservatism suggests that conditional conservatism lowers, and unconditional conservatism has no impact on the yield spread of new corporate bond issues. By contrast, I also provide alternative predictions that conditional (unconditional) conservative reporting relates to higher (lower) yield spreads in new corporate bond issues.

Inconsistent with the debt contracting efficiency view of conservatism, empirical evidence suggests that issuers with lower (higher) level of conditional (unconditional) conservative reporting can issue bonds at a lower yield spread. In addition, I find that ineffective internal controls enhance the effect of conditional conservatism to raise the yield spread.

Second, in Chapter 4, I investigate the effect of accounting conservatism and internal control effectiveness on the underpricing of newly issued corporate bonds. More specifically, I investigate the flowing research questions: (1) Whether and to what extent does conditional and unconditional conservative reporting affect the underpricing of newly issued corporate bonds? (2) Whether and to what extent does internal control effectiveness affect the underpricing of newly issued corporate bonds? Following signaling argument of underpricing and consistent with the hypotheses in Chapter 3 that both conditional and unconditional conservative reporting proxy for information asymmetry, I predict that issuers with more conditional and unconditional conservative reporting relate to more underpricing for newly issued bonds to distinguish them with issuers will less conservative reporting. Empirical results indicate that both conditional and unconditional conservative reporting increase the abnormal return of newly issued bonds. To the extent that internal control effectiveness proxies for information risk, the information argument of underpricing predicts that issuers with more internal control problems will experience more underpricing. However, I find that there is no significant difference in terms of the underpricing of newly issued corporate bonds between issuers with and without effective internal controls.

This dissertation contributes to the existing literature along the following dimensions. First, I rely on accounting conservatism to explain the financing patterns of corporate bond markets. This study provides theoretical argument and empirical evidence that is contrary to the traditional debt contracting efficiency view of conservatism (Ball and Shivakumar 2005). My results cast some doubt as to how generalizable the debt contracting efficiency argument is with regard to the interface between accounting conservatism and the cost of debt. On one hand, although recognized as "high" financial reporting quality by private debt holders from the debt contracting efficiency perspective, it is interesting to note that conditional conservatism can be valued negatively in corporate bond markets. On the other hand, viewed as "useless" financial reporting quality by private debt holders from a debt contracting efficiency standpoint (Ball and Shivakumar 2005; Beaver and Ryan 2005), unconditional conservatism can be valued positively in corporate bond markets.

Second, as noted by Holthausen and Watts (2001), the level of relevance for financial reporting numbers varies among users (e.g., shareholders, creditors). However, the existing literature largely focuses on equity markets and private debt markets, and provides limited empirical evidence with regard to the effect of financial reporting quality on public debt markets. Prior studies only use financial reporting quality proxies (audit quality, analyst forecast, and operating accruals) that do not directly relate to the debt contracting context to explain the price terms of public bond financing (Mansi et al. 2004; Bharath et al. 2008; Mansi et al. 2011). This study complements the bond financing

literature by using a financial reporting attribute (conservatism) that is closely related to debt financing context to explain the price terms of corporate bond financing patterns[4].

Third, integrating the theoretical arguments and empirical evidence from the accounting and finance literatures, my dissertation provides cross-disciplinary explanations for corporate bond financing patterns. Based on information related arguments for bond underpricing, I provide hypotheses for the effect of conservatism and internal control effectiveness on the underpricing of newly issued corporate bonds. My dissertation complements the related literature by using financial reporting quality as a proxy for information risk to explain the underpricing of newly issued corporate bonds (Cai, Helwege and Warga 2007).

Fourth, the SOX internal control literature focuses on the main effect of internal control effectiveness on accruals quality, analyst forecast behavior, cost of equity, private bank loan contracting, management forecast, and stock return (Doyle, Ge and McVay 2007a; Beneish, Billings and Hodder 2008; Ashbaugh-Skaife, Collins, Kinney and LaFond 2009; Costello and Witternberg-Moerman 2011; Feng, Li and McVay 2009; Kim, Song and Zhang 2009). However, little is known about the effect of internal control effectiveness on corporate bond markets.[5] Research of SOX internal control provisions needs to go beyond the equity holders' and private debt holders' perspective and consider other financial stakeholders who contract on the basis of financial statements. This dissertation fills the void in the internal control literature by providing empirical evidence

[4] Nikolaev (2010) documents the relation between conditional conservatism and non-price term of corporate bond financing. However, as suggested by Bharath et al. (2008) accounting quality only affect the price term of public debt financing.

[5] One possible explanation is that most of the U.S. corporate bond issuers are large companies with effective internal controls. The number of bond issuers that actually disclosed internal control weaknesses under SOX provisions is limited. Another possibility is that large proportion of U.S. corporate bond issuers are privately-held companies and these companies are not obliged to disclose their internal control problems under SOX provisions.

as to the moderating effect of internal control effectiveness on the yield spread of new corporate bond issues.

The remainder of this dissertation is organized as follows. Chapter 2 provides institutional background of accounting conservatism, internal controls, and corporate bond markets. Chapter 3 develops hypotheses, discusses the methodologies, and presents empirical results for the effect of financial reporting quality on the yield spread of new corporate bond issues. Chapter 4 develops hypotheses, discusses the methodologies, and summarizes empirical results for the effect of financial reporting quality on the underpricing of newly issued corporate bonds. Chapter 5 interprets the findings of this dissertation and draws the conclusion.

Chapter 2 Accounting Conservatism, Internal Controls and Bond Markets

2.1 Accounting Conservatism

2.1.1 History and Definition of Conservatism

Luca Pacioli's publication in 1494, introducing the structure of the double-entry bookkeeping system, is widely recognized as the milestone of modern accounting.[6] Since then, double-entry bookkeeping has evolved as the ultimate accounting tool to record transactions. However, its development and eventual dominance closely parallels the emergence of another influential accounting concept—conservatism. According to Littleton (1941), evidence on conservative accounting practices is found in the early fifteenth century, which is even before the introduction of double-entry bookkeeping system. May (1943) describes the lower of cost or market value as one of the oldest accounting practices. The earliest evidence of the adoption of the lower of cost or market method was documented in 1406 in an Italian merchant's, Francesco di Marco, account books recording inventory.[7] Since then, conservative accounting practices have expanded and survived for more than six hundred years. Mueller (1964) indicates that the lower of cost or market method is the most widely used accounting practice. In addition, Sterling (1967) regards conservatism as the most influential and pervasive principle of valuation in traditional accounting. Staubus (1985) suggests that conservatism provides the basis for 10 out of 32 accounting measurement methods. Recent empirical evidence shows that

[6] Pacioli, L. 1494. *Summa de Arithmetica, geometria, Proprotioni et Proportionalita: Distintio Nona-Tractatus XI. Particularis de computis et scripturis.* Paganino de Paganini, Venice.
[7] According to Vance (1943), Francesco di Marco was the head of extensive trading, banking and cloth-making enterprises at that time.

there is an increasing trend of conservatism over time. Basu (1997), Givoly and Hayn (2000), and Holthausen and Watts (2001) find that the coefficients on the bad news dummy (incremental timeliness of bad news over good news) have dramatically increased during their sample periods.[8] In addition, accounting conservatism is not limited to U.S. corporations. It is pervasive for corporations all over the world (Pope and Walker 1999; Ball, Kothari and Robin 2000; Ball, Robin and Wu 2003; Ball and Shivakumar 2005; Bushman and Piotroski 2006).

In an early accounting textbook (Bliss 1924) defines conservatism as "anticipate no profit, but anticipate all losses". Devine (1963, p.130) provides the first extensive review of the conservatism literature and describes conservatism as "… select a whole collection of actions from the possibilities and decide which ones would lead to less optimism on all kinds of goal-seeking fronts." Watts and Zimmerman (1986, p.205) offers a more detailed guidance of conservatism: "… report the lowest value among the possible alternative values for assets and the highest alternative value for liabilities. Revenues should be recognized later rather than sooner and expenses sooner than later." Basu (1997, p.7) interprets the practice of conservatism as "accountants' tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses." Building on arguments from prior studies, Givoly and Hayn (2000, p.292) regard conservatism as the choices among accounting methods that lead to the "minimization of cumulative reported earnings by slower revenue recognition, faster expense recognition, lower asset valuation, and higher liability valuation." Watts (2003a,

[8] The sample period for Basu (1997) is 1963-1990, for Givoly and Hayn (2000) is 1950-1998, and for Holthausen and Watts (2001) is 1927-1993.

p.207) briefly defines conservatism as the "differential verifiability required for recognition of profits versus losses."

Hence, there is no formal agreed-upon definition for conservatism even though it has existed for more than six hundred years. In practice, accountants interpret and apply the conservatism principle based on their own reasoning. Similarly, researchers define and measure conservatism based on their research questions. The practice of conservatism involves a large number of accounting methods and estimations. The lower of cost or market for inventories, LIFO inventory costing method (assuming increasing inventory costs), expensing R&D and advertising expenditures, and accelerated amortization are examples of conservative accounting methods. Underestimates of assets, revenue or gains, and overestimates of liabilities, expenses or losses are examples of conservative accounting estimations.

The Financial Accounting Standards Board (FASB) defines conservatism as "A prudent reaction to uncertainty to try to ensure that uncertainty and risks inherent in business situations are adequately considered." In addition, FASB comments that "conservatism tends to conflict with significant qualitative characteristics, such as representational faithfulness, neutrality, and comparability (including consistency)" (Statement of Financial Accounting Concepts No.2 1980, p.36). Former Securities and Exchange Commission (SEC) Chair Arthur Levitt (1998) implicitly criticizes the practice of conservatism by advocating "Good accounting standards produce financial statements that report events in the period in which they occur, not before and not after." The potential negative effect of conservatism on equity markets (Holthausen and Watts 2001)

and U.S. regulatory authorities' long standing "equity market orientation" justify their anti-conservatism position.

2.1.2 Contracting Demand for Conservatism

Watts (2003a) discusses four widely recognized demands for accounting conservatism: contracting, litigation, taxation, and regulation. For the purpose of this dissertation, contracting demand for conservatism is discussed in more details.

Using conservatism for contracting purpose is a very old practice that has existed for many centuries (Watts and Zimmerman 1983). Holthausen and Watts (2001) document that conservatism predates formal accounting standard setting in the first half of the twentieth century and before the increased popularity of litigation in the late 1960s. Contracting is widely accepted as the incipient demand for conservatism. Agency theory is a good starting point to understand the contracting demand for conservatism. Jensen and Meckling (1976, p.310) suggest that "Contractual relations are the essence of the firm." One can regard a firm as a group of people with contracts. Due to the information asymmetry between agents and principals, and the limited liability and tenure of agents, agents (e.g. managers of the firm) have strong incentives to engage in opportunistic behaviors to maximize their own benefits at the expense of other contracting parties (principals, e.g. shareholders and creditors). Rational principals would take actions to protect themselves from agents' potential opportunistic behaviors. Consequently, managers bear the agency costs arising from their potential opportunistic behaviors (Jensen and Meckling 1976). Thus, managers have incentives to reduce agency costs by allowing other contracting parties to monitor and restrict their opportunistic behaviors. In

practice, uninformed contracting parties use accounting numbers to monitor and restrict managers' opportunistic behaviors (Watts and Zimmerman 1986).[9] Thus, accounting conservatism serves as a platform for efficient contracting (Watts 2003a), especially when managers have strong incentives to overstate accounting numbers through their discretionary choices.

In a debt contracting context, managers have incentives to opportunistically transfer wealth from creditors to shareholders through risky payout policies and investment decisions (Watts and Zimmerman 1986). Accounting conservatism increases the probability of contractual violation, and prevents unintended wealth transfers through excessive dividends and risky investments (Myers 1977; Smith and Warner 1979). In addition, creditors' asymmetric payoff functions may justify debt contracting demand of conservatism. According to Watts (2003a), creditors have asymmetric payoff with respect to net assets of the firm: at the maturity of the debt, if the firm's net assets are above the face value of debt, creditors do not receive any additional payment. However, when managers of the firm cannot produce enough net assets to repay the promised amounts (interest and principal) to creditors at maturity, limited liability would cause creditors to receive less than the contracted sum. Accordingly, creditors require lower bound measure of verifiable net assets to guarantee that the verifiable net assets are at least greater than the present value of future repayment of interest and principal.

In addition, some studies provide empirical evidence to support the debt contracting demand for conservatism (Ahmed, Billings, Merton and Stanford-Harris 2002; Zhang 2008). Ahmed et al. (2002) investigate the role of accounting conservatism

[9] For example, in debt contracts, creditors require firms to maintain a minimum level of net assets to guarantee the future repayment of interest and principal. In compensation contracts, earnings-related figures are included in performance measurement index to calculate management's bonus.

in reducing the cost of debt and in mitigating bondholder-shareholder conflicts over dividend policy. They find that firms with more conservative reporting have lower cost of debt, and firms with more severe conflicts with regard to dividend policy report more conservatively. Zhang (2008) provides empirical evidence that accounting conservatism benefits both lenders and borrowers during the debt contracting processes. More specifically, lenders benefit ex post through the timely signaling of default risk and borrowers benefit ex ante through lower cost of debt.

In addition to debt contracting demand, the existing literature documents the following alternative explanations for accounting conservatism: compensation, litigation, taxation, and political cost. First, limited tenure and liability motivate managers to overstate accounting numbers in order to increase their compensation. However, conservative reporting restricts compensation overpayment to managers. Second, overstatement of net assets may increase managers' and auditors' litigation risk. Thus, conservative reporting helps them to reduce potential litigation costs. Third, conservative reporting reduces the present value of income taxes for profitable firms. Profitable firms defer income taxes to future period, which potentially increase the value of the firms. Fourth, regulators face asymmetric loss functions. They would be criticized more if the accounting standards they establish favor overstatement of net assets rather than understatement of net assets. Watts (2003a) provides more detailed review of these alternative explanations for conservatism.

2.1.3 Classification of Conservatism

While the existing literature recognizes two kinds of conservatism, it relies on different terminologies to characterize the dichotomy: conditional and unconditional conservatism (Ball and Shivakumar 2005; Beaver and Ryan 2005); or ex post and ex ante conservatism (Richardson and Tinaikar 2004); or accounting choice driven and accounting principal driven conservatism (Bagnoli and Watts 2005); or news dependent and news independent conservatism (Chandra, Wasley and Waymire 2004); or income statement and balance sheet conservatism (Pea, Thornton and Welker 2005). Consistent with Beaver and Ryan (2005), I use conditional and unconditional conservatism throughout this dissertation.

Conditional conservatism depends upon future economic circumstances. Beaver and Ryan (2005, p.269) define conditional conservatism as "book values are written down under sufficiently adverse circumstances but not written up under favorable circumstances." This definition is consistent with Basu's (1997) notion of conservatism—timely loss recognition. Examples of conditional conservatism are adoption of the lower of cost or market method for inventory and impairment write-down for long-term tangible and intangible assets (Beaver and Ryan 2005). Future economic events trigger the write-down of assets under conditional conservatism. Accordingly, some researchers call it "news dependent" or "ex post" conservatism.

Consistent application of Generally Accepted Accounting Principles (GAAP) that reduces earnings independent of future economic events results in unconditional conservatism. Beaver and Ryan (2005, p.269) define unconditional conservatism as "the book value of net assets is understated due to predetermined aspects of the accounting process." This definition is consistent with Beaver and Ryan (2000) notion of

conservatism—biased underestimation of book value. Beaver and Ryan (2005) suggest that immediate expensing of internally developed intangible assets, amortizing property, plant and equipment faster than economic depreciation, and recording positive net present value projects at historical cost are examples of unconditional conservatism. The writing down of assets under this type of conservatism is predetermined and independent of future economic events, thus some researchers name it "news independent" or "ex ante" conservatism.

Contracting theory predicts that conditional conservatism and unconditional conservatism play substantially different roles in enhancing contracting efficiency. According to Ball and Shivakumar (2005), only conditional conservatism signals new information to creditors and thus enhances contracting efficiency since timely loss recognition reflects contemporaneous economic shocks. In a private debt contracting context, conditional conservatism quickly triggers debt covenant violations and transfers decision rights from managers to creditors. Therefore, creditors can use these decision rights to restrict managers' opportunistic behaviors. In a public debt contracting context, conditional conservatism provides a timely signal to decrease bondholders' expectation about the firm's future cash flows. Hence, bondholders can quickly respond to timely loss recognition by marking down bond prices. Thus, managers have to restrict their opportunistic behaviors in order to prevent potential negative bond price reactions. In contrast, unconditional conservatism cannot increase contracting efficiency because it seems "inefficient or at best neutral in contracting" (Ball and Shivakumar 2005, p.91). More specifically, unconditional conservatism is only a downward accounting bias without adjusting the effect of contemporaneous economic events. Thus, contracting

parties can adjust for unconditional conservatism ex ante. Ball and Shivakumar (2005) suggest that contract terms can be written to reverse the effect of accounting methods that result in unconditional conservatism.[10] Basu (2005) provides an argument to corroborate Ball and Shivakumar's (2005) view. He uses historical evidence to suggest that unconditional conservatism is mainly used for regulatory or tax purposes, such as expensing of R&D expenditures as required by SFAS and accelerating amortization for tax incentives. Qiang (2007) investigates whether previously proposed four demands for accounting conservatism apply to conditional and unconditional conservatism respectively. Her findings indicate that contracting demand only induces conditional conservatism, while regulation and taxation demands induce unconditional conservatism only.

2.2 Internal Controls

2.2.1 Institutional Background of Internal Controls

The Foreign Corrupt Practices Act of 1977 (FCPA) is the first statutory regulation of internal controls in the pre-SOX period. The Act requires SEC registrants to develop and maintain cost effective internal control system. However, without detailed guidance and benchmark, the term "cost effective" is ambiguous, which results in weak implementation (Kinney, Maher and Wright 1990).[11] Later, the Committee of Sponsoring Organizations of the Treadway Commission 1992 (COSO) developed Internal Control – Integrated Framework, which provides detailed guidance for internal controls. It defines

[10] For example, if book values of assets are consistently understated by a known amount, then in debt covenants, agent can require an increase to the book values by this amount when determining the total amount the firm can borrow without affecting pricing and non-pricing terms (Ball and Shivakumar 2005).
[11] FCPA does not require management to evaluate or certify the effectiveness of internal control.

internal control as "a process, affected by an entity's board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in the effectiveness and efficiency of operations; reliability of financial reporting, and compliance with applicable laws and regulations". The Integrated Framework suggests five components of internal control: the control environment, risk assessments, control activities, information and communication, and monitoring.

Starting from Enron in 2001, a series of corporate financial scandals exposed serious deficiencies in corporate internal control systems and the lack of adequate corporate governance mechanisms. To restore the confidence of market participants and maintain the stability of U.S. capital markets, the U.S. Congress passed the Sarbanes-Oxley Act (SOX) in January 23, 2002. President Bush described the legislation as the "most far-reaching reforms of American business practices" since the Great Depression (Hitt 2002).[12] The SOX comprises various provisions targeting corporate accounting oversight, audit independence, corporate responsibility, and enhanced financial disclosures and so on. The SOX created a non-profit organization, the Public Company Accounting Oversight Board (PCAOB), to oversee the auditors of public companies. Later, the PCAOB issued Auditing Standard No. 2 (AS2) in 2004 as guidance for management and the external auditor evaluating corporation's internal control effectiveness.[13] To alleviate the financial burden on public firms, the PCAOB released a more principle-based Auditing Standard No. 5 (AS5) in 2007 to supersede AS2.

[12] At that time, Franklin D. Roosevelt presided over an expansion of regulation that included establishing the Securities and Exchange Commission.

[13] Auditing Standards No. 2 (PCAOB 2004) defines internal control over financial reporting as, "A process designed by, or under the supervision of, the company's principal executive and principal financial officers, or persons performing similar functions, and effected by the company's board of directors, management, and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the

The SOX internal control provisions (Section 302 and Section 404) integrate the terminologies and frameworks developed by FCPA, COSO, and PCAOB.[14] Specifically, SOX Section 302 requires chief executive and financial officers to certify, in each quarterly and annual report, that they are responsible for establishing and maintaining internal controls. In addition, they are required to certify that they have evaluated the internal controls and presented in reports their conclusion with regard to the effectiveness of the internal controls "as of a date within 90 days prior to the report". The SOX Section 302 requirements are effective after August 29, 2002 for all quarterly and annual filings.

Furthermore, SOX Section 404 not only requires chief executive and financial officers to evaluate and report internal controls, but also requires independent auditors to attest the accuracy of management's report and to provide their own evaluation on internal controls. Thus, external auditors must collect sufficient evidence to evaluate the effectiveness of internal controls. SOX Section 404 applies to all U.S. public companies except for registered investment companies and issuers of asset-backed securities. The requirements are effective for accelerated registrants with fiscal year ends after June 15, 2004 and for non-accelerated registrants with fiscal year ends after April 15, 2005 (SEC 2003).[15] Later, the compliance dates were extended to November 15, 2004 for accelerated registrants and July 15, 2005 for non-accelerated filers. Subsequently, the compliance dates for non-accelerated filers were extended to July 15, 2006.

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preparation of financial statements for external purposes in accordance with generally accepted accounting principles".

[14] In fact, before SOX internal control provisions, the SEC attempted to obtain approval to require mandatory internal control reports by all public firms but with little progress.

[15] Accelerated registrants must meet all the following criteria: (1) market value of voting and non-voting common equity held by non-affiliates exceeding $75 million; (2) trading on public exchange for at least 12 months; and (3) previously filed at least one annual report.

The policymakers advocate that effective internal controls are necessary to restore and reinforce investors' confidence in financial statements, which is essential to the vitality and stability of the capital markets (SEC 2002; SEC 2006). In addition they emphasize that internal control provisions can eventually generate high quality financial reporting, which will lower cost of capital (U.S. House of Representatives 2005). SEC Commissioner Cynthia A. Glassman points out that "If investors lose faith in the accuracy and completeness of companies' financial statements and other disclosures, they will be less willing to invest, and our financial markets will suffer" (SEC 2006). Consistent with the above arguments, the academic literature documents that effective internal controls positively affect accruals quality, analyst forecast behavior, management forecast, and stock return, and negatively affect cost of capital and cost of bank loan (Doyle et al. 2007a; Ogneva, Subramanyam and Raghunandan 2007; Ashbaugh-Skaife, Collins, Kinney and LaFond 2008; Beneish et al. 2008; Hammersley, Myers and Shakespeare 2008; Ashbaugh-Skaife et al. 2009; Feng et al. 2009; Costello and Witternberg-Moerman 2011; Kim et al. 2009, 2011).

Even with the previously discussed benefits, SOX internal control provisions, especially Section 404, are the most controversial ones among SOX provisions. The main controversy relates to the high compliance costs. Opponents of the provisions argue that its high costs are not commensurate with the corresponding benefits. A recent survey indicates that Fortune 1000 companies spent $5.9 million, on average, to comply with Section 404 (Charles River Associates 2005). This number is much greater than what the Securities and Exchange Commission (SEC) initially predicted--$91,000 (SEC 2003). In addition, a survey by the Financial Executives Institute shows that 94 percent of the

participants indicated that the compliance costs for SOX internal control provisions outweigh the benefits (Financial Executives Institute 2005). Some SEC registrants complained about the high compliance costs and called for the revision of the SOX internal control provisions (American Electronics Association 2005). This may explain the subsequent extension of the compliance dates of SOX Section 404. Also, policymakers held hearings on the high compliance costs with regard to the SOX internal control provisions (U.S. Senate 2004; U.S. House of Representatives 2005). Facing the demands for loosening the requirements of SOX internal control provisions, the SEC conducted a cost-benefit analysis of the audit of internal controls as mandated by SOX Section 404 (SEC 2008).

2.2.2 Empirical Evidence of SOX Internal Controls

The passage of SOX internal control provisions (Section 302 and Section 404) generates great research opportunities. There exist two research streams with regard to the SOX internal control provisions. One stream focuses on the economic factors that determine internal control weaknesses (Ge and McVay 2005; Ashbaugh-Skaife, Collins and Kinney 2007; Doyle, Ge and McVay 2007b; Hoitash, Hoitash and Bedard 2009). Another stream investigates the economic consequences of internal control weaknesses (Doyle et al. 2007a; Ogneva et al. 2007; Ashbaugh-Skaife et al. 2008; Beneish et al. 2008; Hammersley et al. 2008; Ashbaugh-Skaife et al. 2009; Feng et al. 2009; Costello and Witternberg-Moerman 2011; Kim et al. 2009, 2011).

The first research stream examines whether certain firm characteristics affect internal control weaknesses (Ge and McVay 2005; Ashbaugh-Skaife et al. 2007; Doyle

2007b; Hoitash et al. 2009). These researchers assume that certain characteristics relate to the internal control effectiveness. Ge and McVay (2005) focus on a sample of 261 firms that disclosed at lease one material weakness in internal controls in response to Section 302 during the period from August 2002 to November 2004. The authors find that weaknesses in internal controls are related to an insufficient commitment of resources for accounting controls, and that disclosing material weaknesses is positively associated with a firm's business complexity and is negatively associated with firm size and profitability. Ashbaugh-Skaife et al. (2007) find that firms disclosing internal control deficiencies after Section 302 and before Section 404 typically exhibit more complex operations, recent organizational changes, greater accounting risk, more auditor resignations, and fewer resources available for internal controls. By distinguishing the internal control problems between entity-wide and account-specific, Doyle et al. (2007b) document that smaller, younger, and financially weaker firms tend to have more entity-wide control problems, while complex, diversified, and rapidly changing operations firms have more account-specific problems. Hoitash et al. (2009) conclude that board and audit committee characteristics also determine internal control quality. More specifically, firms with more audit committee members having accounting and supervisory experience, as well as board strength are less likely to disclose internal control weaknesses under Section 404. In addition, firms whose financial experts have no accounting experience or that have multiple financial experts are more likely to disclose internal control problems.

A more important research stream investigates the economic consequences of internal control weaknesses. The existing empirical evidence supports the view that ineffective internal controls negatively affect accruals quality (Doyle et al. 2007a;

Ashbaugh-Skaife et al. 2008); analyst forecast behavior (Kim et al. 2009); cost of equity (Ogneva et al. 2007; Beneish et al. 2008; Ashbaugh-Skaife et al. 2009); cost of private debt (Costello and Witternberg-Moerman 2011; Kim et al. 2011), management forecast (Feng et al, 2009), and stock return (Beneish et al. 2008; Hammersley et al. 2008).

More specifically, Doyle et al. (2007a) examine the relation between accruals quality and internal control weakness disclosures using a sample of 705 firms that disclosed at least one material weakness during the period from August 2002 to November 2005. The authors find that firms with material weaknesses are generally associated with lower accruals quality as measured by the extent to which accruals are realized as cash flows. In addition, they decompose the weaknesses into firm-level and account-level, and find that the relation between accruals quality and internal control weakness disclosures is driven by firm-level control weaknesses only. The justification is that firm-level controls are difficult to "audit around". Ashbaugh-Skaife et al. (2008) investigate both the effect of internal control deficiencies and their remediation on accruals quality. The authors document that firms reporting internal control deficiencies have lower accruals quality as measured by accruals noise and absolute abnormal accruals. Also, they find that firms that report both internal control deficiencies as well as auditors' confirmation of the remediation of such deficiencies exhibit an increase in accruals quality relative to firms that do not remediate their internal control problems.

Using a sample of firms that disclosed auditor-attested evaluation of internal controls over financial reporting (under Section 404), Kim et al. (2009) examine the effect of internal control quality on analyst forecast behaviors. The authors argue that effective internal controls improve the quality of analysts' forecasting decisions and

analysts take into account the disclosed internal control information when making forecast. Following are their main empirical results: (1) weak internal controls discourage analysts' following; (2) internal control quality is negatively associated with analysts' forecast errors and dispersions; (3) analysts' forecast revisions and convergence of analysts' beliefs subsequent to the release of earnings reports are higher for firms with weak internal controls.

Ogneva et al. (2007) examine the association between cost of equity and internal control effectiveness for firms that file first-time Section 404 reports. The authors find that internal control weakness firms have higher cost of equity relative to firms that disclosed no internal control weaknesses. However, these differences disappear after controlling for fundamental firm characteristics and analyst forecast bias. Overall, the authors conclude that internal control weaknesses are not directly associated with high cost of equity. In contrast, Ashbaugh-Skaife et al. (2009) use unaudited pre-Section 404 disclosures and Section 404 audit opinions, to assess how changes in internal control quality affect cost of equity. The cross-sectional analysis indicates that firms with internal control problems have significantly higher idiosyncratic risk, systematic risk, and cost of equity. In addition, the inter-temporal change analysis suggests that auditor-confirmed changes in internal control effectiveness are followed by significant changes in the cost of equity, ranging from 50 to 150 basis points.

Using 788 firms that file internal control weakness disclosures under Section 302, Costello and Witternberg-Moerman (2011) examine how internal control weaknesses affect bank loan contracting terms. Basically, the authors argue that weakness in internal controls is an indicator of poor financial reporting quality. Thus lenders face more

information asymmetry because of the increased borrower uncertainty. Overall, they find that: (1) after internal control weakness disclosures, lenders decrease their reliance on financial covenants and financial-ratio-based performance pricing provisions; and lenders are more likely to require borrowers to provide additional collateral. (2) material internal control weaknesses lead to increase of interest rates.

Focusing on firms that filed Section 404 disclosures first-time, Kim et al. (2011) investigate whether various features of bank loan contracts differ between firms with internal control weakness problems and these without the problems. The authors argue that internal control problems increase pre-contract uncertainty about the credibility of the financial statements, which result in an increase of information asymmetries between borrowers and lenders. In addition, poor reporting quality increases post-contract costs associated with monitoring and negotiation. The empirical results are as follows: (1) loan spread is about 37 basis points higher for firms with internal control weakness problems; (2) firm-level internal control problems lead to higher loan rates relative to account-level problems; (3) firms with internal control problems have tighter non-pricing terms; (4) firms with internal control problems attract fewer lenders; and (5) lenders penalize firms that failed to remediate previously disclosed internal control problems through charging higher loan rates, requiring collaterals, and structuring loans with fewer participants in syndicate loan.

Feng et al. (2009) first investigate the effect of internal control quality on the accuracy of management guidance. With 2994 firm-year observations during 2004-2006 with internal control disclosures under Section 404, the authors find that management guidance is less accurate among firms with ineffective internal controls over financial

reporting. In addition, this effect is larger when the ineffectiveness relates to revenues or cost of goods sold. These findings are consistent with Feng et al. (2009) argument that ineffective internal controls result in inaccurate internal management report, and thus generating biased management forecast.

Beneish et al. (2008) examine whether equity markets would respond to SOX internal control weakness disclosures. Using a sample of 330 firms making disclosures under the requirement of Section 302, and 383 firms making auditor-attested disclosures as required by Section 404, the authors find that Section 302 disclosures lead to negative announcement abnormal returns. However, stock market's responses to Section 404 disclosures are not significant. In addition, they document that auditor quality dampens the negative effect of Section 302 disclosures on market reactions. Focusing only on the disclosures under Section 302, Hammersley et al. (2008) investigate whether the equity market reacts to Section 302 disclosures and whether the market reacts differently to the various characteristics of the disclosures. The authors document following empirical results: (1) firm values are revised downward in the 3-day window around the Section 302 disclosures; (2) market returns are more negative for material weakness disclosures; and (3) market returns are more negative for internal control weaknesses that are less auditable.

2.3 Corporate Bonds

2.3.1 Institutional Background of Corporate Bond Markets

In the past two decades, debt financing has represented the predominant source of external funds for U.S. corporations (Denis and Mihov 2003). Statistical evidence

indicates that the total value of U.S. corporate debt issuance during 1985-2008 amounts to about $23 trillion, while the total value of equity issuance for the same period represents only about $3 trillion.[16] In corporate debt markets, bonds represent the major source of external financing for U.S. corporations. According to the statistics provided by Securities Industry and Financial Markets Association, the total value of U.S. corporate bond issuance during 1985-2008 amounts to $11 trillion. It accounts for 48.6 percent of U.S. corporate debt issuance during the same period.

Corporate bond is a debt security issued by a corporation. The face value of a typical corporate bond is $1000. Normally, the bond issuer owes bondholders a debt and the bondholders receive principal and interest at predetermined dates in the future. When a corporation decides to issue bond, it prepares a bond indenture (contract) that specifies the maturity date, interest rate, payment date, and covenants.[17] In addition, corporations can offer different features with respect to early bond retirement. Redeemable (callable) bond can be called for early retirement at the option of the issuer. Putable bond can be required for early retirement at the option of bondholder. In addition, convertible bond can be converted to other securities of the issuer at the option of the bondholder.

The finance literature identifies various risks associated with investing in corporate bonds. The most widely discussed include: credit risk, liquidity risk, interest rate risk, call and prepayment risk, yield curve risk, reinvestment risk, volatility risk, exchange-rate risk, and inflation risk. For the purpose of this dissertation, credit risk is briefly discussed. Credit risk is the risk of potential losses due to an unexpected change in the issuer's credit quality. Basically, there are two types of credit risk: default risk and

[16] Date source: Securities Industry and Financial Markets Association (http://www.sifma.org).
[17] Covenant is designed to protect bondholders. For example, limit dividend payment, new debt issuance, and risky investment.

downgrade risk. Default risk is the risk that the issuer fails to fulfill its promised obligations with regard to the timely payment of interest and principal. Downgrade risk is the risk that the bond price will decrease due to a negative change in a bond's credit rating. Bonds of corporations with low credit risk carry an investment grade rating. In contrast, bonds of corporations with high credit risk receive a speculative grade rating.[18]

In the U.S., there exist an exchange and an over-the-counter dealer market for corporate bond transactions.[19] According to Hong and Warga (2000), less than 10 percent of corporate bond trading occurs on the exchange market and the majority of trading is carried out in the over-the-counter dealer market. The exchange and dealer markets offer substantially different trading environments to bondholders. The exchange market is a transparent electronic market with order limitation, while the over-the-counter dealer market lacks transparency (Hong and Warga 2000).

2.3.2 Corporate Bond versus Bank Loan Financing

This dissertation investigates the effect of financial reporting quality on corporate bond financing patterns. The existing literature largely focuses on the effect of financial reporting quality on private bank loan contracting (Ball et al. 2008a; Graham et al. 2008; Wittenberg-Moerman 2008; Zhang 2008; Sunder et al. 2009; Costello and Wittenberg-Moerman 2011; Kim et al. 2011). Ball et al. (2008a) document that the debt-contracting value of accounting information affects the structure of loan syndicates. Graham et al. (2008) examine the negative effect of financial restatements on bank loan contracting.

[18] Bonds with the ratings of BBB and above are called investment grade bonds, and with the ratings below BBB are called speculative grade bonds.
[19] According to Hong and Warga (2000), most of the exchange trading occurs on the NYSE's Automated Bond System (ABS).

Wittenberg-Moerman (2008) finds that timely loss recognition reduces the bid-ask spread in private debt secondary trading. Zhang (2008) find that more conservative borrowers can issue loans at lower interest rates and are more likely to violate debt covenants. Sunder et al. (2009) document that higher level of realized conservatism results in lower interest spread, lower reliance on covenants, and higher slack for the net worth covenant. This impact is only significant when current realized conservatism is not a constraint for future conservatism. Costello and Wittenberg-Moerman (2011) and Kim et al. (2011) provide empirical evidence that internal control weaknesses negatively affect bank loan contracting. Overall, these studies conclude that financial reporting quality explains the variation of the cost of private bank loan financing.

What is the new insight this dissertation will offer by focusing on public bond financing? Public and private debt financings differ substantially in terms of monitoring efficiency (Diamond 1984, 1991; Rajan 1992), private information availability (Fama 1985; Bhattacharya and Chiesa 1995), seniority in liquidation (Carey 1995; Welch 1997), and renegotiation flexibility (Bharath et al. 2008). Diamond (1984) indicates that a bank, as a financial intermediary, would solve the information duplication and free-rider problems when monitoring a borrower. Diamond (1991) predicts that direct public borrowing implies a less efficient monitoring of a borrower's behavior than private borrowing. Private lenders devote more effort in direct monitoring, thus alleviating the moral hazard problem in a more efficient way. In addition, Rajan (1992) argue that concentrated bank debt lenders have more incentives to monitor the borrowers compared to the dispersed "arm's length" debt holders. Fama (1985) argues that private debt lenders are more efficient and effective in obtaining private information about borrowers than are

public bondholders. Thus private debt financing mitigates the information asymmetry between borrowers and lenders. Similarly, Bhattacharya and Chiesa (1995) introduce an analytical model to support the view that borrowers would share proprietary information with a concentrated group of private lenders but not with diffused public lenders. Welch (1997) argues that private bank lenders are better negotiators, lobbyists, and litigants than public bondholders are. Borrowers have incentives to give the private lenders senior creditor status in order to avoid confrontations with them in times of financial distress. In that regard, Carey (1995) points out that 99% of bank loan contracts recorded in the Loan Pricing Corporation Dealscan database contain senior priority clauses. I argue that, due to these monitoring, information, and liquidation disadvantages, public bondholders would require higher financial reporting quality than private lenders to protect their investments. Bharath et al. (2008) find that accounting quality affects both the price and non-price terms of the private bank loan issues. However, due to re-contracting inflexibility for public debt, accounting quality only affects the price terms of the dispersed public bond issues. Accounting conservatism and internal controls play very important roles to mitigate the previously discussed disadvantages facing by public bondholders.

However, the existing literature provides limited empirical evidence with regard to the effect of financial reporting quality on public bond financing. Some studies use inferred or indirect measure of financial reporting quality (audit quality and analyst forecast) to explain the cost of public bond financing (Mansi et al. 2004, 2011). Mansi et al. (2004) examine the relationship between analyst forecast characteristics and the yield spread of new corporate bond issues. The authors find that issuers with informative analyst activity can issue bonds at lower yield spreads, and this impact of analyst activity

is increased with the uncertainty about issuer value. Mansi et al. (2011) investigate whether auditor characteristics influence the yield spread of new corporate bond issues. They document that issuers with a higher quality auditor and with a longer relationship with their auditor can issue bonds at lower yield spread. In addition, this impact is more pronounced if a bond is categorized as non-investment grade. Overall, these studies indicate that auditor characteristics and analyst activity are valued in corporate bond markets. Some studies use accrual quality as proxy for financial reporting quality to explain the cost of public bond financing (Bharath 2008). But accrual quality do not directly relate to the debt contracting context. This study uses a financial reporting attribute (conservatism) that is closely related to debt financing context to explain the cost of public bond financing. Nikolaev (2010) documents the relation between conditional conservatism and non-price terms of corporate bond financing. However, as suggested by Bharath et al. (2008) accounting quality only affect the price terms of public debt financing. So, it is interesting to investigate the relation between conservatism and price terms of public debt financing.

Compared to the literature on private debt financing, and considering the economic significance of public debt financing for U.S. corporations, the literature on public debt markets is relatively underdeveloped. One possible explanation is that private bank loan contracts include various pricing and non-pricing terms, and offer bank loan lenders various monitoring and negotiation channels, which involve more theoretical arguments and research potentials. Thus relatively more studies related to the debt financing focus on private bank loan markets. Another reason is that the over-the-counter dealer market carries out the majority of bond trading and there is limited publicly

available trading information (Hong and Warga 2000). In January 2001, the SEC approved rules that require the National Association of Securities Dealers (NASD) members to report all secondary market transactions in corporate bonds. NASD implemented the Trade Reporting and Compliance Engine (TRACE) in July 2002.[20] TRACE alleviates the corporate bond trading data limitation problem faced by prior studies. Thus, it enlarges research avenues by providing researchers with opportunities to conduct event studies relate to corporate bond markets. This dissertation complements the public bond financing literature by using financial reporting quality to explain the yield spread of new corporate bond issues and the underpricing of newly issued corporate bonds.

2.4 Synthesis

There is no formal agreed-upon definition for accounting conservatism even though it has existed for more than six hundred years. Among the four basic demands for conservatism (contracting, litigation, taxation and regulation), contracting demand is widely recognized as the incipient and dominant demand. Contracting demand stems from agency theory that principals can use accounting conservatism to offset the potential opportunistic behaviors of agents. The literature mainly documents two types of conservatism: conditional and unconditional conservatism. According to traditional debt contracting efficiency view, only conditional conservatism signals new information to creditors and thus enhances contracting efficiency, since timely loss recognition reflects the shocks of contemporaneous economic events. In contrast, unconditional conservatism

[20] At that time, only investment grade bonds with initial issuance amount over $1 billion are required to disseminate. Start from October 1, 2004, TRACE requires the dissemination of the transaction for all bonds.

cannot increase contracting efficiency because it is only a downward accounting bias without adjusting the effect of contemporaneous economic events.

Internal control over financial reporting has been a concern for policymakers far before SOX. Prior attempts to internal control disclosure provide a framework for SOX internal control provisions. Even with the advocated benefits of lowering the cost of capital and restoring investors' confidence, internal control provisions are regarded as the most controversial SOX provisions. The main controversy is the high compliance cost. Academics argue that internal control weaknesses increase the uncertainty about the credibility and reliability of financial statements, which further increase the information asymmetries between management and other outside parties (investors, analysts, and lenders). Thus, SOX internal control disclosures are deemed to be informative and beneficial. In addition, empirical evidence indicates that outside parties would negatively react to ineffective internal controls and require higher risk premiums as compensations.

Public and private debt financings differ substantially in terms of monitoring efficiency, private information availability, seniority in liquidation, and renegotiation flexibility. With these disadvantages, public bondholders may require conservative reporting and effective internal controls to protect their investments. In addition, comparing to the literature on private debt financing and considering the economic significance of public debt financing for U.S. corporations, the literature on public debt markets is relatively underdeveloped. This dissertation complements the bond financing literature by using financial reporting quality to explain the yield spread of new corporate bond issues and the underpricing of newly issued corporate bonds.

Chapter 3 The Effect of Accounting Conservatism and Internal Control Effectiveness on the yield spread of New Corporate Bond Issues

3.1 Hypothesis Development

3.1.1 Conditional Conservatism and Yield Spread

Among the four widely recognized explanations for accounting conservatism (contracting, litigation, regulation, and taxation, as per Watts 2003a, 2003b), contracting, especially debt contracting, is the most influential and intensively studied one. Conditional conservatism depends on future economic circumstances. Beaver and Ryan (2005, p.269) define conditional conservatism as "book values are written down under sufficiently adverse circumstances but not written up under favorable circumstances." This definition is consistent with Basu's (1997) notion of conservatism—timely loss recognition. Agency cost and debt contracting efficiency arguments are the two major explanations for conditional conservatism in the debt context. Due to information asymmetry between agents and principals, and the limited liability and tenure of agents, agents (e.g. managers of the firm) have strong incentives to engage in opportunistic behaviors to maximize their own benefits at the expense of other contracting parties (e.g., creditors). Conditional conservatism mitigates information asymmetries among contracting parties, and thus alleviates adverse selection and moral hazard problems, as indicated by Jensen and Meckling (1976). Contracting theory predicts that conditional conservatism and unconditional conservatism play substantially different roles in enhancing contracting efficiency. According to Ball and Shivakumar (2005), only conditional conservatism signals new information to creditors and thus enhances

contracting efficiency. Timely loss recognition improves ex post monitoring and increases the likelihood of a debt covenant violation. In the case of a covenant violation, the decision rights will transfer from equity holders to debt holders. Thus, conditional conservative reporting serves as a platform for efficient contracting (Watts 2003a), especially when managers have strong incentives to overstate accounting numbers through their discretionary choices.

Existing studies largely focus on private bank loan markets when testing these agency cost and debt contracting efficiency arguments (Wittenberg-Moerman 2008; Zhang 2008). Wittenbery-Moerman (2008) documents that conditional conservative reporting reduces the bid-ask spread in the secondary loan trade. Using four conditional conservatism measures, Zhang (2008) finds that the spread of the initial loan interest rate over the London Interbank Offered Rate (LIBOR) is negatively related to borrowers' conservatism. Focusing on non-price terms of public debt contracts, Nikolaev (2010) documents that reliance on covenants promotes conditional conservative reporting. Different from Nikolaev (2010), my study focuses on price terms of public debt contracts, because Bharath et al. (2008) find that accounting quality affects both the price and non-price terms of private bank loan issues. However, they also document that, due to re-contracting inflexibility for public debt, accounting quality only affects the price terms of the dispersed public bond issues. Consistent with agency theory and debt contracting efficiency view of conditional conservatism, and with prior empirical evidence in private bank loan context, I make the following prediction:

Hypothesis 1: *Ceteris paribus, a firm's conditional conservative reporting relates to a lower yield spread for new corporate bonds.*

However, public debt markets may not value conditional conservative reporting. As discussed in Section 2.3.2, public and private debt financings differ substantially in terms of monitoring efficiency (Diamond 1984, 1991; Rajan 1992), private information availability (Fama 1985; Bhattacharya and Chiesa 1995), seniority in liquidation (Carey 1995; Welch 1997), and renegotiation flexibility (Bharath et al. 2008). I argue that due to these monitoring, information, liquidation, and renegotiation disadvantages over private debt holders, public bondholders are more likely to resort to price terms rather than non-price terms to mitigate information asymmetries between management and bondholders.[21] This argument is corroborated by Bharath et al. (2008) findings that accounting quality only affects the price terms of the dispersed public bond issues. Similarly, Basu, Weintrop and Wu (2010) argue that the different monitoring functions and covenant features between private and public debt contracting result in different enforceability of conditional conservative reporting. Their empirical evidence indicates that bondholders fail to enforce conditional conservative reporting after seasoned bond offerings. Since public bondholders focus less on non-price terms (e.g., monitoring and covenant), and have weak ex post enforceability of conditional conservatism, I further argue that public bondholders will not value conditional conservatism as an efficient contracting mechanism.

In addition, the literature documents some potential negative effect of conditional conservative reporting. Kothari, Ramanna, and Skinner (2010) point out that management can abuse the timely loss recognition standards to generate "cookie-jar" reserves.

[21] The commonly used non-price terms in private bank loan contracting are "covenant" and "collateral" (Costello and Witternberg-Moerman 2009).

According to the prior literature, management can use conditional conservatism as an income-smoothing device and management has incentive to be overly conservative following management turnovers to allow enough space for future profitability (e.g., Murphy and Zimmerman 1993; DeAngelo, DeAngelo and Skinner 1994; Francis, Hanna and Vincent 1996). With less private information channels, public bondholders are less likely to identify the true reasons for borrowers' conditional conservative reporting. In debt contracting setting, Gigler, Kanodia, Sapra and Venugopalan (2009) develop the statistical properties of various degrees of conservatism and their analytical model suggests that conditional conservatism decreases the efficiency of debt contracts. They argue that accounting conservatism results in less informative financial reporting. More specifically, Gigler et al. (2009) indicate that timely loss recognition with lax verifiability standards results in lower information content since such reporting conveys less information about the actual probability of the loss occurring.[22] In addition, the finance literature documents that the financial covenants in public debt are set looser, while the covenants in private debt are set tighter (Dichev and Skinner 2002; Begley and Freedman 2004).[23] As a result, conditional conservative reporting can accelerate covenant violations for private debt relative to public debt.[24] In case of a violation, it is costly for management to involve the private lender review and to negotiate for new covenant terms

[22] Both a future loss with 90% occurrence probability and a loss with 10% occurrence probability may be recognized as a loss under conditional conservative reporting. The difference in the probabilities of the losses makes conditional conservative reporting less informative.

[23] According to Milken Institute 2004, quarterly covenant compliance reports are required in some private debt contracts. Also, Dichev and Skinner (2002) indicate that private lenders would set financial constraints close to the actual current value, which increases the likelihood of covenant violation.

[24] Being well protected by tight covenants, public debt holders may require lower yield spread for new debt issues.

(Dichev and Skinner 2002).[25] In addition, the renegotiation of the debt contract may result in favorable contracting terms (e.g., increase interest rate and impose additional constraints) from lenders' perspective, which has a negative impact on borrowers' future cash flows and operating flexibility (Dichev and Skinner 2002). Hence, bondholders will negatively value conditional conservatism that could accelerate private debt covenant violations.

To sum up, traditional debt contracting efficiency argument and agency theory predict that debt holders could value conditional conservatism positively. However, public bondholders' information disadvantages restrict their monitoring role and their weak ex post enforceability mitigate their ex ante demand for conditional conservatism. In addition, management can abuse the timely loss recognition standard, and conditional conservatism can lower the information content of public reports. Furthermore, conditional conservative reporting could accelerate the costly private debt covenant violation.

3.1.2 Unconditional Conservatism and Yield Spread

The consistent application of Generally Accepted Accounting Principles that reduce earnings independent of future economic events results in unconditional conservatism. Accounting to the definition of unconditional conservatism by Beaver and Ryan (2005, p.269), "the book value of net assets is understated due to predetermined aspects of the accounting process." This definition is keeping with Beaver and Ryan (2000) notion of conservatism—biased underestimation of book value. Contracting

[25] In the case of a covenant violation, borrowers need to prepare updated and detailed financial reports to the lenders, and management spends time to explain and justify the financial situation of the issuer with lenders.

theory predicts that unconditional conservatism cannot increase contracting efficiency because it seems "inefficient or at best neutral in contracting" (Ball and Shivakumar 2005, p.91). Thus, contracting parties can adjust for unconditional conservatism ex ante. Ball and Shivakumar (2005) suggest that contract terms can be written to reverse the effect of accounting methods that result in unconditional conservatism.[26] Basu (2005) uses historical evidence to suggest that unconditional conservatism is used mainly for regulatory or tax purposes, such as the expensing of R&D expenditures as required by SFAS and the acceleration of amortization for tax incentives. Qiang (2007) investigates whether the previously mentioned four demands for accounting conservatism apply to conditional and unconditional conservatism respectively. She finds that contracting demand induces only conditional conservatism, while regulation and taxation demands induce only unconditional conservatism. Litigation consideration induces both conditional and unconditional conservatism

However, a recent stream of argument suggests that unconditional conservatism enhances debt contracting efficiency by the commitment to underestimate the book value. Chan, Lin and Strong (2009) argue that unconditional conservative reporting increases the persistence and predictability of current and future earnings and thus signals good quality earnings to the market. The debt contracting efficiency view indicates that contracting parties can undo the effect of unconditional conservatism by adjusting contracting terms (Ball and Shivakumar 2005). For private bank loan contracting, issuers and private banks can adjust the effect

[26] For example, if book values of assets are consistently understated by a known amount, then in a debt covenant, an agent may need to increase the book values by this amount when determining the total amount the firm can borrow without affecting pricing terms (Ball and Shivakumar 2005).

of unconditional conservatism through either pricing terms (e.g., interest rate) or non-pricing terms (e.g., monitoring and covenant). What about public bond contracting? Recalling the argument in Section 3.1.1 that the monitoring, information, liquidation, and renegotiation disadvantages over private debt holders make public bondholders more likely to resort to price terms rather than non-price terms to mitigate the information problem (Bharath et al. 2008), I argue that public bondholders are more likely to resort to pricing terms to adjust the effect of unconditional conservatism ex ante. Since unconditional conservative reporting immunizes the bond issuers from future potential default by underestimating the "true" value of assets and increasing the "quality" of assets (Qiang 2007), I argue that unconditional conservatism decreases the perceived default risk of bond issuers and bondholders will positively respond to it through lower risk premium.

Empirical studies support the above argument of the effect of unconditional conservatism on both equity and debt settings (Ahmed et al. 2002; Chan et al. 2009). Ahmed et al. (2002) do not provide differential arguments for the effect of conditional and unconditional conservatism on cost of debt. Instead they make the predictions for conservatism as a whole. However, one of their proxies for conservatism, the Beaver and Ryan (2000) market-based measure, captures unconditional conservatism. Ahmed et al. (2002) find that unconditional conservative reporting results in a lower cost of debt. Chan et al. (2009) find that unconditional conservative reporting results in lower cost of equity. Different from Ahmed et al. (2002), my study provides differential arguments for the effects of conditional conservatism and unconditional conservatism on the cost of public bond. Instead of using an indirect proxy for the cost of debt, credit ratings, as did Ahmed

et al. (2002), I use a direct measure, yield spread, to test the effect of unconditional conservatism on the cost of new corporate bond issues. In addition, by exclusively focusing on the public bond market, this study includes some bond-level variables as further controls. In light of the above discussed conceptual argument and recent empirical evidence, I predict that bond market participants will positively respond to unconditional conservatism reporting through risk premiums.

Hypothesis 2: *Ceteris paribus, a firm's unconditional conservative reporting relates to a lower yield spread for new corporate bonds.*

3.1.3 Internal Controls and Yield Spread

Following several financial reporting scandals, the United States enacted the Sarbanes-Oxley Act (SOX) in July 2002. The purpose of SOX is to improve the quality of corporate financial disclosures and to restore the confidence of public investors (SOX 2002). Among its various aspects, SOX internal control provisions (Section 302 and Section 404) attracted much attention, leading to the emergence of two main research streams. One stream of research investigates the economic factors that determine internal control weaknesses (Ge and McVay 2005; Ashbaugh-Skaife et al. 2007; Doyle 2007b; Hoitash et al. 2009), while another stream investigates the economic consequences of internal control weaknesses. Empirical evidence supports the view that internal control weaknesses negatively affect accruals quality (Doyle et al. 2007a; Ashbaugh-Skaife et al. 2008); analyst forecast behavior (Kim et al. 2009); cost of equity (Ogneva et al. 2007; Ashbaugh-Skaife et al. 2009); cost of debt (Costello and Witternberg-Moerman 2011;

Kim et al. 2011), management forecast (Feng et al., 2009), and stock returns (Beneish et al. 2008).

Policymakers and regulators advocate that internal control provisions can eventually generate high-quality financial reporting, which will lower the cost of capital (U.S. House of Representatives 2005). However, the existing internal control literature focuses exclusively on private bank loan contracting to study the impact of internal control weaknesses on the cost of debt. Using 788 firms that file internal control weakness disclosures under Section 302, Costello and Witternberg-Moerman (2011) examine how internal control weaknesses affect bank loan contracting terms. Overall, they find that: (1) after internal control weakness disclosures, lenders decrease their reliance on financial covenants and financial-ratio-based performance pricing provisions, and lenders are more likely to require borrowers to provide additional collateral; (2) material internal control weaknesses lead to increase of interest rates. Focusing on firms that file Section 404 disclosures for the first time, Kim et al. (2011) investigate whether various features of bank loan contracts differ between firms with internal control weakness problems and those without the problems. The empirical results are as follows: (1) Loan spread is about 37 basis points higher for firms with internal control weakness problems; (2) Firm-level internal control problems lead to higher loan rates relative to account-level problems; (3) Firms with internal control problems have tighter non-pricing terms; (4) Firms with internal control problems attract fewer lenders; and (5) Lenders penalize firms that failed to remediate previously disclosed internal control problems by charging higher loan rates, requiring collaterals, and structuring loans with fewer participants in syndicate loan.

According to Merton's (1974) theoretical bond pricing model, bond value is positively associated with the firm's market value (mean effect) and negatively associated with the volatility of the firm's operations (variance effect). I argue that effective internal controls affect bond value through both the mean effect and the variance effect. For the mean effect, effective internal controls restrict managers' propensity to make risky investments and to engage in fraudulent activities, thus preventing unintended wealth transfers and managers' opportunistic behaviors.[27] Consequently, effective internal controls increase a firm's expected future cash flows and thus, the value of the firm (Fernandez 2004). For the variance effect, effective internal controls increase the perceived quality of accounting information and decrease the perceived information risk. And thus ultimately decrease the perceived volatility of the firm's operations. This reasoning is similar to the argument by Kim et al. (2011) that weaknesses in internal controls increase pre-contract uncertainty about the creditworthiness of borrowers and information asymmetries between borrowers and lenders.

Goh and Li (2011) examine the relation between internal control weaknesses and conditional conservatism. They find that (1) firms with maternal weaknesses in internal controls have lower conditional conservative reporting than firms without such weaknesses; and (2) firms that with such weaknesses and subsequently remediate the weaknesses have higher conditional conservative reporting than firms that continue to have material weaknesses. They argue that effective internal controls could create an incentive for conservative reporting and reduce unintentional errors in accrual estimations. Consistent with Goh and Li (2011) argument that effective internal controls enhance

[27] For example, wealth transfers from bondholders to shareholders through excessive dividends or from bondholders to management through excessive compensation.

creditability to conservative reporting, this thesis investigates the moderating effect of internal controls on the relation between conservatism and yield spread of new corporate bond issues. Extending the argument for Hypothesis 1 and 2, I predict the following moderating effect of internal control effectiveness:

> Hypothesis 3a: *Ceteris paribus, a firm's conditional conservative reporting is less effective in lowering the yield spread for new corporate bonds for issuers with ineffective internal controls.*

> Hypothesis 3b: *Ceteris paribus, a firm's unconditional conservative reporting is less effective in lowering the yield spread for new corporate bonds for issuers with ineffective internal controls.*

3.2 Research Design

3.2.1 Sample Selection

This study focuses on the yield spread of new corporate bond issues and the sample for this study comes from the following databases: (1) the Mergent Fixed Income Securities Database (Mergent FISD) for bond-specific information; (2) the Audit Analytics for internal control effectiveness information; (3) the COMPUSTAT for bond issuers' financial information; (4) the Center for Research in Security Prices (CRSP) for bond issuers' equity returns information.

To test Hypothesis 1, I collect data from Mergent FISD, COMPUSTAT, and CRSP. After merging the samples from the three databases, controlling for outliers, and eliminating the observations with missing variables, I obtain 2569 observations (distinct

new bond issues) from 796 firms during the 1991-2009 period.[28] To test Hypothesis 2, I also collect data from Mergent FISD, COMPUSTAT, and CRSP. After merging the samples from the three databases, controlling for outliers, and eliminating the observations with missing variables, I obtain 2396 observations (distinct new bond issues) from 511 firms for further analysis during the 1991-2009 period.[29] To test Hypothesis 3a and 3b, I collect data from Mergent FISD, Audit Analytics, COMPUSTAT, and CRSP. After merging the samples from the four databases and eliminating the observations with missing variable, I obtain 421 and 357 observations (distinct new bond issues) during the 2005-2009 sample period to test Hypothesis 3a and 3b respectively.[30] To control for the effect of outliers, I winsorize all the continuous variables in the three samples at the top and bottom one percent. I eliminate variable coupon and zero coupon bonds, as well as perpetual bonds[31]. Bonds issued by public financial firms (SIC codes 6000-6999) are excluded. Since financial firms operating under different regulations, they have different debt financing activities than industrial firms (Khurana and Raman 2003; Jiang 2008).

3.2.2 Empirical Model

Based on prior research (Ziebart and Reiter 1992; Sengupta 1998; Khurana and Raman 2003; Shi 2003; Jiang 2008), I use the following empirical models to test the

[28] Following Khan and Watts (2009), I delete firm years with negative total assets or book values of equity, and delete firm years with price per share below $1. In addition, I control outliers by eliminating firms in the top and bottom one percent with regard to earnings, returns, size, market-to-book ratio, and leverage.
[29] Following Beaver and Ryan (2000), I control the effect of outliers by winsorizing book-to-market ratio at 0 and 4.
[30] Small sample size is common for studies pertaining to bond markets (Dhillon and Johnson 1994; Shi 2003). One possible explanation is that a large portion of bond issuers are non-public firms and that there is no equity return information available for these non-public bond issuers.
[31] According to Bessembinder, Kahle, Maxwell and Xu (2009), these bonds tend to be unique and to behave more like equities.

effect of conservative reporting and internal control effectiveness on the yield spread of new corporate bond issues:

$$\text{YieldSpread}_{ijt} = \alpha_1 + \beta_1 Con_{it} + \beta_2 \text{IssuerSize}_{it} + \beta_3 \text{ROA}_{it} + \beta_4 \text{Leverage}_{it} + \beta_5 \text{Maturity}_{ijt} + \beta_6 \text{IssueSize}_{ijt} + \beta_7 \text{Rating}_{ijt} + \beta_8 \text{BusiCycle}_{ijt} + \beta_9 \text{RedeemD}_{ijt} + \beta_{10} \text{PutD}_{ijt} + \beta_{11} \text{ConvertD}_{ijt} + \beta_{12} 415\text{RegD}_{ijt} + \beta_{13} 144\text{aRegD}_{ijt} + \text{Industry \& Year Dummies} + \varepsilon_{ijt} \quad (1)$$

$$\text{YieldSpread}_{ijt} = \alpha_1 + \beta_1 Con_{it} + \beta_2 SOX404D_{ijt} + \beta_3 Con*SOX404D_{ijt} + \beta_4 \text{IssuerSize}_{it} + \beta_5 \text{ROA}_{it} + \beta_6 \text{Leverage}_{it} + \beta_7 \text{Maturity}_{ijt} + \beta_8 \text{IssueSize}_{ijt} + \beta_9 \text{Rating}_{ijt} + \beta_{10} \text{BusiCycle}_{ijt} + \beta_{11} \text{RedeemD}_{ijt} + \beta_{12} \text{PutD}_{ijt} + \beta_{13} \text{ConvertD}_{ijt} + \beta_{14} 415\text{RegD}_{ijt} + \beta_{15} 144\text{aRegD}_{ijt} + \text{Industry \& Year Dummies} + \varepsilon_{ijt} \quad (2)$$

According to Petersen (2009), the standard errors calculated by an OLS regression for panel data could be biased due to the within-firm overtime, or across-firm residual correlation. Thus, I correct the standard errors of the OLS regression for firm-level clustering as well as for heteroscedasticity.

Dependent Variable

YieldSpread: Following previous studies, I measure yield spread as the difference between the corporate bond yield at issuance and the Treasury bond yield with comparable maturity (Shi 2003; Jiang 2008; Wang and Zhang 2009). The subscript *ijt* means bond *j* for firm *i* in year *t*. Yield spread captures the risk premium that bond issuers pay to bond investors in order to raise funds from the corporate bond market. Treasury bonds are issued by national governments. Because government bonds are backed by the

high credit quality and taxing power of a country, they have very little credit risk. Thus, yield spread is a direct and accurate measure of issuers' incremental cost of bond over a comparable risk-free Treasury bond. In fact, by subtracting corporate bond yield from a comparable Treasury bond yield, I control for the effect of economy-wide information.

Tested Variable

I employ two proxies for conservative reporting (*Con*). 1) *ConCon*: firm-year conditional conservatism measure introduced by Khan and Watts (2009). 2) *UnCon*: firm-year unconditional conservatism measure introduced by Beaver and Ryan (2000). *SOX404D*: a dummy variable for internal control effectiveness. This variable is 1 if a new bond issue is offered after the conclusion by an auditor under SOX Section 404 that the issuer's internal control over financial reporting are not effective, and 0 if the new bond issue is offered after the conclusion by an auditor that the issuer's internal control over financial reporting are effective.[32]

Firm-level Control Variable

IssuerSize: The natural log of an issuer's assets at the end of the fiscal year immediately prior to the corporate bond issuance date. Issuers with larger assets are perceived to be less risky (lower default risk) compared to those with smaller assets. Hence, it is expected to be negatively related to the risk premium.

ROA: Return on assets of the issuer, defined as net income divided by total assets at the end of the fiscal year immediately prior to the corporate bond issuance date. A

[32] This categorization is consistent with Kim et al. (2011), who investigate the effect of internal control effectiveness on private bank loan contracts.

higher ROA generally implies greater profitability and is thus expected to be negatively related to the risk premium.

Leverage: Long term debt divided by total assets of the issuer at the end of the fiscal year immediately prior to the corporate bond issuance date. Leverage is expected to be positively related to the risk premium.

Bond-level Control Variable

Rating: A dummy variable for the credit rating. It is 1 if the new bond issues are rated as investment grades (Baa or above) by Moody's, and 0 for those rated as non-investment grades (Ba or below) (Bharath et al. 2008).[33] For issues without Moody's rating, Standard & Poor's rating or Fitch rating is used instead. Credit rating indicates the creditworthiness of the issue and thus is expected to be negatively related to the risk premium (Shi 2003; Jiang 2008).

Maturity: The natural log of the number of years until the bond matures. Usually, bond issues with longer maturity are perceived to be more risky than the issues with shorter maturity (Khurana and Raman 2003; Shi 2003). Thus, maturity is expected to be positively related to the risk premium.

IssueSize: The natural log of the par value of the bond initially issued in millions of dollars. A larger issue size can enjoy a lower risk premium due to the economies of scale in underwriting (Sengupta 1998). However, Khurana and Raman (2003) point out

[33] Some studies sequentially convert the credit ratings to numbers, for example with 1 for AAA through 21 for C. However, the underlying assumption is that the average quality difference between any two adjacent ratings is the same as that between any other two adjacent ratings. Consistent with Khurana and Raman (2003), this study releases this assumption by using dichotomy categorization: investment vs. non-investment grade. My argument is that, in new bond issue market, the difference between any two adjacent ratings is more value relevant if the two adjacent ratings are ranked around investment vs. non-investment grade cutoff when compared to those ranked around two extremes.

that large issue size increases the difficulty for underwriters to place the issue with investors, and, on the basis of cross-sectional observations spanning 20 years, Wang and Zhang (2009) find that issue size is positively associated with bond yield spread. Thus, I do not make predictions for the sign of issue size.

BusiCycle: Business cycle is the difference between the average yield of Moody's Aaa bonds for the month of issue and the average yield of 10-year U.S. Treasury bonds for the month of issue. This variable controls for the time-series variation of risk premiums over the business cycle. Prior studies predict that it is positively related to the risk premium (Sengupta 1998; Shi 2003; Jiang 2008).

RedeemD: A dummy variable for the call feature of the bond. It is 1 for bonds that have a call option and 0 otherwise. A redeemable bond offers issuers the option to repurchase the bond before maturity. It increases the potential interest risk for bondholders and is expected to be positively related to the risk premium.

PutD: A dummy variable for the put feature of the bond. It is 1 for bonds with a put option and 0 otherwise. Putable bond offers bondholders the option to retire the bond before maturity and thus is expected to be negatively related to the risk premium.

ConvertD: A dummy variable for the convert feature of the bond. It is 1 for bonds with a convert option and 0 otherwise. Mayers (1998) suggests that lowering the interest rate is one consideration for firms to issue convertible bonds. It is expected to be negatively related to the risk premium.

415RegD: A dummy variable for the SEC Rule 415 shelf registration feature of the bond. It is 1 for bonds issued under a shelf registration and 0 otherwise. According to Rule 415, issuers are allowed to pre-register a certain amount of securities (e.g. equities

and bonds). In the case of bonds, issuers have the option to take bonds off the "shelf" and offering them to the public at a favorable time up to two years in the future. Therefore, the coefficient for this variable is expected to be negative.

144aRegD: A dummy variable for the SEC Rule 144a private placement feature of the bond. It is 1 for bonds issued through private placements that are exempt from registration and 0 otherwise. Rule 144a issues are generally offered to a limited number of institutional investors, known as Qualified Institutional Buyers. Since institutional investors have stronger negotiation power over public investors on the coupon rate, I expect the coefficient for this variable is positively related to the risk premium.

Industry and Year Dummy

In line with the prior literature, I include industry dummies and year dummies in the regression model to further control for the potential differences in issuer and issue features across industries and over time (Shi 2003; Kim et al. 2011).

3.2.3 Measurement of Variable

Conditional Conservatism

I use Khan and Watts (2009) firm-year measure of conservatism as the proxy for conditional conservatism. Firms with more conditional conservative reporting have a higher C_Score. According to Khan and Watts (2009), C_Score captures variation in conservatism and predicts asymmetric earnings timeliness at horizons of up to three years ahead. This measure follows Basu's (1997) notion of timely loss recognition; however, it overcomes Basu's (1997) limitation of single-period cross-sectional regression or single-firm time series regression as indicated by Givoly, Hayn and Natarajan (2007). Khan and

Watts (2009) modify the original Basu (1997) regression to allow coefficients to vary across firms and time as follows:

$$X_{it} = \beta_{1t} + \beta_{2t}D_{it} + \beta_{3it}R_{it} + \beta_{4it}D_{it}R_{it} + \varepsilon_{it} \quad (3)$$

Where X_{it} is earnings for firm *i* in year *t*, R_{it} is returns for firm *i* in year *t*, and D_{it} is a dummy variable equal to 1 if $R_{it} < 0$ and 0 otherwise. β_{3it} is a firm-year good news timeliness measure and β_{4it} is the incremental firm-year timeliness for bad news over good news.

Khan and Watts (2009) assumes that both the timeliness of good news and the incremental timeliness of bad news are linear functions of time-varying firm-specific characteristics:

$$G\_Score \equiv \beta_{3it} = \mu_{1t} + \mu_{2t}Size_{it} + \mu_{3t}M/B_{it} + \mu_{4t}Lev_{it} \quad (4)$$

$$C\_Score \equiv \beta_{4it} = \lambda_{1t} + \lambda_{2t}Size_{it} + \lambda_{3t}M/B_{it} + \lambda_{4t}Lev_{it} \quad (5)$$

Where μ_i and λ_i, *i* = 1 to 4, are constant across firms but vary across time. $Size_{it}$ is the natural log of market value of equity for firm *i* in year *t*, M/B_{it} is the ratio of market value of equity to book value of equity for firm *i* in *t*; and Lev_{it} is leverage, defined as long-term debt plus short-term debt deflated by market value of equity for firm *i* in year *t*. G_Score is the firm-year measure of good news timeliness, while C_Score is the firm-year measure of conservatism. G_Score and C_Score vary across firms through cross-sectional variation in the firm-year characteristics, e.g., Size, M/B, and Lev. Equations (4) and (5) are substituted into regression equation (3) to yield the following equation (6):

$$X_{it} = \beta_1 + \beta_2 D_{it} + R_{it}(\mu_{1t} + \mu_{2t} Size_{it} + \mu_{3t} M/B_{it} + \mu_{4t} Lev_{it}) + D_{it}R_{it}(\lambda_{1t} + \lambda_{2t} Size_{it} + \lambda_{3t} M/B_{it} + \lambda_{4t} Lev_{it}) + \varepsilon_{it} \quad (6)$$

Equation (6) is estimated using annual cross-sectional regressions. C_Score is then calculated using equation (5) to proxy for my measure of conditional conservatism (*ConCon*).

Unconditional Conservatism

Beaver and Ryan (2000) argue that book-to-market ratios consist of bias (persistent) components and lagged (transitory) components. They suggest that lagged components proxy for currently unrecognized economic gains and losses and that bias components reflect persistent differences between book and market values. They attribute this difference to unconditional conservative reporting. In addition, Beaver and Ryan (2000) empirically measure the two components with the following equation (7):

$$BTM_{it} = \alpha_0 + \alpha_i + \alpha_t + \beta_0 Ret_{it} + \beta_1 Ret_{it-1} + \beta_2 Ret_{it-2} + \beta_3 Ret_{it-3} + \beta_4 Ret_{it-4} + \beta_5 Ret_{it-5} + \beta_6 Ret_{it-6} + \varepsilon_{it} \quad (7)$$

Where BTM_{it} is the book-to-market ratio for firm *i* in year *t* and Ret_{it} is the equity return (adjustment for dividends) for firm *i* in year *t*. According to Beaver and Ryan (2000), αi captures the firm-specific information which reflects the bias component of the book-to-market ratio. Since αi inversely relates to the degree of unconditional conservative reporting, I use –αi as a proxy for firm-year unconditional conservatism (*UnCon*).

3.3 Empirical Result

3.3.1 Univariate Analysis

Table 1 provides descriptive statistics of the observations for the conditional conservatism sample and the unconditional conservatism sample by year. The sample period for the two conservatism samples are from 1991 to 2009. In total there are 2569 observations in the conditional conservatism sample, and 2396 observations in the unconditional conservatism sample. Though the conditional and unconditional conservatism samples are based on the same sample period, the sample sizes for these two samples are different. This is due to the different methods used to calculate conditional conservatism and unconditional conservatism measures.[34]

[Insert Table 1 about here]

Table 2 summarizes the descriptive statistics for the conservatism sample. Since my sample has both firm-level and bond-level variables, the number of observations used to calculate the descriptive statistics differ between the two types of variables. According to Panel A of Table 2, the average yield spread for the conditional conservatism sample is 164.07 basis points (about 1.64 percent). The minimum and maximum yield spreads are -345.5 and 850 basis points respectively.[35] The average degree of conditional conservatism is -0.0449, with a standard deviation of 0.1804. About eighty-seven percent

[34] As discussed in Section 3.2.3, to measure conditional conservatism, I only need the current year's stock return; whereas to calculate unconditional conservatism, I need annual returns from the past six years. Thus, the number of observations in the unconditional conservatism sample is less than those in the conditional conservatism sample.

[35] The negative yield spread could be justified by the putable or convertible feature of the new bond issues. Putable bonds give bondholders the option to retire the bond before maturity. It is an additional benefit to bondholders. Thus, issuers can sometimes issue putable bonds with offering yield that is lower than the compatible U.S. Treasury yield. Also, Mayers (1998) suggests that lowering the interest rate is one consideration for firms to issue convertible bonds.

of bonds are issued by issuers with effective internal control over financial reporting, which is consistent with Kim et al.'s (2011) descriptive statistics that about 13% of sample firms have weak internal controls. The average ROA and leverage of the bond issuer are 1.99% and 26.38%. The mean credit rating is 0.2153, which means that about 22% of new bond issues are investment grade as rated by Moody's. Respectively, 59%, 6%, and 18% of new bond issues have call, put, and convert options. In addition, 62% of new bond issues are issued under shelf registration and 30% of the new bond issues are issued through private placement. Panel B of Table 2 indicates that the average yield spread for the unconditional conservatism sample is 154.05 basis points. The minimum and maximum yield spreads are -410 and 747.5 basis points respectively. The average degree of unconditional conservatism is 0.3435, with a standard deviation of 0.3515.

[Insert Table 2 about here]

Table 3 represent correlation matrices for conditional and unconditional conservatism samples respectively. Panel A of Table 3 suggests that yield spread is positively correlated with the firm-year conditional conservatism measure. Also, yield spread correlates negatively with maturity, and correlates positively with rating, issuer size, leverage, issue size, and business cycle. As indicated in Panel B of Table 3, the correlation between yield spread and firm-year unconditional conservatism is positive, but it is only slightly significant at 0.05 level.

[Insert Table 3 about here]

3.3.2 Multivariate Analysis

Equation (1) is my main regression model, in which I regress the yield spread on conservative reporting (proxied by the conditional and unconditional conservatism measure respectively), interaction term between conservative reporting and internal control effectiveness, firm-level and bond-level controls, and industry and year dummies. Panel A of Table 4 summarizes the OLS regression results with conditional conservatism. The coefficient for conditional conservatism (*ConCon*) in Specification 1 is significant and positive (224.96; $p < 0.001$), which it is inconsistent with the prediction in Hypothesis 1. Since the standard deviation of the conditional conservatism measure is 0.1804, I interpret this coefficient as follows: on average, one standard deviation increase in *ConCon* will result in an increase of 36.17 (200.5*0.1804) basis points (approximately 0.36 percent) in the yield spread, which is economically significant. This finding is inconsistent with the traditional debt contracting efficiency argument of conditional conservatism. But as discussed in Hypothesis Development Section, there exist potential negative effect of conditional conservatism to the market. Empirical evidence by Chan et al. (2010) also finds that firms with more conditional conservative reporting exhibits lower cost of equity. In addition, the coefficient for interaction term (*ConCon*SOX404D*) in Specification 2 is positive (267.54; $p < 0.001$), which supports Hypothesis 3a. It suggests that ineffective internal controls enhance the effect of conditional conservative reporting to increase the yield spread of new corporate bond issues. Overall, the independent variables in Specification 1 explain 65.19 percent of the variance of the dependent variable (yield spread) and the model is significant at the 0.001 level.

[Insert Table 4 about here]

All the firm-level controls have the expected signs for their coefficients. The coefficients for issuer size (-12.35; $p < 0.001$) and for ROA (-222.85; $p < 0.001$) are negative. This means that larger size issuers can issue bonds at a lower cost. It corroborates the argument that issuer size can be a good proxy for equity risk and that larger size issuers benefit from the lower cost of borrowing (Khurana and Raman 2003). Since the standard deviation of ROA is 0.1032, I interpret the coefficient for ROA to mean that one standard deviation increase in ROA will result in a decrease of 22.99 (222.85*0.1032) basis points in the yield spread. In addition, the coefficient for leverage is positive (109.7; $p < 0.001$). This means that one standard deviation (0.1694) increase in leverage will result in an increase of 18.58 (109.7*0.1694) basis points in the yield spread. Overall, these results corroborate the argument from prior studies that ROA and leverage can be good proxy for default risk. Lower ROA and higher leverage result in a higher cost of borrowing (Khurana and Raman 2003; Shi 2003; Jiang 2008).

As for the bond-level controls, most of the coefficients have the expected signs. The coefficient for credit rating (*Rating*) is negative (-97.36; $p < 0.001$). It means, on average, the yield spreads of investment grade bonds will be lower than those of non-investment grade bonds by 97 basis points (approximately 0.97 percent). This finding reinforces Jiang's (2008) argument that credit rating captures the creditworthiness of the issue. Consistent with prior studies, the coefficient for the business cycle is positive (1.55; $p < 0.001$) (Sengupta 1998; Jiang 2008). It means issuers will pay higher risk premiums for new bond issues when there is a larger divergence between Moody's Aaa bond yields and 10-year U.S. Treasury bond yields for the same month. As predicted, the coefficient for the redeemable dummy is positive (57.26; $p < 0.001$), while the coefficients for the

putable dummy (-154.4; $p < 0.001$), convertible dummy (-318.39; $p < 0.001$), and 415 regulation dummy (-77.76; $p < 0.001$) are negative. These results suggest that bond issuers will pay lower risk premiums for bonds that have putable and convertible features and that were issued under shelf registration. However, issuers will pay higher risk premiums for bonds that have redeemable features. The large negative coefficients for putable and convertible dummies further justify the negative yield spread as reported in the descriptive tables. However, the coefficient for maturity is negative (-14.95; $p < 0.01$), which is inconsistent with my expectation. The effect of maturity on the yield spread should be interpreted with caution.

Panel B of Table 4 reports the empirical results for Hypothesis 2 and Hypothesis 3b. The coefficients for unconditional conservatism (*UnCon*) are negatively significant in Specification 1, which is consistent with Hypothesis 2 that bond market participants positively value issuers' unconditional conservative reporting through risk premium. The coefficient for unconditional conservatism (*UnCon*) is negative (-65.28; $p < 0.001$). Since the standard deviation of the unconditional conservatism measure is 0.3515, I interpret this coefficient to mean that, on average, one standard deviation increase in *UnCon* will result in a decrease of 22.95 (65.28*0.3515) basis points (approximately 0.23 percent) in the yield spread. This finding corroborates Ahmed et al.'s (2002) empirical evidence that unconditional conservatism results in a lower cost of debt. The coefficient for interaction term (*UnCon*SOX404D*) is positive (128.21; $p < 0.1$). It suggests that ineffective internal controls weaken the effect of unconditional conservative reporting to reduce the yield spread of new corporate bond issues. However, this coefficient is only significant at 10 percent level and it is not robust for all the sensitivity checks. Thus the moderating effect

of internal controls on the relation between unconditional conservatism and yield spread should be interpreted with caution. Overall, the independent variables in Specification 1 explain 59.27 percent of the variance of the dependent variable (yield spread) and the model is significant at the 0.001 level. In addition, most of the coefficients for the control variables are statistically significant with the predicted signs. Since the dependent variable and all the control variables are the same for conditional and unconditional conservatism regressions, I do not discuss further the coefficients for control variables.

3.4 Robustness Check

My datasets contain multiple new bond issues for a single firm for one and the same fiscal year. Since multi-level observations violate the assumption of residual independence at the lower bond-level, the standard errors from the ordinary least square (OLS) regression may be biased. Accordingly, I used hierarchical linear modeling (HLM) to handle this multi-level observation problem. Unlike OLS, HLM uses the maximum likelihood method to estimate coefficients. In my case, HLM accounts for the within-firm correlation among new bond issues by the same firm for one and the same year, and adjusts the estimated covariance matrix. HLM is widely used in social science research with multi-level observations (Ang, Slaughter and Ng 2002; Seibert, Silver and Randolph 2004). However, I also notice that, on average, a corporation issues bond only about four times during my sample period. This means that the number of within-firm observations is very limited.[36] In fact, only within-firm and within-year observations violate the independence assumption at the bond-level. Thus, I may overestimate the effect of intra-

[36] This is different from social science research that has many within-level observations. For example, a research investigating the mathematical skills of high school students within a region could have school-level and student-level variables, which allows for many observations at the within-school level.

firm correlation among bonds issued by the same firm by employing the HLM regression. As a result, I only use HLM regression to conduct a robustness check. The results are summarized in the first 2 specifications of Table 5 and Table 7. Overall, yield spread is positively correlated with conditional conservatism and negatively associated with unconditional conservatism. In addition, the interaction effects of internal controls are consistent with my predictions. Thus, the main findings are robust with the HLM regression.

[Insert Table 5 & 7 about here]

Khan and Watts (2009) firm-year conditional conservatism measure could be bias. Because C_score reflects firm characteristics such as being young, having high growth and high leverage, which could positively related to the cost of debt. Following Givoly and Hayn (2000) and Zhang (2008) I use negative skewness of earnings over skewness of cash flow as an alternative proxy for conditional conservatism measure. Beaver and Ryan measure of unconditional conservatism has been criticized in the literature (Roychowdhury and Watts 2007). One limitation is that this measure can be picking up high growth firms just as much as it is picking up unconditional conservatism. Alternatively, I use Penman and Zhang (2002) measure as proxy for unconditional conservatism. Specifically, this measure of unconditional conservatism is calculated as the ratio of LIFO reserves plus hidden R&D and advertising reserves resulting from the application of unconditional conservatism to total assets. Most of the findings are unchanged compared to the results in the main multivatiate analysis, which are reported in the last 2 specifications of Table 5 and Table 7. However, the coefficient for the

interaction term (UnCon*SOX404D) is not significant. Thus Hypothesis 3b is not supported with the alternative proxy for unconditional conservatism

In the main multivariate analysis, I include credit rating as a bond-level control in my regression model. However, correlation analysis indicated that credit rating is significantly correlated with some firm-level and bond-level control variables. The credit rating literature justifies this phenomenon with the fact that credit rating agencies take into consideration the issuer's financial information and bond features during the rating processes (Beaver, Shakespeare and Soliman 2006). Thus, including credit rating in the regression might introduce a multi-collinearity problem and bias the coefficients estimation. Accordingly, I run an OLS regression without credit rating as another robustness check. Most of the empirical results, summarized in the first 2 specifications of Table 6 and Table 8, are consistent with the findings in the main multivariate analysis. But Hypothesis 3b is not supported by this robustness check.

[Insert Table 6 & 8 about here]

The descriptive statistics tables indicated that a small percentage of new corporate bond issues have convertible features. Convertible bonds are different from straight bonds, and linear regression models may not be appropriate to explore the relationship between yield spread and convertible features (Khurana and Raman 2003). As a robustness check, I delete these new bond issues with convertible feature and rerun the OLS regression. The main findings for conditional and unconditional conservatism samples are unchanged and are reported in the last 2 specifications of Table 6 and Table 8.

It is argued that recent subprime crisis could affect corporate bond markets. The relation between conservative reporting and the yield spread of new corporate bond

issues could be different between pre-crisis period and crisis period. I run OLS regression for pre-crisis sample period and crisis sample period separately as another robustness check.[37] The empirical results are summarized in Table 9 and are consistent with the findings in the main multivariate analysis.

[Insert Table 9 about here]

3.5 Summary

The focus of this study is the relation between conservatism and the yield spread of new corporate bond issues. In addition, I take into consideration the effect of internal control effectiveness on the above relation. More specifically, I investigate following research questions: (1) Whether and to what extent does conditional and unconditional conservative reporting influence the yield spread of new corporate bond issues? (2) Whether there exists an interaction effect between conservative reporting and internal control effectiveness on the yield spread of new corporate bond issues? The empirical results indicate that conditional conservatism relates to a higher yield spread of new corporate bond issues, which goes counter to the debt contracting efficiency argument as predicted in Hypothesis 1 but is consistent with my alternative interpretations of the negative effect of conditional conservatism. Consistent with my prediction of the effect of unconditional conservatism, empirical findings suggest that unconditional conservatism relates to a lower yield spread of new corporate bond issues. With regard to the interaction effect, I find that ineffective internal controls enhance the effect of conditional conservatism to raise the yield spread of new corporate bond issues. These

[37] In stead of separate sample into pre-crisis and crisis periods, I also add crisis period dummy in the full sample and run the OLS regression. The findings (not reported) are unchanged.

empirical results are unchanged with some robustness checks, e.g., using HLM regression instead of OLS regression, using alternative proxies for conservatism measures, excluding credit ratings, excluding bonds with convertible feature, and controlling the effect of current subprime crisis. But the finding that ineffective internal controls weaken the effect of unconditional conservatism to decrease the yield spread is not supported by all the robustness checks.

This study contributes to the existing literature on the following dimensions. First, it extends the conservatism literature by providing theoretical arguments and empirical evidence that contrast sharply with the debt contracting efficiency view of conditional and unconditional conservative reporting (Ball and Shivakumar 2005). Second, this study complements the corporate bond literature by using a financial reporting attribute that directly relates to debt financing context to explain the yield spread of new corporate bond issues. Third, this study contributes to the SOX internal control literature by investigating the moderating effect of internal control effectiveness under SOX provisions in public bond setting.

Chapter 4 The Effect of Accounting Conservatism and Internal Control Effectiveness on the Underpricing of Newly Issued Corporate Bonds

4.1 Hypothesis Development

4.1.1 Conditional Conservatism and Underpricing

Among the four widely recognized explanations for accounting conservatism (contracting, litigation, regulation, and taxation, as per Watts 2003a, 2003b), contracting, especially debt contracting, is the most influential and intensively studied one. Conditional conservatism depends on future economic circumstances. Beaver and Ryan (2005, p.269) define conditional conservatism as "book values are written down under sufficiently adverse circumstances but not written up under favorable circumstances." This definition is consistent with Basu's (1997) notion of conservatism—timely loss recognition. Consistent with the traditional debt contracting efficiency argument for conditional conservatism as predicted in Hypothesis 1, I predict that conditional conservatism decreases information asymmetry among contracting parties and bond markets will positively value it.

More specifically, due to information asymmetry between agents and principals, and the limited liability and tenure of agents, agents (e.g. managers of the firm) have strong incentives to engage in opportunistic behaviors to maximize their own benefits at the expense of other contracting parties (e.g., creditors). Conditional conservatism mitigates information asymmetries among contracting parties, and thus alleviates adverse selection and moral hazard problems, as indicated by Jensen and Meckling (1976). Contracting theory predicts that conditional conservatism and unconditional conservatism

play substantially different roles in enhancing contracting efficiency. According to Ball and Shivakumar (2005), only conditional conservatism signals new information to creditors and thus enhances contracting efficiency. Timely loss recognition improves ex post monitoring and increases the likelihood of a debt covenant violation. In the case of a covenant violation, the decision rights will transfer from equity holders to debt holders. Thus, conditional conservative reporting serves as a platform for efficient contracting (Watts 2003a), especially when managers have strong incentives to overstate accounting numbers through their discretionary choices.

Existing studies largely focus on private bank loan markets when testing these agency cost and debt contracting efficiency arguments (Wittenberg-Moerman 2008; Zhang 2008). Wittenbery-Moerman (2008) documents that conditional conservative reporting reduces the bid-ask spread in the secondary loan trade. Using four conditional conservatism measures, Zhang (2008) finds that the spread of the initial loan interest rate over the London Interbank Offered Rate (LIBOR) is negatively related to borrowers' conservatism. Focusing on non-price terms of public debt contract, Nikolaev (2010) documents that reliance on covenants promotes conditional conservative reporting.

The literature of equity offerings records substantial offering-date returns, a phenomenon called "underpricing". The underpricing literature documents various explanations for the underpricing of equity offerings. The common explanation for the equity offering underpricing is that it solves information problems. Rock (1986) proposes winner's curse explanation. Rock assumes that there exist both informed and uninformed investors and argues that underpricing motivates the participation of uninformed investors, who face a winner's course. Underpricing is interpreted as the compensation to

uninformed investors for the bias in the allocation of new issues. Assuming the information asymmetry between management and investors, Allen and Faulhaber (1989) suggest a signaling explanation that, to mitigate adverse selection problem, good firms distinguish themselves with bad firms through underpricing. With the assumption that the payment for information to institutional investors in the bookbuilding process is the main explanation for underpricing, Sherman and Titman (2002) predicts that issuers that just went through the bookbuilding process would experience less underpricing. Beside information explanations, the literature provides other reasons for underpricing. Ellul and Pagano (2006) argue that underpricing compensates the risk of post-issue illiquidity. Booth and Chua (1996) suggest that to avoid ownership concentration, issuers may use underpricing to attract a large number of small shareholders. In addition, with the dispersed ownership, it is more difficult for outsiders to challenge management. Drake and Vetsuypens (1993) argue that underpricing can reduce the probability and severity of future lawsuit. Following this litigation argument, Lowry and Shu (2002) find that firms with higher litigation risk underprice their IPOs more as a form of insurance.

This study uses conditional and unconditional conservatism to explain the underpricing of newly issued corporate bond. The literature implicitly documents a link between conservatism and information risk (Penman and Zhang 2002; Gu and Wu 2003; Suijs 2008; Chen et al. 2009; Garcia Lara et al. 2011). Penman and Zhang (2002) provide empirical evidence that unconditional conservative reporting forecasts return on net operating assets and stock returns. Gu and Wu (2003) document a relation between conditional conservatism and analyst forecast bias. Suijs (2008) find that conditional conservative reporting relates to a lower volatility of the stock price, which could be a

proxy for information risk. Chan et al. (2009) argue that unconditional conservatism increases the predictability of future earnings and document that unconditional conservative reporting results in a lower cost of equity. Garcia Lara et al. (2011) argue that timely loss recognition increases bad news reporting precision and reduces information uncertainty. Their empirical evidence suggests that conditional conservative reporting lowers cost of equity capital. Based on these empirical studies, I conclude that, to the extent that conservatism relates to the cost of capital, conservatism could proxy for information risk.

Relative to the underpricing literature of corporate equity offerings, the underpricing literature of corporate bond offerings is underdeveloped (Datta, Iskandar-Datta and Patel 1997; Helwege and Kleiman 1998; Cai et al. 2007). Cai et al. (2007) argue that among the explanations of equity underpricing, information and liquidity explanations are more relevant to bond underpricing. Their empirical evidence support that information-related arguments are more relevant to bond underpricing. Signaling theory assumes that information asymmetry exists and indicates that issuers with less information problems will use underpricing to distinguish them from those with more information problems (Allen and Faulhaber 1989; Grinblatt and Hwang 1989). Because managers face adverse selection problem that investors cannot tell good firms from bad firms and they give the same valuation to all the firms. Cai et al. (2007) uses future downgrades as a proxy of information asymmetry and finds that issues with higher probability of future downgrades will experience less underpricing, which is consistent with what signaling theory predicts. In public bond context, I argue that, with less private information channels, public bondholders face more information asymmetry problems.

Conditional conservatism decreases the information asymmetry between management and bondholders. Accordingly, I predict that issuers with more conditional conservative reporting will issue bond at lower price to show their information advantage.

Hypothesis 4: *Ceteris paribus, a firm's conditional conservative reporting results in more underpricing for newly issued bonds.*

4.1.2 Unconditional Conservatism and Underpricing

The consistent application of Generally Accepted Accounting Principles that reduce earnings independent of future economic events results in unconditional conservatism. Accounting to the definition of unconditional conservatism by Beaver and Ryan (2005, p.269), "the book value of net assets is understated due to predetermined aspects of the accounting process." This definition is keeping with Beaver and Ryan (2000) notion of conservatism—biased underestimation of book value. Consistent with the empirical findings in Chapter 3, my prediction of the effect of unconditional conservatism on bond underpricing is based on the argument that unconditional conservatism is positively valued by bond markets.

More specifically, recent stream of argument suggests that unconditional conservatism enhances debt contracting efficiency by the commitment to underestimate the book value. Chan et al. (2009) argue that unconditional conservative reporting increases the persistence and predictability of current and future earnings and thus signals good quality earnings to the market. The debt contracting efficiency view indicates that contracting parties can undo the effect of unconditional conservatism by adjusting contracting terms (Ball and Shivakumar 2005).

For private bank loan contracting, issuers and private banks can adjust the effect of unconditional conservatism through either pricing terms (e.g., interest rate) or non-pricing terms (e.g., monitoring and covenant). What about public bond contracting? Recalling the argument in Section 3.1.1 that the monitoring, information, liquidation, and renegotiation disadvantages over private debt holders make public bondholders more likely to resort to price terms rather than non-price terms to mitigate the information problem (Bharath et al. 2008), I argue that public bondholders are more likely to resort to pricing terms to adjust the effect of unconditional conservatism ex ante. Since unconditional conservative reporting immunizes the bond issuers from future potential default by underestimating the "true" value of assets and increasing the "quality" of assets (Qiang 2007), I argue that unconditional conservatism decreases the perceived default risk of bond issuers and bondholders will positively respond to it through lower risk premium.

To the extent unconditional conservatism underestimate book value, it will mitigate information asymmetry problem between management and bondholders and decrease the information risk of borrower. According to the previously discussed signaling theory of bond underpricing, I argue that issuers with more unconditional conservative reporting will underprice more to distinguish themselves from issuers with less unconditional conservative reporting. In light of these arguments, I provides following prediction:

> Hypothesis 5: *Ceteris paribus, a firm's unconditional conservative reporting results in more underpricing for newly issued bonds.*

4.1.3 Internal Controls and Underpricing

Following several financial reporting scandals, the United States enacted the Sarbanes-Oxley Act (SOX) in July 2002. The purpose of SOX is to improve the quality of corporate financial disclosures and to restore the confidence of public investors (SOX 2002). Among its various aspects, SOX internal control provisions (Section 302 and Section 404) attracted much attention, leading to the emergence of two main research streams. One stream of research investigates the economic factors that determine internal control weaknesses (Ge and McVay 2005; Ashbaugh-Skaife et al. 2007; Doyle 2007b; Hoitash et al. 2009), while another stream investigates the economic consequences of internal control weaknesses. Empirical evidence supports the view that internal control weaknesses negatively affect accruals quality (Doyle et al. 2007a; Ashbaugh-Skaife et al. 2008); analyst forecast behavior (Kim et al. 2009); cost of equity (Ogneva et al. 2007; Ashbaugh-Skaife et al. 2009); cost of debt (Costello and Witternberg-Moerman 2011; Kim et al. 2011), management forecast (Feng et al., 2009), and stock returns (Beneish et al. 2008).

Policymakers and regulators advocate that internal control provisions can eventually generate high-quality financial reporting, which will lower the cost of capital (U.S. House of Representatives 2005). However, the existing internal control literature focuses exclusively on private bank loan contracting to study the impact of SOX internal control weaknesses on the cost of debt. Using 788 firms that file internal control weakness disclosures under Section 302, Costello and Witternberg-Moerman (2011) examine how internal control weaknesses affect bank loan contracting terms. Overall, they find that: (1) After internal control weakness disclosures, lenders decrease their reliance on financial covenants and financial-ratio-based performance pricing provisions,

and lenders are more likely to require borrowers to provide additional collateral. (2) Material internal control weaknesses lead to increase of interest rates. Focusing on firms that file Section 404 disclosures for the first time, Kim et al. (2011) investigate whether various features of bank loan contracts differ between firms with internal control weakness problems and those without the problems. The empirical results are as follows: (1) Loan spread is about 37 basis points higher for firms with internal control weakness problems; (2) Firm-level internal control problems lead to higher loan rates relative to account-level problems; (3) Firms with internal control problems have tighter non-pricing terms; (4) Firms with internal control problems attract fewer lenders; and (5) Lenders penalize firms who failed to remediate previously disclosed internal control problems by charging higher loan rates, requiring collaterals, and structuring loans with fewer participants in syndicate loan.

I argue that effective internal controls restrict managers' propensity to make risky investments and to engage in fraudulent activities, thus decreasing operating risk. In addition, effective internal controls increase the perceived quality of accounting information and decrease the perceived information risk. This reasoning is similar to the argument by Kim et al. (2011) that weaknesses in internal controls increase pre-contract uncertainty about the creditworthiness of borrowers and information asymmetries between borrowers and lenders. However, only the information argument of underpricing is relevant when using internal control effectiveness to explain the underpricing of newly issued corporate bonds. Signaling argument is not applicable to internal control disclosure setting. Because issuer's internal control effectiveness is publicly available through SOX internal control disclosure. According to information argument, issuers

with internal control problems may use underpricing to motivate investors' participation in the market and thus increasing the profit of their investment. Hence, I argue that issuers with more internal control problems will underprice more for newly issued bonds.

Hypothesis 6: *Ceteris paribus, issuers of newly issued bonds with effective internal controls experience less underpricing than issuers with ineffective internal controls.*

4.2 Research Design

4.2.1 Sample Selection

This study focuses on the underpricing of newly issued corporate bonds and the sample for this study comes from the following databases: (1) the Mergent Fixed Income Securities Database (Mergent FISD) for bond-specific information; (2) the Audit Analytics for SOX Section 404 internal control effectiveness information; (3) the COMPUSTAT for bond issuers' financial information; (4) the Center for Research in Security Prices (CRSP) for bond issuers' equity returns information; (5) the Trade Reporting and Compliance Engine (TRACE) for bond trading information.

To test Hypothesis 4, I collect data from Mergent FISD, COMPUSTAT, CRSP, and TRACE. After merging the samples from the three databases, controlling for outliers, and eliminating the observations with missing variables, I obtain 426 observations (distinct newly issued bonds) from 252 firms during the 2003-2009 period.[38] To test Hypothesis 5, I also collect data from Mergent FISD, COMPUSTAT, CRSP, and TRACE.

[38] Following Khan and Watts (2009), I delete firm years with negative total assets or book values of equity, and delete firm years with price per share below $1. In addition, I control outliers by eliminating firms in the top and bottom one percent with regard to earnings, returns, size, market-to-book ratio, and leverage.

After merging the samples from the three databases, controlling for outliers, and eliminating the observations with missing variables, I obtain 378 observations (distinct newly issued bonds) from 214 firms for further analysis during the 2003-2009 period.[39] To test Hypothesis 6, I collect data from Mergent FISD, Audit Analytics, COMPUSTAT, and TRACE. After merging the samples from the three databases and eliminating the observations with missing variable, I obtain 400 observations (distinct newly issued bonds) from 254 firms during the 2005-2009 sample period.[40] To control for the effect of outliers, I winsorize all the continuous variables in the three samples at the top and bottom one percent. I eliminate variable coupon and zero coupon bonds, as well as perpetual bonds.[41] Bonds issued by public financial firms (SIC codes 6000-6999) are excluded. Since financial firms operating under different regulations, they have different debt financing activities than industrial firms (Khurana and Raman 2003; Bessembinder et al. 2009). Dick-Nielsen (2009) points out that 7.7 percent of all reports in TRACE are errors. Accordingly, I clean TRACE database by deleting agency transaction and input errors as suggested by Dick-Nielsen (2009).

4.2.2 Empirical Model

Based on prior research (Diamond 1989; Ellul and Pagano 2006; Cai et al. 2007), I use the following empirical models to test the effect of conservative reporting and SOX internal control effectiveness on the underpricing of newly issued corporate bonds:

[39] Following Beaver and Ryan (2000), I control the effect of outliers by winsorizing book-to-market ratio at 0 and 4.
[40] Small sample size is common for studies pertaining to bond markets (Dhillon and Johnson 1994; Shi 2003). One possible explanation is that a large portion of bond issuers are non-public firms and that there is no equity return information available for these non-public bond issuers.
[41] According to Bessembinder et al. (2009), these bonds tend to be unique and to behave more like equities.

$$AbReturn_{ijt} = \alpha_1 + \beta_1 Quality_{it} + \beta_2 ROA_{it} + \beta_3 IssueSize_{ijt} + \beta_4 Maturity_{ijt} + \beta_5 Rating_{ijt} + \beta_6 IssueHistory_{it} + \beta_7 OfferingD_{ijt} + \beta_8 IssueExchange_{ijt} + \text{Industry Dummies} + \text{Year Dummies} + \varepsilon_{ijt} \quad (8)$$

According to Petersen (2009), the standard errors calculated by an OLS regression for panel data could be biased due to the within-firm, overtime, or across-firm residual correlation for a given time. Thus, I correct the standard errors of the OLS regression for firm-level clustering as well as for heteroscedasticity.

Dependent Variable

AbRetrun: Defined as the treasury-adjusted, daily-average, price-weighted abnormal bond return of the first trading date after the offering date.[42] First, I calculate daily average, price-weighted bond return. Second, I use the difference between daily average, price-weighted bond return and contemporaneous U.S. Treasury return with the similar coupon rate and maturity to measure abnormal bond return. I require that all bonds included in my sample have at least one transaction within 10 trading days of the offering date.[43] In addition, all trades included in my sample have at least $100000 par value (keep only institutional trades).[44] Next section 'Measurement of Variable' provides

[42] Consistent with Easton, Monahan and Vasvari (2009), I use daily-average abnormal bond return. However, due to the illiquidity feature of public bond, Cai et al. (2007) use abnormal bond return as proxy for underpricing without adjusting the time lag between offering date and first trading date. I use abnormal bond return as robustness check and the results are unchanged.

[43] I also restrict the first trading date within 5 trading days of the offering date. The results are unchanged and reported in robustness check section.

[44] According to Bessembinder et al. (2009), keeping only institutional trades and weighting daily trades by price increases the power of the tests to detect abnormal bond return, when compared to keep all trades (institutional and non-institutional trades) and use the last price of the day. In robustness check section, I keep all trades and use the last price of the day to calculate abnormal bond return. The main findings are robust.

more detailed description of the approach to calculate abnormal bond return. The subscript *ijt* means bond *j* for firm *i* in year *t*.

Tested Variable

I employ three proxies for financial reporting quality (*Quality*). 1) *ConCon*: firm-year conditional conservatism measure introduced by Khan and Watts (2009). 2) *UnCon*: firm-year unconditional conservatism measure introduced by Beaver and Ryan (2000). 3) *SOX404D*: a dummy variable for internal control effectiveness. This variable is 1 if a newly issued bond is offered after the conclusion by an auditor under SOX Section 404 that the issuer's internal control over financial reporting are not effective, and 0 if the newly issued bond is offered after the conclusion by auditor that the issuer's internal control over financial reporting are effective.[45]

Control Variable

ROA: Return on assets of the issuer, defined as net income divided by total assets at the end of the fiscal year immediately prior to the corporate bond issuance date. A higher ROA generally implies greater profitability and I predict it is negatively related to the underpricing.

IssueSize: The natural log of the par value of the bond initially issued in millions of dollars. According to Ellul and Pagano (2006), issue size is a proxy for aftermarket liquidity. A larger issue size can have a lower underpricing due to the decreased liquidity risk. However, Cai et al. (2007) document a positive relation between issue size and

[45] This categorization is consistent with Kim et al. (2011), who investigate the effect of internal control effectiveness on private bank loan contracts.

underpricing, and suggest that issue size is more related to information problem rather than liquidity issue. Thus, I do not make predictions for the sign of issue size.

Maturity: The natural log of the number of years until the bond matures. Bond issues with longer maturity are perceived to be more risky than the issues with shorter maturity (Khurana and Raman 2003; Cai et al. 2007). Thus, maturity is expected to be positively related to the underpricing.

Rating: Credit rating by Moody's, sequentially converted to numbers from 1 (highest rating) to 5 (lowest rating), representing the ratings of Aaa, Aa, A, Baa, and Baa below. For issues without Moody's rating, Standard & Poor's rating or Fitch rating is used instead (Shi 2003). Credit rating indicates the creditworthiness of the issue and thus is expected to be positively related to the underpricing (Cai et al. 2007).

IssueHistory: Number of years the issuer in the bond market. It is defined as the year of current new bond issue minus year of initial public bond offering. Diamond (1989) suggest that the number of years the issuer has been issuing in the bond market proxies for reputation. Issuer with richer history in the bond market has better reputation and thus it is expected to be negatively related to the underpricing.

OfferingD: A dummy variable which takes the value of one if the issuer has completed the public bond offering in the last twelve months and 0 otherwise. Cai et al. (2007) use bookbuilding process to explain the underpricing and argue that less underpricing for issuers that just went through the bookbuilding process. It is expected to be negatively related to the underpricing.

IssueExchange: A dummy variable which takes the value of one if the issuer lists the bond on the NYSE and 0 otherwise. Cai et al. (2007) use winner's curse argument as

alternative explanation for the underpricing and suggest that greater underpricing for bonds listed on the NYSE relative to those listed on the dealer market. This variable is expected to be positively related to the underpricing.

I include industry dummies and year dummies in the regression model to further control for the potential differences in issuer and issue features across industries and over time.

4.2.3 Measurement of Variable

Abnormal Bond Return

Consistent with Easton, Monahan and Vasvari (2009), I use following two steps to calculate treasury-adjusted bond return as the proxy for abnormal bond return. First, price-weighted bond return (BR_{ijt}) in period *t* for bond *j* issued by firm *i* is calculated as follows:

$$BR_{ijt} = (WP_{ijt} - OP_{ijt-n}) / OP_{ijt-n} \quad (9)$$

Where WP_{ijt} is the weighted average invoice price of bond *j* issued by firm *i* for transactions that occurs on day *t* (day *n-t* is the offering date and day *t* is the first trading date after the offering date). To calculate bond return, I only keep bonds that traded at least once within 10 trading days after the offering date.[46] Invoice bond prices are computed as the quoted price (also called the flat price) plus the accrued interest (AI_{ijt}) from the offering date. If the accrued interest is missing, I use following alternative:

$$AI_{ijt} = c_{ijt} * (D_{ijt} / 360) \quad (10)$$

[46] If bond trade more that one day within 10 trading days, I retain the trading date that is closest to the offering date.

Where c_{ijt} is the coupon rate for bond *j* issued by firm *i* and D_{ijt} is the number of days between the trading date and offering date.

Second, I adjust the bond return by subtracting the contemporaneous U.S. Treasury return (risk-free return).[47] I match the new bond issues in the Mergent FISD database with the U.S. Treasury bond in the CRSP database by annual coupon rate and maturity year. Due to the illiquidity of bond, the event windows vary in length. I convert the treasury-adjusted, price-weighted bond return into daily average by dividing the number of days between the trading date and offering date (Easton et al. 2009).

The methods to measure conditional and unconditional conservatism are discussed in Section 3.2.3.

4.3 Empirical Result

4.3.1 Univariate Analysis

Table 10 provides descriptive statistics of the observations for the conditional conservatism sample, the unconditional conservatism sample, and the internal control sample by year. The sample period varies across the three samples (2003-2009, 2003-2009, and 2005-2009 for the conditional conservatism, unconditional conservatism, and internal control samples respectively). In total there are 426 observations in the conditional conservatism sample, 378 observations in the unconditional conservatism sample, and 400 observations in the internal control sample. Though the conditional and unconditional conservatism samples are based on the same sample period, the sample

[47] This eliminates the variation in bond returns that attribute to macro-economic level changes, such as interest rate.

sizes for these two samples are different. This is due to the different methods used to calculate conditional conservatism and unconditional conservatism measures.[48]

[Insert Table 10 about here]

Table 11 summarizes the descriptive statistics for the conditional conservatism, unconditional conservatism, and internal control samples. Since my sample has both firm-level and bond-level variables, the number of observations used to calculate the descriptive statistics differ between the two types of variables. According to Panel A of Table 11, the average abnormal return for the conditional conservatism sample is 0.0079 (about 0.8 percent). The minimum and maximum abnormal returns are -1.45 and 6.89 percent respectively. The average degree of conditional conservatism is -0.0978, with a standard deviation of 0.1399. The average ROA of the bond issuer is 5.1%. The mean credit rating is 3.74, representing non-investment grade as rated by Moody's. The mean (median) issue history is 14 (10) years. Approximately, it means half of the issuers have been in the bond market for about 10 years at the time of the new issuance. For about 48% of the newly issued bonds, the issuers have just completed the public bond offering within one year before the issuance date. 22.3% of the newly issued bonds are listed in NYSE. Panel B of Table 11 indicates that the average abnormal return for the unconditional conservatism sample is 0.8 percent. The minimum and maximum abnormal returns are -1.96 and 8.28 percent respectively. The average degree of unconditional conservatism is 0.4357, with a standard deviation of 0.271. Panel C of Table 11 provides the descriptive statistics for the internal control sample. About ninety percent of bonds

[48] As discussed in Section 3.2.3, to measure conditional conservatism, I only need the current year's stock return; whereas to calculate unconditional conservatism, I need annual returns from the past six years. Thus, the number of observations in the unconditional conservatism sample is less than those in the conditional conservatism sample.

are issued by issuers with effective internal control over financial reporting, which is consistent with Kim et al.'s (2011) descriptive statistics that about 87% of sample firms have effective internal controls. The average abnormal return for internal control sample is also about 0.8 percent. The minimum and maximum abnormal returns are -2.66 and 10.51 percent respectively.

[Insert Table 11 about here]

Table 12 and 13 represent correlation matrices for conservatism and internal control samples respectively. Panel A of Table 12 suggests that abnormal return is positively correlated with the firm-year conditional conservatism measure. It is consistent with what signaling argument predicts (Hypothesis 4). Also, abnormal return correlates negatively with ROA and correlates positively with credit ratings, which are consistent with my predictions. As indicated in Panel B of Table 12, the correlation between abnormal return and firm-year unconditional conservatism is positive, but it is not significant. Table 13 further indicates the negative relation between abnormal return and maturity, which means issue with longer maturity will experience less underpricing. In addition, it reports the negative but insignificant correlation between abnormal return and internal control effectiveness dummy.

[Insert Table 12 & 13 about here]

4.3.2 Multivariate Analysis

Equation (1) is the main regression model, in which I regress the abnormal return on financial reporting quality (proxied by the conditional conservatism measure, the unconditional conservatism measure, and the internal control dummy respectively), firm-

level and bond-level controls, and industry and year dummies. Panel A of Table 14 summarizes the OLS regression results with conditional conservatism as a proxy for financial reporting quality. The coefficients for conditional conservatism in both model specifications are statistically significant. In Specification 1, I exclude industry dummies and year dummies. The full model, Specification 2, contains all independent variables. My discussion is focused on the empirical results of the full model—Specification 2. The coefficient for conditional conservatism (*ConCon*) is positive (0.0165; $p < 0.01$). Since the standard deviation of the conditional conservatism measure is 0.14, I interpret this coefficient as follows: On average, one standard deviation increase in *ConCon* will result in an increase of 0.23 (1.65*0.14) percent in the underpricing. The positive coefficient for conditional conservatism supports Hypothesis 4. Hence, my empirical result does support signaling argument for the effect of conditional conservatism on bond underpricing. Overall, the independent variables in Specification 2 explained 12.39 percent of the variance of the dependent variable (abnormal return) and the model is significant at the 0.001 level.[49]

[Insert Table 14 about here]

Some control variables have the expected signs for their coefficients. The coefficients for ROA (-0.0264) is negative and only significant at the 0.1 level. Since the standard deviation of ROA is 0.09, I interpret the coefficient for ROA to mean that one standard deviation increase in ROA will result in a decrease of 0.24 (2.64*0.09) percent in the underpricing. In addition, the coefficient for issue size is positive (0.0044; $p < 0.01$). This means that one standard deviation (0.7) increase in issue size will result in an

[49] Low adjusted R^2 is common for studies pertaining to bond underpricing (Datta et al. 1997; Cai et al. 2007). The adjusted R^2 range of Cai et al (2007) models is 1.7 percent to 10.1 percent. The adjusted R^2 range of Datta et al. (1997) models is 5.2 percent to 11.1 percent.

increase of 0.31 (0.44*0.7) percent in the underpricing. The positive coefficient on issue size is consistent with Cai et al. (2007) finding and supports the argument that issue size relates more to information problem. The coefficient for credit rating is positive (0.0027; $p < 0.01$). It means, on average, that when the credit rating is upgraded (downgraded) to the next category, the underpricing of newly issued bonds will decrease (increase) by 0.27 percent. This finding reinforces Cai et al. (2007) argument that credit rating captures the riskiness of the issue and it is positively related to the underpricing. Consistent with Cai et al. (2007), I do not find significant differences in the underpricing between issues listed in NYSE and dealer market. In addition, the coefficients for issue history (*IssueHistory*) and offering dummy (*OfferingD)* are not significant. Thus the results do not support Diamond (1989) reputation argument for bond issue history and Sherman and titman (2002) bookbuilding process argument for issuers that just offered new bond issues within one year.

Panel B of Table 14 reports the empirical results that I use to test Hypothesis 5. The coefficients for unconditional conservatism (*UnCon*) are positively significant for both model specifications, which is consistent with signaling argument (Hypothesis 5) that issuers with more unconditional conservatism reporting distinguish themselves with those with less unconditional conservatism reporting through more underpricing of newly issued corporate bonds. Specifically, in Specification 2, the coefficient for unconditional conservatism (*UnCon*) is positive (0.0107; $p < 0.05$). Since the standard deviation of the unconditional conservatism measure is 0.271, I interpret this coefficient to mean that, on average, one standard deviation increase in *UnCon* will result in an increase of 0.29 (1.07*0.271) percent in the underpricing. Overall, the independent variables in

Specification 2 explain 16.05 percent of the variance of the dependent variable (abnormal return) and the model is significant at the 0.001 level. In addition, the coefficients for ROA, issue size, and credit rating are statistically significant with the predicted signs. Since the dependent variable and all the control variables are the same for conditional and unconditional conservatism regressions, I do not interpret further the coefficients for control variables.

Table 15 reports the results of the OLS regression of the abnormal return on the internal control effectiveness dummy (*SOX404D*), on firm-level and bond-level controls, and on industry and year dummies. The coefficients for the internal control effectiveness dummy in both specifications are insignificant, which means there is no difference in the underpricing of newly issued bonds between issuers with and without internal control problems. Thus, my Hypothesis 6 is not supported by the empirical evidence. In Specification 2, only the coefficient for ROA is significant (-0.0371; $p < 0.01$). Overall, the independent variables in Specification 2 explain 7.35 percent of the variance of the dependent variable (abnormal return) and the model is significant at the 0.001 level.

[Insert Table 15 about here]

4.4 Robustness Check

My datasets contain multiple newly issued bonds for a single firm for one and the same fiscal year. Since multi-level observations violate the assumption of residual independence at the lower bond-level, the standard errors from the ordinary least square (OLS) regression may be biased. Accordingly, I use hierarchical linear modeling (HLM) to handle this multi-level observation problem. Unlike OLS, HLM uses the maximum

likelihood method to estimate coefficients. In my case, HLM accounts for the within-firm correlation among newly issued bonds by the same firm for one and the same year, and adjusts the estimated covariance matrix. HLM is widely used in social science research with multi-level observations (Ang et al. 2002; Seibert et al. 2004). However, I also notice that, on average, a corporation issues bonds less than two times during the sample period. This means that the number of within-firm observations is very limited.[50] In fact, only within-firm and within-year observations violate the independence assumption at the bond-level. Thus, I may overestimate the effect of intra-firm correlation among bonds issued by the same firm by employing the HLM regression. As a result, I only use HLM regression to conduct a robustness check. The results are summarized in Table 16. Overall, abnormal return is positively correlated with conditional conservatism and unconditional conservatism, and not significantly correlated with internal control effectiveness dummy. Thus, the main findings are robust with the HLM regression.

[Insert Table 16 about here]

In the main analysis, bond trades included in my sample have at least $100000 par value, which means non-institutional trades are excluded. As noted by Bessembinder et al. (2009), keeping only institutional trades increases the power of the tests to detect abnormal bond return, when compared to keep all trades (institutional and non-institutional trades) regardless of the par value of each trade. The underlying assumption is that institutional investors are more likely taking into account issuers' financial reporting quality when evaluating the newly issued bonds. However, individual investors are also important. As suggested by information and signaling arguments, motivating

[50] This is different from social science research that has many within-level observations. For example, a research investigating the mathematical skills of high school students within a region could have school-level and student-level variables, which allows for many observations at the within-school level.

individual investors to participate in the bond market could be the explanation of the underpricing. As a robustness check, I keep all trades to calculate abnormal bond return. The main findings are robust and summarized in Table 17.

[Insert Table 17 about here]

Existing empirical studies choose different lengths of event window to calculate abnormal bond returns (Cai et al. 2007; Easton et al. 2009). I use 10 trading days within the offering date as event window in the main analysis. However, relative longer event window may create the biased estimation of abnormal bond return. Cai et al. (2007) choose relative shorter event window (five trading days) to measure abnormal return. I also restrict the event window within the 5 trading days after the offering date as robustness check. The results are consistent with the main multivariate analysis and reported in Table 18.

[Insert Table 18 about here]

Bessembinder et al. (2009) compare the empirical power and specification of test statistics that is designed to detect abnormal bond returns among frequently used methods of calculating abnormal bond returns. The authors find that abnormal bond return measured by weighting each trade by its size and eliminating non-institutional trades (par value of the trade >= $100,000) increases the power of the test. Following the suggestions by Bessembinder et al. (2009) and Easton et al. (2009), I use "daily-average, price-weighted, trade >= $100,000" method to calculate abnormal bond return in the main analysis. However, prior studies also mention alternative approaches to measure abnormal bond returns. Bessembinder et al. (2009) introduce a method using the last price of the first trading date instead of the weighted price and Cai et al. (2007) measure

abnormal bond return without adjusting daily-average because of the illiquidity feature of public bond. Combining the above two alternative methods, I use the following three approaches to calculate abnormal bond returns: "daily-average, last price, trade >= $100,000"; "price-weighted, trade >= $100,000"; and "last price, trade >= $100,000". The results of the OLS regressions with the alternative measures for abnormal returns are reported in Table 19 and the main findings are unchanged.

[Insert Table 19 about here]

Khan and Watts (2009) firm-year conditional conservatism measure could be bias. Because C_score reflects firm characteristics such as being young, having high growth and high leverage, which could positively related to the cost of debt. Following Givoly and Hayn (2000) and Zhang (2008) I use negative skewness of earnings over skewness of cash flow as an alternative proxy for conditional conservatism measure. Beaver and Ryan measure of unconditional conservatism has been criticized in the literature (Roychowdhury and Watts 2007). One limitation is that this measure can be picking up high growth firms just as much as it is picking up unconditional conservatism. Alternatively, I use Penman and Zhang (2002) measure as proxy for unconditional conservatism. Specifically, this measure of unconditional conservatism is calculated as the ratio of LIFO reserves plus hidden R&D and advertising reserves resulting from the application of unconditional conservatism to total assets. The findings are unchanged compared to the results in the main multivatiate analysis, which are reported in Table 20.

[Insert Table 20 about here]

4.5 Summary

The focus of this study is the relationship between financial reporting quality and the underpricing of newly issued corporate bonds. More specifically, I investigate following research questions: (1) Whether and to what extent does conditional conservative reporting influence the underpricing of newly issued corporate bonds? (2) Whether and to what extent does unconditional conservative reporting affect the underpricing of newly issued corporate bonds? (3) Whether and to what extent does internal control effectiveness influence the underpricing of newly issued corporate bonds? The empirical results indicate that conditional conservative reporting relates to more abnormal return of newly issued bonds, which is consistent with the signaling argument (Hypothesis 4). Consistent with signaling argument for unconditional conservatism (Hypothesis 5), empirical findings also suggest that unconditional conservative reporting relates to more abnormal return of newly issued bonds. However, the empirical result indicates that there is no difference in terms of abnormal return between issuers with and without effective internal controls, which does not support my prediction in Hypothesis 6. My empirical results continue to hold with some robustness checks. Specifically, I use HLM regression instead of OLS regression, include all trades, use shorter trading period, choose alternative abnormal bond return measures, use alternative proxies for conservatism measures, and control the effect of current subprime crisis.

This study contributes to the academic literature along following aspects. First, it complements the bond underpricing literature by using financial reporting quality as proxy for information risk and builds up information related arguments to explain the underpricing of newly issued corporate bonds. Second, this study extends the

conservatism literature by providing theoretical arguments that differ from the traditional debt contracting efficiency view of unconditional conservative reporting (Ball and Shivakumar 2005). Third, this study contributes the SOX internal control literature by investigating the economic consequences of internal control effectiveness under SOX provisions on the underpricing of newly issued corporate bonds.

Chapter 5 Conclusion and Discussion

The interface between financial reporting and debt financing has recently emerged as a fruitful focus for research (Ball et al. 2008a; Graham et al. 2008; Wittenberg-Moerman 2008; Zhang 2008; Sunder et al. 2009; Nikolaev 2010; Costello and Wittenberg-Moerman 2011; Kim et al. 2011). This stream of research is consistent with the argument that it is debt markets rather than equity markets shape financial reporting (Lev 1989; Ball and Shivakumar 2008; Ball et al. 2008b). Holthausen and Watts (2001) also indicate that the relevance of the accounting numbers would be different between equity and debt investors. However, despite the importance of public bond markets for U.S. corporate financing, and well-documented differences between public and private debt financing, current research largely focuses on the effect of financial reporting quality on private bank loan contracting. Prior studies only use financial reporting quality proxies (audit quality, analyst forecast, and operating accruals) that do not directly relate to the debt contracting context to explain the price terms of public bond financing (Mansi et al. 2004; Bharath et al. 2008; Mansi et al. 2011). This study complements the bond financing literature by using a financial reporting attribute (conservatism) that is closely related to debt financing context to explain the price terms of corporate bond financing patterns. In this dissertation, I develop alternative arguments of conservatism that are exclusive to the public bond market and that cannot be replicated to the equity market or the private debt market. With these arguments, I investigate the effects of financial reporting quality (proxied by accounting conservatism and internal control effectiveness) on the yield spread of new corporate bond issues and the underpricing of newly issued corporate bonds.

In Chapter 2, I discuss the background of accounting conservatism, internal controls, and corporate bond markets. More specifically, in Section 2.1, I summarize the history and definition of conservatism, the contracting demand for conservatism, and the classification of conservatism. In Section 2.2, I discuss the institutional background of internal controls with the focus of SOX internal control provisions and review the empirical evidence with regard to internal control effectiveness. In Section 2.3, I summarize the basic feature of corporate bond markets and compare the differences between private bank loan and public bond financing. Over all, I conclude from the prior literature that conservative reporting and internal control effectiveness could be good proxies for financial reporting quality and the literature on public bond financing is relatively underdeveloped.

In Chapter 3, I investigate the main effect of accounting conservatism and the moderating effect of internal control effectiveness on the yield spread of new corporate bond issues. Empirical results indicate that conditional conservatism relates to a higher yield spread of new corporate bond issues, which means issuers with more conditional conservative reporting have to pay higher risk premium for new corporate bond issues. This finding goes counter to the debt contracting efficiency argument but is consistent with my discussions of the potential negative effect of conditional conservatism reporting (e.g., cookie-jar reserves, low information content of financial reporting, and costly private debt covenant violation). Overall, my empirical finding suggest that bond markets participants will negatively respond to conditional conservatism, which is corroborated by Chan et al. (2009) results that conditional conservative reporting lowers the cost of equity. I predict that unconditional conservative reporting increases the

"quality" of assets and decreases the default risk of bond issuers. Consistent with this anti-debt contracting efficiency argument of unconditional conservatism, empirical findings suggest that bond market participants positively value issuers' unconditional conservative reporting with regard to risk premiums. Thus issuers with more unconditional conservative reporting can issue bond at lower yield spread. Finally, I take into consideration the moderating effect of internal controls on the relation between conservatism and yield spread of new corporate bond issues. My argument is that effective internal controls prevent managers' opportunistic behaviors and increase the perceived quality of accounting information, and thus bond market participants will positively value effective internal controls. I document that ineffective internal controls enhance the effect of conditional conservatism to increase the yield spread of new corporate bond issues. However, empirical results only provide weak evidence that ineffective internal controls weaken the effect of unconditional conservatism to increase the yield spread of new corporate bond issues.

In Chapter 4, I investigate the effect of accounting conservatism and internal control effectiveness on the underpricing of newly issued corporate bonds. Empirical results indicate that conditional conservatism relates to more abnormal return of newly issued corporate bonds, which supports signaling argument for conditional conservatism. It suggests that, in order to distinguish them from issuers with less conditional conservatism, bond issuers with more conditional conservative reporting would issue bonds at lower price. Also consistent with a signaling argument for unconditional conservatism, empirical findings suggest that bond issuers with more unconditional conservative reporting experience larger abnormal returns for the newly issued corporate

bonds, which means issuers with more unconditional conservative reporting would issue bond at lower price to signal the information advantage. I find no significant difference in terms of the underpricing of newly issued corporate bonds between issuers with and without effective internal controls, which is not consistent with my prediction. Overall, this study indicates that issuers with more conservative reporting issue bonds at a lower price.

Besides the contributions to the academic literature, this dissertation has the following practical implications. From a standard-setting and regulatory perspective, the findings that conditional conservative reporting increases the yield spread of new corporate bond issues, and that conditional conservative reporting increases the underpricing of newly issued corporate bonds provide further supports to the recent trend toward fair value recognition in financial statements (Ryan 2008; Song et al. 2010). Also, policymakers may use the empirical evidence that ineffective internal controls enhance the effect of conditional conservatism to increase the yield spread of new corporate bond issues to defend the view that SOX internal control provisions actually lower the cost of capital for effective internal control firms (U.S. House of Representatives 2005). Because the assessment of cost/benefit debate of SOX internal control provisions need to go beyond an equity holder's perspective and consider financial stakeholders who contract on the basis of financial statements. From a bond issuer and broker perspective, the empirical results implicitly suggest that when negotiating the yield spread of new corporate bond issues, related parties might take issuer's conservatism and internal controls into consideration. From an auditing perspective, auditors can learn from the finding that bond market participants value accounting conservatism differently in

comparison to what equity and private debt market participants do. Thus auditors would take capital structure into consideration when auditing their clients' financial reports.

This dissertation has several limitations. First, my sample may not be representative of all public bond financings in the United States. However, I am not aware of any particular bias in the attributes of the sample firms, apart from the fact that they do not include privately-held firms. Second, the time period for the internal control sample is relative short. It does not include observations from 1997 to 1999, an era marked by the Asian, Russian and Long-Term Capital Management crises, all of which affect bond markets. However, my sample period captures recent events (e.g., 2008-2009 subprime crisis) that also affect bond markets. Third, one limitation of the measures for conservatism is that these measures are all based on past financial reporting information. However, debt contract is focus on the commitment to improve future financial reporting quality. The existing literature only uses past conservative reporting to predict future conservatism practice. Fourth, I only focus on the yield spread of new corporate bond issues and the underpricing of newly issued corporate bonds, which are but two measures of the cost of debt. Future research may want to extend the analysis to the relation between financial reporting quality and other bond market attributes, such as the liquidity and abnormal return of corporate seasoned bonds, and bond analysts behaviors (Chen, Lesmond and Wei 2007; DeFond, Hung, Karaoglu and Zhang 2008; Easton et al. 2009; De Franco, Vasvari and Wittenberg-Moerman 2009).

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Table 1
Descriptive Statistics by Year

Issue Year	Conditional Conservatism Sample		Unconditional Conservatism Sample	
	Frequency	Percent	Frequency	Percent
1991	151	5.88	138	5.76
1992	190	7.4	226	9.43
1993	149	5.8	211	8.81
1994	96	3.74	162	6.76
1995	93	3.62	94	3.92
1996	35	1.36	23	0.96
1997	163	6.34	111	4.63
1998	217	8.45	159	6.64
1999	114	4.44	140	5.84
2000	196	7.63	206	8.6
2001	65	2.53	49	2.05
2002	114	4.44	107	4.47
2003	222	8.64	152	6.34
2004	165	6.42	104	4.34
2005	111	4.32	84	3.51
2006	36	1.4	35	1.46
2007	43	1.67	43	1.79
2008	148	5.76	127	5.3
2009	261	10.16	225	9.39
Total	2569	100	2396	100

Table 2
Descriptive Statistics of Conservatism Samples

Panel A Conditional Conservatism Sample

Variable	N	Mean	Median	Std Dev	Minimum	Maximum
YieldSpread	2569	164.07	118	218.81	-345.5	850
ConCon	1475	-0.0449	-0.0542	0.1804	-0.4813	0.4164
IssuerSize	1475	7.77	7.77	1.61	4.51	11.88
ROA	1475	0.0199	0.0374	0.1032	-0.4003	0.1939
Leverage	1475	0.2638	0.2521	0.1694	0	0.6669
SOX404D	421	0.1259	0	0.3321	0	1
Maturity	2569	2.22	2.3	0.6284	0.6931	3.43
IssueSize	2569	11.42	12.07	1.98	5.45	14.22
Rating	2569	0.2153	0	0.4111	0	1
BusiCycle	2569	138.9	136	46.61	65	268
RedeemD	2569	0.5851	1	0.4928	0	1
PutD	2569	0.0646	0	0.2459	0	1
ConvertD	2569	0.1783	0	0.3828	0	1
415RegD	2569	0.6193	1	0.4857	0	1
144aRegD	2569	0.3025	0	0.4594	0	1

Panel B Unconditional Conservatism Sample

Variable	N	Mean	Median	Std Dev	Minimum	Maximum
YieldSpread	2396	154.05	122.1	189.1	-410	747.5
UnCon	1064	0.3435	0.3508	0.3515	-1.04	1.37
IssuerSize	1064	8.23	8.24	1.46	5.47	12.09
ROA	1064	0.0315	0.0434	0.089	-0.3066	0.1958
Leverage	1064	0.2599	0.2481	0.1661	0	1.07
SOX404D	357	0.1149	0	0.3193	0	1
Maturity	2396	2.19	2.3	0.6544	0.6931	3.47
IssueSize	2396	10.76	11.83	2.48	5.07	14.22
Rating	2396	0.2542	0	0.4355	0	1
BusiCycle	2396	137.37	134	46.86	65	268
RedeemD	2396	0.5271	1	0.4994	0	1
PutD	2396	0.0488	0	0.2156	0	1
ConvertD	2396	0.1106	0	0.3137	0	1
415RegD	2396	0.7483	1	0.4341	0	1
144aRegD	2396	0.1974	0	0.3981	0	1

Refer to Appendix 1 for the definition of the variables.

Table 3
Correlation Matrix for Conservatism Samples

Panel A Conditional Conservatism Sample

	YieldSpread	IssuerSize	ROA	Leverage	Maturity	IssueSize	Rating	BusiCycle
IssuerSize	0.048*							
ROA	-0.0195	0.2273***						
Leverage	0.2899***	-0.0008	-0.1553***					
Maturity	-0.1867***	-0.004	0.0878***	-0.1241***				
IssueSize	0.1314***	-0.0157	0.0411*	0.0476*	0.0383			
Rating	0.0865***	0.3732***	0.1875***	-0.1259***	-0.0397*	0.327***		
BusiCycle	0.389***	0.1916***	-0.0229	0.0842***	-0.1501***	0.3124***	-0.38***	
ConCon	0.1962***	-0.5509***	-0.3155***	0.3137***	-0.1004***	0.1128***	-0.1747***	0.2066***

Panel B Unconditional Conservatism Sample

	YieldSpread	IssuerSize	ROA	Leverage	Maturity	IssueSize	Rating	BusiCycle
IssuerSize	0.0553**							
ROA	-0.0424*	0.1217***						
Leverage	0.1896***	-0.0747***	-0.2204***					
Maturity	-0.1468***	-0.0615**	0.0612**	-0.1011***				
IssueSize	0.0755***	0.0045	0.1394***	-0.4496***	0.1198***			
Rating	0.0888***	0.3512***	0.2136***	-0.2293***	-0.0439*	0.4364***		
BusiCycle	0.4224***	0.1959***	0.0247	-0.0522*	-0.1154***	0.3074***	-0.3882***	
UnCon	0.0445*	0.2176***	0.276***	0.2084***	-0.0313	-0.0609**	0.1299***	0.0474*

Note: *, **, *** significant at the 0.05, 0.01, 0.001 level respectively.

Table 4
Conservatism and Risk Premium

Panel A OLS Regression for Conditional Conservatism Sample
Dependent Variable: Yield Spread

Variables	Predicted Sign	Specification 1		Specification 2	
		Coefficient	T-value	Coefficient	T-value
Intercept	?	263.45	4.05***	241.3	1.09
ConCon	-	**200.5**	**4.99*** **	**228.04**	**1.71***
SOX404D	+	-	-	8.47	0.29
ConCon*SOX404D	+	**-**	**-**	**267.54**	**2.34****
IssuerSize	-	-12.35	-3.35***	-0.039	-0.01
ROA	-	-222.85	-4.52***	-271.41	-2.13**
Leverage	+	109.7	3.81***	-77.94	-0.94
Maturity	+	-14.95	-2.98**	-21.41	1.81*
IssueSize	+/-	0.14	0.07	-10.25	-0.58
Rating	-	-97.36	-9.98***	-238.26	-7.37***
BusiCycle	+	1.55	8.89***	2.64	8.73***
RedeemD	+	57.26	6.61***	49.38	1.38#
PutD	-	-154.4	-9.37***	-111.3	-2.26**
ConvertD	-	-318.39	-21.01***	-432.99	-10.13***
415RegD	-	-77.76	-4.51***	-7.32	-0.12
144aRegD	+	8.45	0.47	21.95	0.36
Industry Dummy		Yes		Yes	
Year Dummy		Yes		Yes	
# of Observation		2569		421	
Model Fit		F-value: 106.62***		F-value: 46.06***	
Adjusted R^2		0.6519		0.7208	

Table 4 (Cont.)
Conservatism and Risk Premium

Panel B OLS Regression for Unconditional Conservatism Sample
Dependent Variable: Yield Spread

Variables	Predicted Sign	Specification 1		Specification 2	
		Coefficient	T-value	Coefficient	T-value
Intercept	?	294.45	5.33***	305.28	1.26
Uncon	**-**	**-65.28**	**-3.59*** **	**-38.67**	**-0.71**
SOX404D	+	-	-	-43.97	-0.88
Uncon*SOX404D	+	-	-	**128.21**	**1.43#**
IssuerSize	-	-20.26	-5.86***	-26.45	-2.41**
ROA	-	-257.69	-3.63***	-390.39	-2.34**
Leverage	+	124.13	5.43***	85.93	1.04
Maturity	+	-9.04	-1.72*	-18.56	-1.58#
IssueSize	+/-	1.8	0.84	4.41	0.23
Rating	-	-86.02	-8.37***	-213.22	-6.42***
BusiCycle	+	1.38	7.77***	2.48	8.38***
RedeemD	+	42.82	5.12***	48.39	1.33#
PutD	-	-180.51	-8.41***	-195.93	-3.15***
ConvertD	-	-277.82	-13.7***	-371.14	-7.97***
415RegD	-	-76.39	-3.82***	-38.56	-0.68
144aRegD	+	3.4	0.16	-15.83	-0.28
Industry Dummy		Yes		Yes	
Year Dummy		Yes		Yes	
# of Observation		2396		357	
Model Fit		F-value: 60.31***		F-value: 31.82***	
Adjusted R^2		0.5927		0.7037	

Note: Standard errors in the OLS regression are corrected for firm-level clustering, and by White's heteroscedasticity-consistent estimator. #, *, **, *** significant at the 0.1, 0.05, 0.01, 0.001 level respectively (two-tailed if sign not predicted).

Table 5

Robustness Check with HLM Regression and Alternative Conditional Conservatism Measure

Yield Spread and Conditional Conservatism

Variables	Predicted Sign	HLM Regression				Alternative Conditional Conservatism Measure			
		Coefficient	T-value	Coefficient	T-value	Coefficient	T-value	Coefficient	T-value
Intercept	?	350.86	4.39***	296.01	1.64*	348.45	5.67***	-445.13	1.82#
ConCon	**-**	**99.18**	**3.63*** **	**212.4**	**2.07***	**3.63**	**3.73*** **	**2.35**	**1.95***
SOX404D	+	-	-	23.59	0.8	-	-	-7.52	-0.23
ConCon*SOX404D	**+**	**-**	**-**	**297.24**	**2.36****	**-**	**-**	**17.27**	**1.77***
IssuerSize	-	-21.19	-5.68***	3.54	0.29	-24.42	-8.46***	-2.13	-0.18
ROA	-	-211.99	-6.1***	-188.05	-1.94*	-228.47	-4.41***	-299.26	-2.38**
Leverage	+	121.45	5.17***	-15.48	-0.22	164.39	5.84***	15.73	0.2
Maturity	+	-4.92	-1.18	-5.94	-0.64	-16.32	-3.23**	-15.11	-1.25
IssueSize	+/-	-1.93	-0.91	-18.81	-1.44#	-1.05	0.54	-11.48	-0.64
Rating	-	-66.8	-8.72***	-184.4	-6.86***	-100.02	-10.3***	-133.07	-7.39***
BusiCycle	+	1.56	15.85***	2.75	13.7***	1.58	9.01***	2.89	9.7***
RedeemD	+	34.17	5.46***	4.78	0.19	58.28	6.65***	-11.93	-0.31
PutD	-	-157.66	-12.7***	-138.39	-3.54***	-155.04	-9.44***	-47.26	-0.95
ConvertD	-	-294.43	-31.7***	-395.31	-13.8***	-323.18	-20.6***	-437.95	9.58***
415RegD	-	-70.51	-7.16***	-35.59	-1.11	-79.87	-4.63***	-44.67	-0.86
144aRegD	+	-13.73	-1.37#	-28.72	-0.86	15.57	0.86	35.87	0.67
Industry Dummy		Yes		Yes		Yes		Yes	
Year Dummy		Yes		Yes		Yes		Yes	
# of Observation		2569		421		2522		405	
Model Fit		Deviance: 2394.9***		Deviance: 561.4***		F-value: 162.5***		F-value: 151.04***	
Adjusted R^2		0.5691		0.7719		0.6529		0.7168	

Note: Standard errors in the OLS regression are corrected for firm-level clustering, and by White's heteroscedasticity-consistent estimator. #, *, **, *** significant at the 0.1, 0.05, 0.01, 0.001 level respectively (two-tailed if sign not predicted).

Table 6
Robustness Check with Exclude Rating and Exclude Convertible Bond
Yield Spread and Conditional Conservatism

Variables	Predicted Sign	Exclude Rating				Exclude Convertible Bond			
		Coefficient	T-value	Coefficient	T-value	Coefficient	T-value	Coefficient	T-value
Intercept	?	210.98	3.8***	61.66	0.25	183.39	2.95**	-90.35	-0.39
ConCon	**-**	**245.03**	**6.75*** **	**380.53**	**2.56****	**210.93**	**4.9*** **	**248.56**	**2.08***
SOX404D	+	-	-	13.18	0.4	-	-	-5.27	-0.16
ConCon*SOX404D	**+**	**-**	**-**	**182.47**	**1.33#**	**-**	**-**	**287.27**	**2.3***
IssuerSize	-	-12.57	-3.62***	-24.01	-1.68*	-15.81	-4.01***	-19.52	-1.41#
ROA	-	-257.98	-5.38***	-299.06	-2.12*	-347.14	-4.34***	-285.7	-1.91*
Leverage	+	141.83	5.17***	24.09	0.26	112.67	3.57***	-82.43	-1.05
Maturity	+	-7.37	-1.88*	-29.04	-2.24*	0.14	0.03	-8.99	-0.79
IssueSize	+/-	2.2	1.23	11.93	0.59	0.69	0.38	7.66	0.39
Rating	-	-	-	-	-	-91.52	-9.79***	-207.23	-6.49***
BusiCycle	+	1.24	7.63***	2.52	7.64***	1.72	9.94***	2.79	9.38***
RedeemD	+	41.33	6.17***	27.64	0.78	56.01	6.84***	53.84	1.05
PutD	-	-167.22	-10.3***	-119.65	-2.24*	-170.67	-4.77***	-288.45	-3.04**
ConvertD	-	-287.12	-19.2***	-364.57	-8.7***	-	-	-	-
415RegD	-	-67.76	-4.54***	-54.47	-0.9	-30.05	-1.84*	109.38	1.5#
144aRegD	+	21.04	1.33#	47.18	0.8	89.67	4.8***	185.81	2.33**
Industry Dummy		Yes		Yes		Yes		Yes	
Year Dummy		Yes		Yes		Yes		Yes	
# of Observation		3730		427		2111		332	
Model Fit		F-value: 87.97***		F-value: 41.02***		F-value: 76.65***		F-value: 187.51***	
Adjusted R^2		0.6101		0.6578		0.6638		0.6905	

Note: Standard errors in the OLS regression are corrected for firm-level clustering, and by White's heteroscedasticity-consistent estimator. #, *, **, *** significant at the 0.1, 0.05, 0.01, 0.001 level respectively (two-tailed if sign not predicted).

Table 7

Robustness Check with HLM Regression and Alternative Unconditional Conservatism Measure

Yield Spread and Unconditional Conservatism

Variables	Predicted Sign	HLM Regression				Alternative Unconditional Conservatism Measure			
		Coefficient	T-value	Coefficient	T-value	Coefficient	T-value	Coefficient	T-value
Intercept	?	260.15	4.82***	373	1.96*	348.45	5.67***	244.73	0.88
UnCon	**-**	**-32.13**	**-2.2***	**-104.99**	**-2.17***	**-55.77**	**-3.32*****	**-15.97**	**-0.43**
SOX404D	+	-	-	-1.93	-0.04	-	-	34.05	0.91
UnCon*SOX404D	**+**	**-**	**-**	**135.26**	**1.35#**	**-**	**-**	**-78.05**	**-0.9**
IssuerSize	-	-25.96	-6.12***	-20.5	-1.72*	-27.51	-7.32***	-32.33	-2.72**
ROA	-	-215.04	-4.53***	-232.64	-1.79*	-370.37	-5.68***	-441.49	-2.88**
Leverage	+	171.34	7.43***	139.81	1.88*	97.83	4.29***	60.14	0.71
Maturity	+	4.51	1.1	5.62	0.65	-4.3	-0.7	-12.01	-1.01
IssueSize	+/-	1.94	1.1	-7.13	-0.52	-2.44	-0.91	6.27	0.31
Rating	-	-49.47	-6.4***	-152.36	-5.35***	-86.12	-8.12***	-193.45	-5.44***
BusiCycle	+	1.33	13.58***	2.48	12.86***	1.49	7.21***	2.56	8.27***
RedeemD	+	20.17	3.55***	31.14	1.22	57.53	5.9***	60.84	1.42#
PutD	-	-174.94	-12.4***	-242.03	-6.14***	-173.99	-8.05***	-190.56	-2.81**
ConvertD	-	-239.92	-21.37***	-306.96	-10.24***	-323.57	-17.1***	-375.93	-7.01***
415RegD	-	-50.79	-4.61***	-56.91	-1.62#	-60.19	-2.88**	-20.01	-0.31
144aRegD	+	-4.41	-0.37	-62.75	-1.68*	26.94	1.2	23.68	0.37
Industry Dummy		Yes		Yes		Yes		Yes	
Year Dummy		Yes		Yes		Yes		Yes	
# of Observation		2396		357		1917		326	
Model Fit		Deviance: 2027.4***		Deviance: 691.3***		F-value: 55.8***		F-value: 34.19***	
Adjusted R^2		0.4884		0.781		0.6303		0.719	

Note: Standard errors in the OLS regression are corrected for firm-level clustering, and by White's heteroscedasticity-consistent estimator. #, *, **, *** significant at the 0.1, 0.05, 0.01, 0.001 level respectively (two-tailed if sign not predicted).

Table 8
Robustness Check with Exclude Rating and Exclude Convertible Bond
Yield Spread and Unconditional Conservatism

Variables	Predicted Sign	Exclude Rating				Exclude Convertible Bond			
		Coefficient	T-value	Coefficient	T-value	Coefficient	T-value	Coefficient	T-value
Intercept	?	321.17	6.48***	110.42	0.42	258.93	4.62***	-41.93	-0.18
UnCon	**-**	**-68.52**	**-4.19*** **	**-66.79**	**-1.21**	**-69.92**	**-3.89*** **	**-123.96**	**2.78****
SOX404D	+	-	-	-22.76	-0.44	-	-	-47.08	-0.86
UnCon*SOX404D	**+**	**-**	**-**	**112.2**	**1.16**	**-**	**-**	**142.57**	**1.48#**
IssuerSize	-	-22.87	-6.74***	-53.78	-4.57***	-24.49	-7.27***	-47.89	-4.76**
ROA	-	-318.77	-4.49***	-508.01	-2.62**	-446.98	-4.88***	-375.37	-2.03*
Leverage	+	147.51	6.33***	198.63	2.33**	103.62	4.54***	61.52	0.85
Maturity	+	-1.58	-0.36	-23.59	-1.79*	1.47	0.3	2.59	0.27
IssueSize	+/-	0.86	0.46	30.04	1.46#	0.35	0.19	32.01	1.74*
Rating	-	-	-	-	-	-83.83	-8.8***	-181.95	-6.27***
BusiCycle	+	1.12	6.49	2.3	7.94***	1.6	9.44	2.71	10.15***
RedeemD	+	37.16	5.55***	38.84	1.04	45.43	6.13***	16.67	0.37
PutD	-	-192.65	-9.16***	-187.99	-3.06**	-155.54	-4.13***	-589.22	-4.7***
ConvertD	-	-248.47	-12.4***	-315.23	-6.69***	-	-	-	-
415RegD	-	-62.11	-3.49***	-73.24	-1.36#	-25.16	-1.32#	14.73	0.28
144aRegD	+	17.79	0.92	31.08	0.58	87.68	4.18***	79.55	1.35#
Industry Dummy		Yes		Yes		Yes		Yes	
Year Dummy		Yes		Yes		Yes		Yes	
# of Observation		3301		359		2131		294	
Model Fit		F-value: 51.91		F-value: 35.8		F-value: 51.57		F-value: 28.15	
Adjusted R^2		0.5504		0.6495		0.6189		0.7028	

Note: Standard errors in the OLS regression are corrected for firm-level clustering, and by White's heteroscedasticity-consistent estimator. #, *, **, *** significant at the 0.1, 0.05, 0.01, 0.001 level respectively (two-tailed if sign not predicted).

Table 9
Robustness Check with subsample of pre-crisis and crisis period
Yield Spread and Conservatism

Variables	Predicted Sign	Conditional Conservatism				Unconditional Conservatism			
		Pre-Crisis Period		Crisis Period		Pre-Crisis Period		Crisis Period	
		Coefficient	T-value	Coefficient	T-value	Coefficient	T-value	Coefficient	T-value
Intercept	?	318.64	4.86***	220.51	1.16	330.04	5.66***	395.75	1.63#
Conservatism		**176.53**	**4.46*** **	**420.45**	**2.86** **	**-57.1**	-2.82**	**-82.73**	-1.98*
IssuerSize	-	-12.56	-3.37***	-4.3	-0.36	-19.02	-5.29***	-28.68	-3.01**
ROA	-	-206.81	-3.73***	-286.78	-2.53**	-246.62	-3.01**	-222.14	-1.55#
Leverage	+	111.48	3.72***	41.8	0.49	121.91	4.99***	160.65	2.29*
Maturity	+	-7.34	-1.41#	-19.47	-1.64#	-2.37	-0.41	-14.85	-1.27
IssueSize	+/-	-0.11	-0.06	-17.88	-1.38#	1.22	0.57	-10.69	-0.69
Rating	-	-68.68	-6.75***	-245.64	-7.52***	-66.6	-6.08***	-201.13	-6.18***
BusiCycle	+	0.83	4.47***	3.08	11.58***	0.76	3.94***	2.83	10.29***
RedeemD	+	59.78	6.83***	35.18	0.72	43.95	4.95***	9.28	0.26
PutD	-	-160.77	-9.3***	-199.67	-3.16***	-182.41	-8.11***	-281.46	-3.87***
ConvertD	-	-314.55	-18.7***	-426.92	-7.77***	-271.71	-11.7***	-370.12	-7.46***
415RegD	-	-80.43	-4.71***	-37.47	-0.52	-79.78	-3.96***	-9.58	-0.13
144aRegD	+	6.67	0.37	-31.95	-0.42	-6.05	-0.28	43.8	0.55
Industry Dummy		Yes		Yes		Yes		Yes	
Year Dummy		Yes		Yes		Yes		Yes	
# of Observation		2160		409		2044		352	
Model Fit		F-value: 120.09***		F-value: 47.49***		F-value: 43.86***		F-value: 40.05***	
Adjusted R^2		0.6039		0.6662		0.5215		0.6269	

Note: Standard errors in the OLS regression are corrected for firm-level clustering, and by White's heteroscedasticity-consistent estimator. #, *, **, *** significant at the 0.1, 0.05, 0.01, 0.001 level respectively (two-tailed if sign not predicted).

Table 10
Descriptive Statistics by Year

Issue Year	Conditional Conservatism Sample		Unconditional Conservatism Sample		Internal Control Sample	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
2003	19	4.46	18	4.76		
2004	15	3.52	15	3.97		
2005	33	7.75	30	7.94	20	5
2006	14	3.29	8	2.12	39	9.75
2007	24	5.63	22	5.82	80	20
2008	120	28.17	103	27.25	82	20.5
2009	201	47.18	182	48.14	179	44.75
Total	426	100	378	100	400	100

Table 11
Descriptive Statistics of Variable

Panel A Conditional Conservatism Sample

Variable	N	Mean	Median	Std Dev	Minimum	Maximum
AbReturn	426	0.0079	0.0042	0.0142	-0.0145	0.0689
ConCon	252	-0.0978	-0.095	0.1399	-0.4397	0.2774
ROA	252	0.051	0.0551	0.0893	-0.3526	0.273
IssueSize	426	13.06	13.12	0.7113	11.35	14.62
Maturity	426	2.19	2.3	0.66	0.6931	3.43
Rating	426	3.74	4	0.9593	1	5
IssueHistory	426	14.21	10.13	12.01	0	42.67
OfferingD	426	0.4765	0	0.5	0	1
IssueExchange	426	0.223	0	0.4168	0	1

Panel B Unconditional Conservatism Sample

Variable	N	Mean	Median	Std Dev	Minimum	Maximum
AbReturn	378	0.0081	0.0041	0.0155	-0.0196	0.0828
UnCon	214	0.4357	0.4569	0.271	-0.2646	0.9141
ROA	214	0.0575	0.0598	0.0828	-0.342	0.273
IssueSize	378	13.08	13.12	0.7025	11.29	14.63
Maturity	378	2.19	2.3	0.6814	0.6931	3.43
Rating	378	3.65	4	0.9448	1	5
IssueHistory	378	15.94	11.78	12.25	0	42.69
OfferingD	378	0.4709	0	0.4998	0	1
IssueExchange	378	0.246	0	0.4313	0	1

Panel C Internal Control Sample

Variable	N	Mean	Median	Std Dev	Minimum	Maximum
AbReturn	400	0.0079	0.0041	0.0167	-0.0266	0.1051
Sox404D	254	0.0945	0	0.2931	0	1
ROA	254	0.0493	0.0592	0.0959	-0.3894	0.2429
IssueSize	400	12.95	12.9	0.6756	11.23	14.63
Maturity	400	2.24	2.3	0.6649	0.6931	3.43
Rating	400	3.95	4	0.9025	1	5
IssueHistory	400	14.8	10.99	12.68	0	47.43
OfferingD	400	0.42	0	0.4942	0	1
IssueExchange	400	0.1925	0	0.3948	0	1

Refer to Appendix 2 for the definition of the variables.

Table 12
Correlation Matrix for Conservatism Sample

Panel A Conditional Conservatism

	AbReturn	ROA	Bondsize	Maturity	Rating	IssueHistory	OfferingD	IssueExchange
ROA	-0.2237***							
Bondsize	-0.0656	0.0868#						
Maturity	-0.0131	0.0421	0.0775					
Rating	0.1886***	-0.3293***	-0.4323***	-0.0633				
IssueHistory	-0.0656	0.1533**	-0.0037	0.0064	-0.2135***			
OfferingD	0.0533	-0.0984*	0.2686***	0.0421	-0.1376**	-0.1619***		
IssueExchange	0.0522	-0.0514	0.027	-0.0027	-0.0629	0.1034*	-0.0143	
ConCon	0.1569**	-0.1924***	-0.4901***	-0.1725***	0.4253***	-0.017	-0.2321***	0.0203

Panel B Unconditional Conservatism

	AbReturn	ROA	Bondsize	Maturity	Rating	IssueHistory	OfferingD	IssueExchange
ROA	-0.2802***							
Bondsize	0.0372	0.0965#						
Maturity	-0.0032	0.0562	0.0736					
Rating	0.1972***	-0.3019***	-0.4394***	-0.0707				
IssueHistory	-0.0307	0.079	-0.0345	0.0081	-0.1558**			
OfferingD	0.0475	-0.0377	0.3111***	0.0072	-0.1792***	-0.1416**		
IssueExchange	0.0787	-0.0465	0.0047	-0.0151	-0.0393	0.1062*	-0.0713	
UnCon	0.0179	0.3452***	0.2161***	-0.0111	-0.3892***	0.2316***	0.0509	-0.0809

Note: #, *, **, *** significant at the 0.1, 0.05, 0.01, 0.001 level respectively.

Table 13
Correlation Matrix for Internal Control Sample

	AbReturn	ROA	Bondsize	Maturity	Rating	IssueHistory	OfferingD	IssueExchange
ROA	-0.1975***							
Bondsize	-0.0166	0.2703***						
Maturity	-0.0996*	0.0731	0.0655					
Rating	0.0889#	-0.3693***	-0.4845***	0.0106				
IssueHistory	-0.0005	0.0424	0.0052	0.0159	-0.1816***			
OfferingD	0.0237	-0.0918	0.1564**	0.0002	-0.0596	-0.089#		
IssueExchange	0.0389	0.0855#	0.1028*	-0.0473	-0.1699***	0.1551**	-0.0558	
SOX404D	-0.0125	-0.0808	-0.1703***	-0.0507	0.1613**	0.0023	0.0375	-0.0941#

Note: #, *, **, *** significant at the 0.1, 0.05, 0.01, 0.001 level respectively.

Table 14
Conservatism and Underpricing

Panel A OLS Regression for Conditional Conservatism Sample
Dependent Variable: AbReturn

Variables	Predicted Sign	Specification 1		Specification 2	
		Coefficient	T-value	Coefficient	T-value
Intercept	?	-0.0505	-2.58*	-0.0626	-3.21***
ConCon	+	**0.0177**	**2.97****	**0.0165**	**2.81****
ROA	-	-0.0243	-1.74*	-0.0264	-1.91*
IssueSize	+/-	0.0039	2.89**	0.0044	3.23***
Maturity	+	0.0003	0.32	0.0006	0.6
Rating	+	0.0024	2.89**	0.0027	3.12***
IssueHistory	-	-0.0001	-0.04	-0.0001	-0.61
OfferingD	-	0.0013	0.84	0.0015	0.96
IssueExchange	+	0.0016	0.77	0.0015	0.71
Industry Dummy		No		Yes	
Year Dummy		No		Yes	
Model Fit		F-value: 4.45***		F-value: 3.42***	
Adjusted R^2		0.1044		0.1239	

Table 14 (Cont.)
Conservatism and Underpricing

Panel B OLS Regression for Unconditional Conservatism Sample
Dependent Variable: AbReturn

Variables	Predicted Sign	Specification 1		Specification 2	
		Coefficient	T-value	Coefficient	T-value
Intercept	?	-0.0446	-1.98*	-0.0584	-2.61**
UnCon	+	**0.0114**	**2.37****	**0.0107**	**2.13***
ROA	-	-0.0536	-2.96**	-0.0531	-2.97**
IssueSize	+/-	0.0026	1.81*	0.003	2.15*
Maturity	+	0.0006	0.51	0.0008	0.75
Rating	+	0.0041	3.12***	0.0044	3.31***
IssueHistory	-	-0.0001	-0.29	-0.0001	-0.51
OfferingD	-	0.0012	0.71	0.0012	0.69
IssueExchange	+	0.0034	1.44#	0.0032	1.34#
Industry Dummy		No		Yes	
Year Dummy		No		Yes	
Model Fit		F-value: 3.15***		F-value: 3.61***	
Adjusted R^2		0.145		0.1605	

Note: Standard errors in the OLS regression are corrected for firm-level clustering, and by White's heteroscedasticity-consistent estimator. #, *, **, *** significant at the 0.1, 0.05, 0.01, 0.001 level respectively (two-tailed if sign not predicted).

Table 15
Internal Control and Underpricing

OLS Regression for Internal Control Sample
Dependent Variable: AbReturn

Variables	Predicted Sign	Specification 1		Specification 2	
		Coefficient	T-value	Coefficient	T-value
Intercept	?	-0.0099	-0.44	-0.023	-1.04
SOX404D	+	**-0.0017**	**-0.77**	**-0.0019**	**-0.82**
ROA	-	-0.0369	-2.81**	-0.0371	-2.69**
IssueSize	+/-	0.0015	0.99	0.0018	1.17
Maturity	+	-0.0022	-1.72*	-0.0019	-1.35#
Rating	+	0.0012	0.94	0.0018	1.33#
IssueHistory	-	0.0001	0.23	0.0001	0.28
OfferingD	-	0.0002	0.1	0.0002	0.1
IssueExchange	+	0.0022	0.85	0.0025	0.94
Industry Dummy		No		Yes	
Year Dummy		No		Yes	
Model Fit		F-value: 1.7#		F-value: 3.04***	
Adjusted R^2		0.0537		0.0735	

Note: Standard errors in the OLS regression are corrected for firm-level clustering, and by White's heteroscedasticity-consistent estimator. #, *, **, *** significant at the 0.1, 0.05, 0.01, 0.001 level respectively (two-tailed if sign not predicted).

Table 16
Robustness Check with HLM Regression

HLM Regression for All Three Samples
Dependent Variable: AbReturn

Variables	Predicted Sign	Specification 1		Specification 2		Specification 3	
		Conditional Conservatism		Unconditional Conservatism		Internal Control	
		Coefficient	T-value	Coefficient	T-value	Coefficient	T-value
Intercept	?	-0.052	-2.84**	-0.0443	-2.06*	-0.0198	-0.87
Quality	+	**0.0159**	**2.57****	**0.009**	**2.36****	**-0.0019**	**-0.58**
ROA	-	-0.0311	-3.36***	-0.0599	-5.22***	-0.0361	-3.24***
IssueSize	+/-	0.0037	3.09**	0.0021	1.59#	0.0016	1.04
Maturity	+	0.0003	0.34	0.0008	0.72	-0.0022	-1.77*
Rating	+	0.0025	2.57**	0.0038	3.43***	0.0018	1.46#
IssueHistory	-	-0.0001	-0.52	-0.0001	-0.27	0.0001	0.48
OfferingD	-	0.0013	0.9	0.0014	0.86	0.0001	0.01
IssueExchange	+	0.0028	1.74*	0.0046	2.58**	0.0029	1.35#
Industry Dummy		Yes		Yes		Yes	
Year Dummy		Yes		Yes		Yes	
Model Fit		Deviance: 50.8***; d.f.: 21		Deviance: 57.6***; d.f.: 21		Deviance: 26.9***; d.f.: 19	
Adjusted R^2		0.067		0.063		0.0435	

Note: #, *, **, *** significant at the 0.1, 0.05, 0.01, 0.001 level respectively (two-tailed if sign not predicted).

Table 17
Robustness Check with All Trades Included

OLS Regression for All Three Samples
Dependent Variable: AbReturn

Variables	Predicted Sign	Specification 1		Specification 2		Specification 3	
		Conditional Conservatism		Unconditional Conservatism		Internal Control	
		Coefficient	T-value	Coefficient	T-value	Coefficient	T-value
Intercept	?	-0.0622	-3.19**	-0.0575	-2.65**	-0.024	-1.14
Quality	+	**0.0161**	**2.72****	**0.0095**	**2.04***	**-0.002**	**-0.9**
ROA	-	-0.0268	-1.93*	-0.0493	-3.03**	-0.0379	-2.83**
IssueSize	+/-	0.0044	3.23***	0.003	2.21*	0.0018	1.26
Maturity	+	0.0006	0.56	0.0009	0.84	-0.0017	-1.29#
Rating	+	0.0026	3.05**	0.0042	3.34***	0.0019	1.42#
IssueHistory	-	-0.0001	-0.62	-0.0001	-0.61	0.0001	0.32
OfferingD	-	0.0014	0.9	0.0012	0.71	-0.0001	-0.06
IssueExchange	+	0.0015	0.73	0.0029	1.3#	0.0023	0.92
Industry Dummy		Yes		Yes		Yes	
Year Dummy		Yes		Yes		Yes	
# of Observation		428		378		399	
Model Fit		F-value: 3.36***		F-value: 3.75***		F-value: 3.13***	
Adjusted R^2		0.1221		0.159		0.0795	

Note: Standard errors in the OLS regression are corrected for firm-level clustering, and by White's heteroscedasticity-consistent estimator. #, *, **, *** significant at the 0.1, 0.05, 0.01, 0.001 level respectively (two-tailed if sign not predicted).

Table 18
Robustness Check with Shorter Trading Period

OLS Regression for All Three Samples
Dependent Variable: AbReturn

Variables	Predicted Sign	Specification 1		Specification 2		Specification 3	
		Conditional Conservatism		Unconditional Conservatism		Internal Control	
		Coefficient	T-value	Coefficient	T-value	Coefficient	T-value
Intercept	?	-0.0622	-3.07**	-0.0572	-2.48*	-0.0189	-0.8
Quality	+	**0.0169**	**2.76****	**0.011**	**2.16***	**-0.0021**	**-0.91**
ROA	-	-0.0264	-1.87*	-0.0539	-2.94**	-0.0368	-2.66**
IssueSize	+/-	0.0044	3.1**	0.0029	2.03*	0.0015	0.89
Maturity	+	0.0006	0.55	0.0008	0.72	-0.0018	-1.23
Rating	+	0.0026	2.97**	0.0043	3.19***	0.0017	1.22
IssueHistory	-	-0.0001	-0.76	-0.0001	-0.65	0.0001	0.27
OfferingD	-	0.0016	0.99	0.0013	0.74	0.0001	0.07
IssueExchange	+	0.0014	0.67	0.0031	1.28	0.0023	0.86
Industry Dummy		Yes		Yes		Yes	
Year Dummy		Yes		Yes		Yes	
# of Observation		415		368		391	
Model Fit		F-value: 3.29***		F-value: 3.69***		F-value: 3.03***	
Adjusted R^2		0.1222		0.1611		0.072	

Note: Standard errors in the OLS regression are corrected for firm-level clustering, and by White's heteroscedasticity-consistent estimator. #, *, **, *** significant at the 0.1, 0.05, 0.01, 0.001 level respectively (two-tailed if sign not predicted).

Table 19
Robustness Check with Alternative Methods for Abnormal Bond Return

Panel A OLS Regression for Conditional Conservatism Sample
Dependent Variable: AbReturn

Variables	Predicted Sign	Specification 1		Specification 2		Specification 3	
		Daily Ave., Last Price, Trade>=10K		Weighted Price, Trade>=10K		Last Price, Trade>=10K	
		Coefficient	T-value	Coefficient	T-value	Coefficient	T-value
Intercept	?	-0.0603	-2.93**	-0.051	-1.82#	-0.0485	-1.63#
ConCon	+	**0.0171**	**2.8****	**0.0235**	**2.4****	**0.0229**	**2.26***
ROA	-	-0.0288	-1.8*	-0.0456	-2.16*	-0.0454	-2.09*
IssueSize	+/-	0.0043	2.99**	0.0033	1.65*	0.0032	1.5#
Maturity	+	0.0005	0.47	0.0001	0.01	-0.0001	-0.06
Rating	+	0.0025	2.81**	0.0038	2.74**	0.0036	2.45**
IssueHistory	-	-0.0001	-0.73	-0.0001	-0.5	-0.0001	-0.78
OfferingD	-	0.0017	1.08	0.003	1.09	0.0034	1.18
IssueExchange	+	0.0023	1.06	-0.0003	-0.09	0.0012	0.38
Industry Dummy		Yes		Yes		Yes	
Year Dummy		Yes		Yes		Yes	
Model Fit		F-value: 2.8***		F-value: 3.3***		F-value: 2.88***	
Adjusted R^2		0.1185		0.1071		0.0984	

Table 19 (Cont.)
Robustness Check with Alternative Methods for Abnormal Bond Return

Panel B OLS Regression for Unconditional Conservatism Sample
Dependent Variable: AbReturn

Variables	Predicted Sign	Specification 1		Specification 2		Specification 3	
		Daily Ave., Last Price, Trade>=10K		Weighted Price, Trade>=10K		Last Price, Trade>=10K	
		Coefficient	T-value	Coefficient	T-value	Coefficient	T-value
Intercept	?	-0.0567	-2.43*	-0.0475	-1.23	-0.0427	-1.05
UnCon	+	**0.0116**	**2.14***	**0.0168**	**1.94***	**0.0185**	**2***
ROA	-	-0.0597	-2.86**	-0.0982	-3.05**	-0.1065	-3.02**
IssueSize	+/-	0.0028	1.98*	0.0013	0.51	0.0009	0.34
Maturity	+	0.0008	0.66	0.0007	0.32	0.0007	0.31
Rating	+	0.0044	3.09**	0.0071	3.06**	0.0069	2.8**
IssueHistory	-	-0.0001	-0.58	-0.0001	-0.11	-0.0001	-0.25
OfferingD	-	0.0016	0.88	0.0027	0.82	0.0036	1.04
IssueExchange	+	0.0044	1.73*	0.0023	0.62	0.0041	1.06
Industry Dummy		Yes		Yes		Yes	
Year Dummy		Yes		Yes		Yes	
Model Fit		F-value: 4.88***		F-value: 3.67***		F-value:4.47***	
Adjusted R^2		0.1654		0.1362		0.1375	

Table 19 (Cont.)
Robustness Check with Alternative Methods for Abnormal Bond Return

Panel C OLS Regression for Internal Control Sample
Dependent Variable: AbReturn

Variables	Predicted Sign	Specification 1		Specification 2		Specification 3	
		Daily Ave., Last Price, Trade>=10K		Weighted Price, Trade>=10K		Last Price, Trade>=10K	
		Coefficient	T-value	Coefficient	T-value	Coefficient	T-value
Intercept	?	-0.02	-0.88	-0.0115	-0.37	-0.0063	-0.19
SOX404D	+	**-0.0025**	**-1.21**	**-0.0003**	**-0.06**	**-0.0013**	**-0.34**
ROA	-	-0.0345	-2.43**	-0.0581	-2.83**	-0.0532	-2.46**
IssueSize	+/-	0.0016	1	0.0007	0.33	0.0004	0.15
Maturity	+	-0.0021	-1.47#	-0.0018	-0.86	-0.0021	-1
Rating	+	0.0017	1.22	0.0025	1.31#	0.0023	1.17
IssueHistory	-	0.0001	0.21	0.0001	0.52	0.0001	0.38
OfferingD	-	0.0004	0.19	0.0009	0.29	0.0014	0.48
IssueExchange	+	0.0029	1.1	0.0026	0.72	0.0038	1.03
Industry Dummy		Yes		Yes		Yes	
Year Dummy		Yes		Yes		Yes	
Model Fit		F-value: 3.16***		F-value: 4.1***		F-value: 3.96***	
Adjusted R^2		0.0707		0.0825		0.0759	

Note: Standard errors in the OLS regressions are corrected for firm-level clustering, and by White's heteroscedasticity-consistent estimator. #, *, **, *** significant at the 0.1, 0.05, 0.01, 0.001 level respectively (two-tailed if sign not predicted).

Table 20
Robustness Check with Alternative Measures for Conditional and Unconditional Conservatism

Variables	Predicted Sign	Alternative Conditional Conservatism Measure		Alternative Unconditional Conservatism Measure	
		Coefficient	T-value	Coefficient	T-value
Intercept	?	-0.0536	-2.83**	-0.0559	-1.86*
Conservatism	?	**0.0002**	**2.21***	**0.0637**	**1.87***
ROA	+	-0.0369	-2.81**	-0.0671	-3.85***
IssueSize	-	0.0015	0.99	0.0036	1.94*
Maturity	+/-	-0.0022	-1.72*	0.0009	0.64
Rating	+	0.0012	0.94	0.0046	3.01**
IssueHistory	+	0.0001	0.23	0.0001	0.19
OfferingD	-	0.0002	0.1	0.0016	0.68
IssueExchange	-	0.0022	0.85	0.0035	1.18
Industry Dummy		Yes		Yes	
Year Dummy		Yes		Yes	
# of Observation		426		264	
Model Fit		F-value: 3.27***		F-value: 3.93***	
Adjusted R^2		0.1178		0.2145	

Note: Standard errors in the OLS regressions are corrected for firm-level clustering, and by White's heteroscedasticity-consistent estimator. #, *, **, *** significant at the 0.1, 0.05, 0.01, 0.001 level respectively (two-tailed if sign not predicted).

Appendix 1 Variable Definition for Yield Spread

Variable	Definition
YieldSpread	The initial corporate bond yield minus the Treasury bond yield with comparable maturity.
ConCon	Firm-year conditional conservatism measure introduced by Khan and Watts (2009).
UnCon	Firm-year unconditional conservatism measure introduced by Beaver and Ryan (2000).
SOX404D	A dummy for the bond issue cutoff. 1 if a bond issue is offered after the conclusion by auditor under SOX Section 404 that issuer's internal control over financial reporting is not effective, and 0 if offered after the conclusion by auditor that issuer's internal control over financial reporting is effective.
IssuerSize	The natural log of issuer's assets at end of the fiscal year immediately prior to the new corporate bond issuance date.
ROA	Return on assets of the issuer, defined as net income divided by total assets at the end of the fiscal year immediately prior to the new corporate bond issuance date.
Leverage	Long term debt divided by total assets of the issuer at the end of the fiscal year immediately prior to the new corporate bond issuance date.
Zscore	Altman Z-score, which is introduced by Altman (1968), is conmputed as follows: 1.2*(working capital/total assets) + 1.4*(retained earnings/total assets) + 3.3*(earnings before interest and taxes/total assets) + 0.6*(market value of equity/book value of total debt) + 1.0*(sales/total assets).
BusiCycle	The difference between the average yield of Moody's Aaa bonds for the month of issue and the average yield of 10-year U.S. Treasury bonds for the month of issue.
Maturity	The natural log of the number of years until the bond matures.
IssueSize	The natural log of the par value of the bond initially issued in millions of dollars.
Rating	Bond rating by Moody's, sequentially converted to numbers, with 1 for AAA through 21 for C, 26 for "CUSP", and 27 for "NR". For issues without Moody's rating, Standard & Poor's rating and Fitch rating are used instead.
RedeemD	A dummy variable for the call feature of the bond. 1 for bond has an embedded call option and 0 otherwise.
PutD	A dummy variable for the put feature of the bond. 1 for bond has an embedded put option and 0 otherwise.
ConvertD	A dummy variable for the convert feature of the bond. 1 for bond has an embedded convert option and 0 otherwise.

415RegD	A dummy variable for the SEC Rule 415 shelf registration feature of the bond. 1 for bond is issued under a shelf registration and 0 otherwise.
144aRegD	A dummy variable for the SEC Rule 144a private placement feature of the bond. 1 for bond is issued through private placement exempt from registration and 0 otherwise.

Appendix 2 Variable Definition for Underpricing

Variable	Definition
AbReturn	Defined as the treasury-adjusted, daily-average, weighted price abnormal bond return of the first trading date after the offering date. First, we calculate daily average, weighted price bond return. Second, we use the difference between daily average, weighted price bond return and contemporaneous U.S. Treasury return with the similar coupon rate and maturity to measure abnormal bond return.
ConCon	Firm-year conditional conservatism measure introduced by Khan and Watts (2009).
UnCon	Firm-year unconditional conservatism measure introduced by Beaver and Ryan (2000).
SOX404D	A dummy for the bond issue cutoff. 1 if a bond issue is offered after the conclusion by auditor under SOX Section 404 that issuer's internal control over financial reporting is not effective, and 0 if offered after the conclusion by auditor that issuer's internal control over financial reporting is effective.
ROA	Return on assets of the issuer, defined as net income divided by total assets at the end of the fiscal year immediately prior to the corporate bond issuance date.
IssueSize	The natural log of the par value of the bond initially issued in millions of dollars.
Maturity	The natural log of the number of years until the bond matures.
Rating	Bond rating by Moody's, sequentially converted to numbers from 1 (highest rating) to 5 (lowest rating), representing the ratings of Aaa, Aa, A, Baa, and Baa below. For issues without Moody's rating, Standard & Poor's rating or Fitch rating is used instead.
IssueHistory	Number of years the issuer in the bond market. It is defined as the year of current bond issue minus year of initial public bond offering.
OfferingD	A dummy variable which takes the value of one if the issuer has completed the public bond offering in the last year and 0 otherwise.
IssueExchange	A dummy variable which takes the value of one if the issuer lists the bond on the NYSE and 0 otherwise.