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THE DISCRETIONARY REPORTING OF NONCONTROLLING INTERESTS AND ITS ASSOCIATION WITH THE MARKET ASSESSMENT OF CREDIT RISK

By

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ABSTRACT

THE DISCRETIONARY REPORTING OF NONCONTROLLING INTERESTS AND ITS ASSOCIATION WITH THE MARKET ASSESSMENT OF CREDIT RISK

By

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This dissertation empirically examines the determinants of firms' decision to classify noncontrolling interests in the liability versus mezzanine section of the balance sheet, and the implication of the classification decision on the credit market's assessment of risk. I hypothesize and find that firms with greater exposure to litigation risk from noncontrolling shareholders and firms with more serious information asymmetry problems are more likely to classify noncontrolling interests as a liability to mitigate agency costs. However, consistent with more serious agency conflicts due to controlling ownership, I predict and find that family firms are more likely to adopt the mezzanine classification.

After controlling for the endogeneity of firms' classification choice and other factors affecting credit ratings, I find that firms choosing to disclose noncontrolling interests in the liability section have higher credit ratings (around one notch) compared with those that disclose noncontrolling interests in the mezzanine section. This finding is consistent with my hypothesis that creditors are more likely to favorably assess the credit risk of companies that conservatively classify claims on their balance sheet. Overall, my results suggest that the classification choice of noncontrolling interests is informative about the market's assessment of firms' credit risk, and therefore, limiting accounting choices could potentially eliminate relevant information from financial statements in situations where significant information asymmetry and agency costs may be prominent.

To my husband, my mother and father.

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CHAPTER 1

INTRODUCTION

I investigate firms' balance-sheet classification decision of noncontrolling interests in the pre-FAS 160 era, and the association between the classification choice and firms' credit ratings.[1] The Financial Accounting Standards Board (hereafter, FASB) defines noncontrolling interests as "the portion of the equity (residual interest) in a subsidiary attributable to the owners of the subsidiary other than the parent and the parent's affiliates."[2] FAS 160 "Noncontrolling Interests in Consolidated Financial Statements," which is effective for fiscal periods beginning after 12/15/2008, views most noncontrolling interests in subsidiaries as equity of the consolidated group.[3] However, FAS 160 has raised considerable debate among practitioners and in the business community.[4, 5] Moreover, given that noncontrolling interests fall in a grey area on the

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[1] My sample includes S&P 500 firms with noncontrolling interests during the fiscal year 2004 before FAS 160 had taken effect when firms had discretion in classifying noncontrolling as liability, equity, or mezzanine.

[2]The FASB believes the term *noncontrolling interest* is more precise than *minority interests*, because the latter implies that the holder has less than 50 percent of the voting shares. However, in the case of a variable interest entity under Interpretation 46(R), a controlling interest can hold a minority of the voting shares but still exercise control through other means.

[3] FAS 150 requires that mandatorily redeemable securities (e.g., mandatorily redeemable noncontrolling interests) that "embody an unconditional obligation requiring the issuer's redemption by transfer of assets at a specified or determinable date (or dates) or upon an event that is certain to occur" be disclosed in the liability section. I find that firms in my sample did not change their classification of noncontrolling interests during the period 2002 – 2004, suggesting that FAS 150 did not have an effect on my sample firms. In other words, my dissertation focuses on the classification of non-mandatorily redeemable noncontrolling interests for which firms have discretion in classifying them as liabilities, equity, or mezzanine.

[4] Based on forty-nine comment letters to the 2005 Exposure Draft, "Consolidated Financial Statements, Including Accounting and Reporting Noncontrolling Interests in Subsidiaries," (hereafter, 2005 ED), the majority of respondents did not support the classification of noncontrolling interests as equity. Ms. Seidman, one of the FASB members, disagreed with the equity classification because she believed that noncontrolling interests is different from the residual interests of parent firms. For example, noncontrolling interests do not "absorb losses relating to other activities of the parent and thus would be higher in standing than the residual claim of shareholders of the parent entity (pg. 3, FAS 160)."

[5] Appendix A provides background information on accounting rules for the balance-sheet classification of noncontrolling interests prior to FAS 160, the debate among practitioners, academics, and standard setters over the proper classification, and the competing theories underlying the debate.

liability-equity spectrum, their balance sheet classification was a key issue in the FASB's broader project on liabilities and equity.

Despite the importance of the classification issue, there is no systematic empirical evidence on corporate reporting of noncontrolling interests. For example, I find that in year 2004 roughly a quarter of the S&P 500 firms with noncontrolling interests disclose them in the liability section, with the remainder of the firms reporting in the mezzanine section (i.e., between liability and equity), suggesting significant cross-sectional variation in classification practices.[6, 7] Given the importance of financial leverage to firm value (e.g., Hamada 1969; Rubinstein 1973; Bowman 1980; Mulford 1985; Choi 1988) and the significant consequences of liability-equity classification to different stakeholders (Hopkins 1996; Engel et al. 1999), I argue that the accounting classification choice for noncontrolling interests is an important financial reporting decision.

Extant literatures argue that accounting choices can be used to alleviate various agency problems (Jensen and Meckling 1976; Smith and Warner 1979; Watts and Zimmerman 1986; Fields et al. 2001).[8] Further, recent accounting research suggests that accounting conservatism can mitigate agency costs, and thereby, reduce the cost of capital (Ahmed et al. 2002; Francis et al. 2004; Zhang 2006). In my setting, I view the

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[6] None of my sample firms disclosed noncontrolling interests in the equity section. In its survey of consolidated financial statement, the American Institute of Certified Public Accountants reported that only 3 out of 85 companies display noncontrolling interests in the equity section. Further, AICPA survey "Accounting Trends & Techniques "of 600 public companies during the period 1993 to 2002 also shows that classification variation in their sample exists only between liability and mezzanine choices. Exhibits 1, 2, and 3 provide examples of liability (United Technologies), mezzanine (Borders Group), and equity (from Appendix A of FAS 160) classification of noncontrolling interests.

[7] Based on my analysis of S&P 500 firms' 10-K forms during the period 1993 – 2004, I find that 4 out of 263 firms with noncontrolling interests in 2004 changed their classification at least once during this period. Of those 4 firms, 1 (2) of them changed from mezzanine (liability) classification to liability (mezzanine) classification, and one firm changed its classification twice.

classification of noncontrolling interests in the liabilities section as a conservative financial reporting choice as it leads to understatement of net assets. Unlike most prior research which focuses on owner-manager agency problems, I contend that the classification choice for noncontrolling interests is also influenced, may be to a greater extent, by agency problems between controlling and noncontrolling shareholders. With respect to agency problems arising from control, I hypothesize that: 1) due to better alignment of the interests of managers and family owners, family firms are more likely to report noncontrolling interests as lower priority claims (i.e., mezzanine), possibly reflecting their indifference to protecting the interests of noncontrolling shareholders; and 2) however, firms with higher litigation exposure to noncontrolling shareholders ("deep pocket") are more likely to choose the liability classification to signal reduced agency conflicts. From the standpoint of manager-shareholder agency problems, I examine whether the managerial decision to classify noncontrolling interests as liability is related to incentives for: 1) alleviating information asymmetries generally; and 2) limiting agency conflicts between managers and shareholders when firms are financially constrained.

My empirical analysis using a sample of 128 S&P 500 firms with noncontrolling interests in the fiscal year 2004 largely supports of my predictions. Reflecting the agency conflicts due to control, the likelihood of classifying noncontrolling interests in the

[8] I consider the classification of noncontrolling interests an accounting choice which "is a decision whose primary purpose is to influence (either in form or substance) the output of the accounting system in a particular way" (Fields et al. 2001, page 256).

liability section decreases by 17.9 percent in family firms.[9] However, the probability of choosing the liability classification increases by 11.3 percent when parent companies with "deep pockets" face potential litigation risk from the controlling relationship (proxied by the ratio of consolidated assets to the claims of noncontrolling shareholders). To mitigate manager-shareholder agency problems, I find that firms with higher information asymmetry (proxied by the extent of growth opportunities) are 10.9 percent more likely to choose the conservative approach of classifying noncontrolling interests as liabilities. I do not, however, find a relationship between financial constrain and the balance sheet classification of noncontrolling interests. Taken together, while my results on the role of accounting classification in manager-shareholder agency conflicts is consistent with prior research, I provide new evidence on how agency conflicts due to controlling ownership influence accounting choice.

While my study focuses on a single balance-sheet accounting classification choice, I also provide evidence that firms adopting liability classification choice are more likely to provide higher-quality earnings. This suggests that firms use multiple accounting choices to satisfy the demand for high-quality financial information to address agency problems (Fields et al. 2001).

Considering the prominence of credit-based financing in the capital markets, the relevance of accounting leverage ratios for credit risk assessment (Shi 2003; Ashbaugh et al. 2006; Jiang 2005; Lee 2005), and the importance of accounting conservatism to creditors (Ahmed et al. 2002; Beatty et al. 2006; Zhang 2006), I also investigate the

[9] The marginal effect of continuous variables (dummy variables) is measured as the change in the probability of adopting liability classification for a change in the independent variable equal to its inter-quartile range (from zero to one) in the sample, holding all other independent variables at their means.

potential economic significance of the classification choice from the credit market standpoint. While extant empirical studies have not resolved whether balance sheet classification choices of hybrid securities are relevant to investors,[10] the balance-sheet classification of noncontrolling interests provides a unique setting for examining this question because it has no impact on net income, and therefore, the analysis is not affected by considerations other than the placement of information on the balance sheet.[11]

Extant literature argues that firms with conservative accounting practices are rewarded with lower cost of debt (Zhang 2006) and higher credit ratings (Ahmed et al. 2002). Accordingly, I hypothesize that firms would receive higher credit ratings when they choose to classify noncontrolling interests under liabilities because the classification choice is likely to signal firms' desire to use balance sheet conservatism to limit agency conflicts. Based on the 107 of my sample firms with credit rating data, I find that on average, firms that classify noncontrolling interests as liabilities have credit ratings that are around one notch higher than those of firms adopting mezzanine section. The result is obtained after controlling for the various determinants of credit risk and the endogeneity

[10] Archival studies find that stock market treats securities with both liability and equity characteristics (e.g., mandatorily redeemable preferred stock) in a fashion that is different from the accounting treatment the securities receive in financial reports, suggesting that liability-equity classification has no discerning effect on investor valuation (Kimmel and Warfield 1995; Cheng et al. 2003). However, experimental research documents that liability-equity classification of hybrid securities matters to equity analysts, an important group of financial statement users (Hopkins 1996).

[11] Lee at al. (2006) find that insurance companies that have used security gains and losses to manage earnings and those that have a reputation for poor financial reporting quality choose to provide information on comprehensive income in a statement of equity rather than a performance statement as recommended by the FASB. In the context of comprehensive income reporting, firms use different levels of reporting saliency as a response to differential costs of transparent disclosures. Given the proximity of the locations for the two classification choices, I do not expect disclosure saliency to be an important issue with respect to noncontrolling interests. However, one must be careful to note that this dissertation does not provide a direct test of the comparison between liability and mezzanine classification on the degree of saliency, thus it is possible that the observed association could be confounded by managers' concern on and market reaction to the different saliency of different classification choices.

of the classification choice (e.g., Fisher 1959; Ziebart and Reiter 1992; Sengupta 1998; Shi 2003; Ashbaugh et al. 2006; Klock et al. 2005).

In summary, this dissertation also has implications for the FASB who recently curtailed the discretion in the accounting classification of noncontrolling interests. My credit rating analysis indicates that balance-sheet classification provides useful information for the market's assessment of firms' credit risk. This finding implies that limiting accounting choices could potentially eliminate relevant information from financial statements in situations where information asymmetry and agency problems may be prominent (Fields et al. 2001: p. 261). While eliminating accounting discretion is arguably driven by the FASB's recent focus on decision usefulness, my analysis suggests that stewardship benefits of accounting discretion may suffer.

The remainder of the dissertation proceeds as follows. Sections 2 and 3 discuss various determinants of the balance-sheet classification of noncontrolling interests and the potential impact of the classification on credit markets. Section 4 describes the research design, and Section 5 discusses sample selection and descriptive statistics. Section 6 presents empirical findings and the results of robustness tests. Section 7 concludes.

CHAPTER 2

DETERMINANTS OF THE DECISION TO CLASSIFY NONCONTROLLING INTERESTS AS LIABILITY

According to Dye (2002 page 1125-1126), "financial reporting is, at its roots, a process of classification: firms are 'going concerns' or not; transactions are 'recognized' in a firm's financial statements or not; leases are capital leases or operating leases; expenditures are assets or expenses; financial claims are liabilities or equity, etc." The classification process underlying financial reporting has a real effect on resource allocation because it helps investors predict firms' future cash flows, which in turn, affects their investment decisions (Dye 2002). Consistent with this notion, extensive research documents that liability-equity classification has significant consequences for various stakeholders such as buy-side financial analysts (Hopkins 1996) and managers (Engel et al. 1999).[12]

Moreover, accounting literature argues that accounting choices are affected by and can be used to alleviate various types of agency problems (see Fields et al. 2001 and Watts 2003 for a review). As depicted in Figure 1, there are two types of agency problems in my setting: 1) between controlling and noncontrolling shareholders, and 2) between managers and shareholders. Of the two types, I argue that the agency problem due to control dominates the classification of noncontrolling interests. In a majority-owned subsidiary, managerial decisions about the operating, investing, and financing

[12] Hopkins (1996) provides experimental evidence that buy-side financial analysts price the firm's mandatorily redeemable preferred stock as if the firm had issued debt (equity) when the stocks are classified as liability (equity). Engel et al. (1999) find that firms incur significant costs (i.e., 10 to 43 million) to manage their debt-to-assets ratio by an average of 13 percent through issuing trust preferred

activities of subsidiaries and the ensuing economic benefits are often controlled by parent company shareholders.[13] The controlling shareholders often have closer ties to both the parent and subsidiary managers than do noncontrolling shareholders, making opportunistic alliances between managers and controlling shareholders more likely. My objective in this section is to identify how these types of agency problems will influence the noncontrolling interests classification.

2.1 Controlling-noncontrolling shareholder agency problem

The financial economics literature argues that market forces and/or legal statutes cannot completely eliminate the controlling-noncontrolling shareholder agency conflicts, leading to the expropriation of noncontrolling shareholders' interests by controlling shareholders (Hazen 1977; Brudney and Clark 1981; Bebchuk 1989; Shleifer and Vishny 1997; La Porta et al. 2000).[14] In the case of a majority-owned subsidiary, controlling shareholders gain if they cause subsidiary assets to be transferred to the parent corporation without adequate compensation to noncontrolling shareholders. Such wealth transfer mechanisms could include outright theft, dilution of noncontrolling interests by issuing additional shares to the controlling shareholders, and asset sales to parent firms at favorable prices (Shleifer and Vishny 1997; LaPorta et al. 2002).

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stock. While Hopkins (1996) examines the behavioral implications of balance sheet classification, Engel et al. (1999) focus on transaction structuring by managers to achieve a specific accounting classification.

[13] Officers and directors of the parent typically serve in the same capacity for the subsidiary. Schipper and Smith (1986) document that in 34 of 48 of their sample firms, the President or CEO of the subsidiary is also a parent manager. In 18 cases, one or more of the secretary, treasurer, and corporate counsel is the same person for parent and subsidiary. Also, 56 of 57 subsidiary boards have at least one member who is also a parent director or an officer in the parent firm.

[14] Those studies articulate the agency problem between controlling and noncontrolling shareholders but not provide empirical evidence.

Direct expropriations related to control are often discussed in the popular press. For instance, Mr. LeBow, who owned 60-percent of the Brooke Group, apparently benefited from favorable loans, and from selling assets to his other controlled interests at non-arms-length prices (Cohen 1993). The Wall Street Journal notes that "a look at Mr. LeBow's Securities and Exchange Commission filings for the past three years shows how easily a dominant shareholder can tap into the cash stream of a company he controls."

Empirical research also provides evidence on expropriation by controlling shareholders. For example, Maury and Pajuste (2002) find that the dividend payout made to noncontrolling shareholders is lower than that to controlling shareholders. Moreover, studies linking ownership structure and performance find a "roof-shaped" relationship, which suggests that as the controlling ownership increases beyond a certain level, controlling shareholders begin to retain more private benefits that are not shared with the noncontrolling shareholders (Stulz 1988; Wruck 1989; McConnell and Servaes 1990; Morck et al. 1998).[15] In this section, I will investigate the effect of controlling-noncontrolling shareholder agency problem on firms' classification choice of noncontrolling interests.

[15] However, some studies provide competing evidence suggesting no exploitative behavior through controlling ownership of publicly-traded companies. In particular, Denis and Denis (1994) find that majority-owned firms are as profitable as diffusely-held firms. Holderness and Sheehan (1988) find that majority-owned firms do not invest in overly risky capital projects nor do they provide excessive executive compensation.

2.1.1 Family firms

Recent research finds that a nontrivial fraction of publicly-traded U.S. companies consists of family firms where founders or descendants control senior management positions (Anderson and Reeb 2003). Even among S&P 500 firms, roughly one third are family firms in which family members control approximately 19% of the shares outstanding (Anderson and Reeb 2003). However, extant literature argues that while family firms in the U.S. have less severe owner-manager agency problems, they suffer from more severe agency conflicts between family owners and other shareholders (Gilson and Gordon 2003; Fan and Wong 2003).[16]

The level of financial reporting quality supplied by family firms may depend on the relative dominance of the manager-shareholder agency problem (the alignment effect) versus the agency problem due to family control (the entrenchment effect). The alignment effect predicts that family firms would provide higher-quality financial information due to: 1) better alignment of interests between shareholders and managers (or firm value); 2) longer investment horizon of family members (Stein 1998 and 1989; Chami 1999; James 1999; Anderson and Reeb 2003); and 3) incentives to preserve family reputation (Anderson et al. 2003). In contrast, the entrenchment effect implies that given founding family members have incentives and opportunity to extract wealth from other shareholders, family firms are more likely to manipulate their financial reports for their private benefits.

[16] To my best knowledge, there is no empirical evidence documenting this type of agency problems in U.S. family firms. Wang (2006) argue that the results of Fan and Wang (2003) may not be generalized to the countries like U.S. with stronger investor protection.

In contrast to the competing theories regarding the effect of concentrated family ownership on the quality of financial reports, empirical studies find that family firms report better quality earnings (i.e., less positive discretionary accruals, greater earnings informativeness, higher earnings persistence, and higher earnings predictability) (Wang 2006; Ali et al. 2007), and are more likely to provide bad news warnings in management earnings forecast (Ali et al. 2007), suggesting the alleviation of the owner-manager agency problem.

However, I argue that agency problems that arise due to any controlling ownership would be more serious in family firms when compared to other firms. Because of better alignment of interests between family members and managers, family-owned parent companies are more likely to behave opportunistically when dealing with noncontrolling shareholders of subsidiaries than parent companies that are not controlled by family members. Consistent with this argument, I predict that, when reporting noncontrolling interests in the balance sheet, family firms are more likely to resort to a classification that presents a favorable picture of its financial position from the perspective of stakeholders other than noncontrolling shareholders. Accordingly, I expect a negative relation between family membership and the decision to classify noncontrolling interests as liabilities.

H1: Family firms are less likely to classify noncontrolling interests as liabilities.

2.1.2 Exposure to litigation by noncontrolling shareholders

Expected litigation risk under the federal securities laws is thought to be an important determinant of public companies' disclosure decisions (e.g., Francis et al. 1994; Skinner 1994 and 1997; See Healy and Palepu, 2001, for a review). In the setting I

examine, firms can face lawsuits from noncontrolling shareholders for any alleged expropriation by controlling shareholders. Both securities regulations and court decisions indicate a concern for protecting the rights of noncontrolling shareholders. For example, the Securities and Exchange Commission (SEC) requires an independent assessment of the "Fairness of the Transaction' under Rule 13e-3 of Securities and Exchange Act of 1934 when a controlling owner acquires a noncontrolling interest.[17] In a similar vein, court decisions on conflict of interests in parent-subsidiary transactions (e.g., assets sales) establish that noncontrolling interests have the right to require that benefits be distributed on a pro-rata basis.[18]

The litigation risk faced by controlling shareholders is highlighted in a recent case involving Ford Motor Co. of Canada Ltd. in which a court awarded judgment to its noncontrolling shareholders as the original buyout price paid by the controlling shareholder, Ford U.S., was not deemed a fair consideration (Transfer Pricing Report 617, 03/17/2004). Another case in point is the claim brought by the noncontrolling shareholders in the management buyout of Quiznos, where a Denver Judge ruled that the original offer of $8.50 per share substantially underestimated the per-share fair value of at least $32.50.[19]

Extant research argues that firms with "deep pockets" are exposed to higher litigation risk (Francis et al. 1994, Roger and Stocken 2005). For instance, larger firms

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[17] See http://www.sec.gov/about/forms/rule13e-3.pdf (accessed on 11/23/2006).

[18] Johnson et al. (2000) argues that, in common law countries, the duty of loyalty principle, or fiduciary duty principle is specifically employed to deal with the situations of conflict of interests (e.g., controlling and noncontrolling interests). "In the case of fiduciary duty, the very fact that the interests of a director are in conflict with those of the company itself constitutes the basis for liability, and if the interests of the company are prejudiced as a result of such conflict, liability for breach of fiduciary duty arises..."(Shibuya 1972, p. 127).

[19] see http://www.forbes.com/business/global/2004/0301/018.html (accessed on 01/28/2008)

tend to have better insurance that provides resources for plaintiff attorney fees as well as paying defense costs, making them an attractive target for lawsuits. The auditing literature also documents that auditors are more exposed to litigation risk when they work for larger clients (Carcello and Palmrose 1994). Consistent with these findings, I posit that when parent firms have "deep pockets," they face a higher risk of litigation from noncontrolling shareholders.

Recent studies suggest that firms with higher litigation costs are more likely to engage in economic behavior that would reduce the likelihood of class action lawsuits under securities laws. From a valuation standpoint, Lowry and Shu (2002) provide evidence that firms with higher litigation risk substantially underprice their IPOs to lower expected litigation costs. From a disclosure standpoint, studies show that managers preemptively disclose bad news to prevent large stock price declines on earnings announcement dates, and thereby, reduce the potential costs of shareholder lawsuits, (e.g., Skinner 1994; Kasznik and Lev 1995).[20]

In my setting, this suggests that firms with large litigation exposure from noncontrolling interests are more likely to follow business practices that would be construed as respecting the rights of noncontrolling shareholders. Analogously, from an accounting perspective, I expect these firms will adopt the liability classification for noncontrolling interests as a signal of fair dealing and protection of the rights of noncontrolling shareholders. Therefore, my hypothesis is:

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[20] Previous studies (Skinner, 1994; Kasznik and Lev, 1995) argue that *early* voluntary disclosure of large negative earnings surprise reduces expected legal costs in two ways. First, if the information is disclosed "voluntarily" prior to the mandated release date, it is difficult for the plaintiff, who does not know for sure when the manager first received the bad news, to argue that the manager withheld information. Second, disclosing early limits the period of nondisclosure, thereby reducing the damages that plaintiffs can claim.

H2: Firms with "deep pockets" are more likely to classify noncontrolling interests as liabilities.

While prior research views "deep pockets" purely based on the total economic resources at a firm's disposal, I view "deep pockets" in my context as the total economic resources controlled by parent firms relative to the potential claims by noncontrolling shareholders. I argue that parent firms become more attractive litigation targets when they are more capable of covering potential litigation claims from noncontrolling shareholders.

2.2 Manager-shareholder agency problem

Because of the information asymmetry and the conflict of interest between managers and shareholders, managers have incentives and opportunities to expropriate wealth from shareholders, resulting in deadweight losses, and thus, a reduction in firm value (Berle and Means, 1932; Jensen and Meckling, 1976; Watts 2003a). Accounting research suggests that financial disclosures can be used to alleviate owner-manager agency problems, and the consequent reduction in firm value, through providing verifiable information that is useful in monitoring and evaluating managerial decisions (Watts and Zimmerman 1986; Bushman and Smith 2001). In this section, I will investigate the effect of owner-manager agency problem on firms' classification choice of noncontrolling interests.

2.2.1 Alleviate information asymmetry problems in growth firms

Previous studies argue that growth firms are more likely to have pronounced information asymmetry problems that are generated from the nature of the firm's investment opportunity or growth options (Smith and Watts 1992). The increases in

information asymmetry provide more opportunities to managers to manipulate financial reports to transfer wealth to themselves at the expense of uninformed shareholders (e.g., excessive compensation of managers). Such behavior reduces resources available for positive NPV projects, generating deadweight losses due to foregone projects. Therefore, capital markets tend to charge a higher cost of capital to growth firms to price protect for expected opportunistic behavior on the part of managers (Jensen and Meckling 1976; Watts and Zimmerman 1986).

Extant literature argues that accounting conservatism can alleviate information asymmetry problem between managers and shareholders through: 1) constraining opportunistic managerial behavior in overstating unverifiable net assets by requiring higher verification standards for gain recognition (Watts 2003); 2) limiting excessive compensation to managers that is costly to firms (Watts 2003); and 3) assisting in identifying negative NPV projects by timely recognition of economic losses, thus playing a monitoring role in firms' investment policies (Ball 2001). Thus, to alleviate the adverse effects of information asymmetry on the cost of capital, managers of growth firms are more likely to adopt conservative accounting practices. Applied to my setting, growth firms are more likely to disclose noncontrolling interests as liabilities. Accordingly, I expect a positive relation between firms' growth prospects and the probability of classifying noncontrolling interests as liabilities.

H3: Growth firms are more likely to classify noncontrolling interests as liabilities.

2.2.2 Alleviate manager-shareholder agency problem in financially-constrained firms

Financial economics literature points out that investors will charge a higher cost of capital to firms with uncontrolled agency problems as compensation for a higher

expropriation risk (e.g., Fama and Jensen 1983). Accordingly, firms in this category are unable to find financing for all of their profitable projects (i.e., face a "financially-constrained" optimization problem; Lamont et al. 2000), and therefore, are forced to make suboptimal real decisions, which are reflected in the firms' stock prices (Sharpe 1964, Lintner 1965, and Merton 1973; Bernanke and Gertler 1989, Gertler and Gilchrist 1994; see Bernanke et al. 1996 for a review).[21] Consistent with this argument, recent financial economics research documents that asset pricing factors that proxy for financial constrains are positively associated with equity returns (Campello and Chen 2005; Whited and Wu 2005).

To the extent financial constraints are a reflection of uncontrolled agency problems, managers would take actions (including accounting choices) to resolve manager-shareholder agency conflicts. Consistent with my earlier discussions, I predict that firms facing financial constraints are more likely to classify noncontrolling interests as liability as part of a conservative financial reporting strategy (Ball 2001, Watts 2003 and 2006, Ahmed and Duellman 2007), which leads the following hypothesis:

H4: Financially-constrained firms are more likely to classify noncontrolling interests as liabilities.

[21] Following Lamont et al. (2001), financial constraints are frictions that prevent a firm from funding all desired investments. This inability to fund investment might be due to various reasons such as credit constraints, inability to issue equity, dependence on bank loans, or illiquidity of assets. I do not use "financial constraints" to mean financial distress, although the two constructs are undoubtedly correlated.

CHAPTER 3

CREDIT MARKET EFFECTS OF BALANCE-SHEET CLASSIFICATION OF NONCONTROLLING INTERESTS

Given the relevance of accounting leverage ratios for credit risk assessment (Shi 2003; Ashbaugh et al. 2006; Jiang 2005; Lee 2005), and the importance of accounting conservatism to creditors (Ahmed et al. 2002; Beatty et al. 2006; Zhang 2006), I consider the following research question in this section: does the balance-sheet classification of noncontrolling interests provide relevant information to the credit market? Most of the prior research tries to demonstrate whether a claim (e.g., unrecorded capital lease commitments or unfunded pension liabilities) is viewed by the market as debt- or equity-like (e.g., Bowman 1980; Dhaliwal 1986; Kimmel and Warfield 1995; Cheng et al. 2003) through examining how the claim affects the equity market's assessments of the firm's systematic risk.[22] However, prior research has largely overlooked the role of accounting classification for credit market's assessment of risk. I appeal to the credit market to shed light on the importance of accounting classification for the following two reasons. First, creditors are concerned about the firm's downside risk, which is generally determined by the ability of firms to pay interest and principal (i.e., creditworthiness). From the creditors' perspective, accounting leverage ratios are important indicators that help "broadly define a company's position relative to rating categories" (2002 S&P Corporate Ratings Criteria page 53-55). Thus, creditors appear to consider accounting liability-equity classification in their assessment of credit risk. Secondly, the credit market plays a substantial role in satisfying the external financing needs of corporate America. For

example, in 2002 (2000), U.S. corporations raised more than $1.2 trillion in the bond market compared to $120 ($200) billion in the equity market (Beller 2003).

Given the prominence of credit-based financing in the capital markets, the question whether the accounting classification of corporate claims is associated with the credit market's risk assessment is important. Specifically, I investigate whether firms' decision on the placement of noncontrolling interests on the balance sheet provides creditors with relevant information about firms' desire to alleviate various agency conflicts.[23]

Prior studies argue that firms adopting conservative financial reporting have lower cost of debt, because conservatism helps creditors in terms of: 1) decreasing the downside risk from limiting inappropriate wealth transfer to equity holders (e.g., Ahmed et al. 2002); and 2) providing early signals about the deterioration of firms' financial performance (Zhang 2006). For example, Ahmed et al. (2002) document that firms employ accounting conservatism to solve the bondholder-shareholder conflicts on dividend distribution, and firms using more conservative reporting have higher credit rating. Zhang (2006) also finds that accounting conservatism benefits firms in terms of lower initial interest rates.

I extend the prior research on accruals-based conservatism to conservatism in balance sheet classification. In my setting, I view the classification of noncontrolling

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[22] Under the assumption of perfect markets, riskless debt and no taxes, several studies show that debt-like obligations affect systematic equity risk through financial leverage.

[23] For example, discussions with a senior executive of a major credit-rating agency suggest that the agency's analysts do not consider noncontrolling interests as equity in their financial analysis if: 1) there is put option available for noncontrolling shareholders; 2) if there is a plan to sell the subsidiary; or 3) if noncontrolling interests have a unilateral right to block distributions from subsidiary to parent firm. However, I argue that the classification choice of noncontrolling interests still matters to creditors in the

interests in the liabilities section as a conservative financial reporting choice as it leads to understatement of net assets. Consequently, I posit that creditors are more likely to favorably assess the credit risk of companies choosing the liability classification, as firms have signaled their intent to alleviate various agency problems by adopting a conservative financial reporting practice. Overall, I expect a positive relationship between firms' liability classification choice of noncontrolling interests and creditors' evaluation.

H5: Firms' decision to classify noncontrolling interests in the liability section of the balance sheet will be positively associated with the credit market's assessment of firm risk.

An alternative prediction is that the accounting liability-equity classification does not convey relevant information to the market. For example, Kimmel and Warfield (1995) and Cheng et al. (2003) find that investors view mandatorily-redeemable preferred stock as equity, and non-redeemable preferred stock as debt, indicating that securities are treated by the stock market in a fashion which is different from the accounting treatment the securities receive in financial reports.[24] This implies that liability-equity classification has no effect on investors' valuation of firms. Both of these papers conclude that liability-equity classification "may lack representational faithfulness."

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sense that it reflects firms' desire to use balance sheet conservatism to limit various agency conflicts rather than merely reflect the perceived liability/equity nature of the item.

[24] Following ASR268, "Presentation in financial statements of 'redeemable preferred stocks", RPFD should not be classified as equity, suggesting that at least RPFD is regarded as non-equity. Later, SFAS 150, "Accounting for certain financial instruments with characteristics of both liabilities and equity", requires that mandatorily redeemable preferred securities be classified as liability.

CHAPTER 4

RESEARCH DESIGN

4.1 Determinants of the decision to classify noncontrolling interests as liabilities

I use a probit regression to model the probability of disclosing noncontrolling interests in the liability versus mezzanine section as a function of the firm characteristics predicted by the hypotheses in section 3 and various controls:

$$\begin{aligned} Prob(LIABILITY_i) = F(&\beta_0 + \beta_1 FAMILYFIRM_i + \beta_2 NONCONTROLLING_i \\ &+ \beta_3 INV\_GROWTH_i + \beta_4 CONSTRAIN_i + \beta_5 SIZE_i \\ &+ \beta_6 VOLATILITY_i + \beta_7 Auditor_i + \varepsilon_i), \end{aligned} \quad (1)$$

where

$LIABILITY_i$ = one if firm i disclosed noncontrolling interests in the liability section and zero if in the mezzanine section,

$FAMILYFIRM_i$ = one if firm i is a founding family firm as identified by Business Week, and zero otherwise,

$NONCONTROLLING_i$ = natural logarithm of the ratio of total assets to noncontrolling interests of firm i (proxy for litigation risk),

INV_GROWTH_i = ratio of book value to market value of common equity of firm i,

$CONSTRAIN_i$ = one if firm i had negative average free cash flows calculated over the preceding five years, and zero other otherwise,[25]

$SIZE_i$ = natural logarithm of the beginning-of-year total assets of firm i,

[25] Following Standard and Poor's Corporate Ratings Criteria (2002 S&P Corporate Ratings Criteria), free cash flows are defined as cash flows from operating activities (Compustat #308) minus capital expenditures (Compustat #128).

$VOLATILITY_i$ = firm i's 2-digit SIC decile rank of the standard deviation of noncontrolling interests scaled by the standard deviation of total liabilities in the preceding five years,

$Auditor_i$ = auditor dummies.

Based on *H1*, I predict a negative coefficient on *FAMILYFIRM*. I use *NONCONTROLLING* as a proxy for firms' litigation risk from noncontrolling shareholders and predict a positive coefficient for it. I use the book-to-market ratio as a proxy for the inverse of firm growth prospects, and consistent with *H3*, expect a negative coefficient on *INV_GROWTH*. Consistent with *H4*, I expect the coefficient of *CONSTRAIN* to be positive.

I also include two control variables. Because perceptions of excess volatility may have negative implications for firm values, firms with noncontrolling interests that are significantly more volatile than the firms' existing liabilities may be reluctant to disclose noncontrolling interests in the liability section. Therefore, I expect a negative coefficient for the *VOLATILITY* variable, consistent with the notion that firms with more volatile noncontrolling interests than liabilities are more likely to disclose noncontrolling interests in the mezzanine section. I also include the beginning-of-year total assets as a control for the effect of firm size on firms' classification choice. In addition, auditor dummies are included to control for the possible influence of auditors' opinion on firms' classification choice (Antle and Nalebuff 1991).[26]

[26] Literatures argue that published financial statements should be read as "a joint statement from the auditor and manager" (Antle and Nalebuff 1991), indicating that auditors have significant influence on firms' financial reporting.

4.2 Credit market effects of the balance-sheet classification of noncontrolling interests

I use credit rating to proxy for the market assessment of firms' credit risk. Previous studies find that a firm's credit rating is positively associated with the probability that its future cash flows will be sufficient to pay interest and principal in a timely manner. For example, Altman (1992) documents that more than 90 percent of defaulting issues are rated by S&P below investment grade (BBB) at least one year prior to default. Hand et al. (1992) and Liu et al. (1999) find that bond return is positively related to upgrades in bond rating. Together, these studies suggest that credit ratings are an appropriate proxy for firms' credit risk. To test H5, I therefore regress credit rating on the balance sheet classification of noncontrolling interests (*LIABILITY*) and other control variables:

$$RATING_i = \gamma_0 + \gamma_1 LIABILITY + \gamma_i' CONTROLS_i + \upsilon_i , \quad (2)$$

where *RATING* is the long-term issuer credit rating assigned by Standard & Poor's six months after the fiscal year end. Note that the preceding discussion suggests that there are differences in characteristics between firms that choose to disclose noncontrolling interests in the liability section versus the mezzanine section. This suggests that *LIABILITY* is endogenous and ordinary least-squares (OLS) estimation of Eq. (2) will not provide consistent parameter estimates given *LIABILITY* is likely correlated with the error term υ. A common approach to deal with endogeneity is to use an instrumental variables estimator. Accordingly, I employ fitted probabilities from Eq. (1) as an instrument for *LIABILITY* (Wooldridge, 2002, pp. 623–625).

I allow a six-month lag between the close of the fiscal year and the production of credit ratings to ensure that rating agencies have sufficient time to incorporate the information disclosed in firms' annual reports into their credit rating decisions. The ratings range from AAA (highest rating) to D (lowest rating – payment in default), reflecting S&P's opinion of an issuer's overall creditworthiness. Following Ashbaugh et al. (2006), I recode the credit rating data (Compustat Quarter data *SPDRC*) to remove unassigned codes and collapse the ratings into seven categories, with a higher value of *RATING* indicating a better credit rating.[27] Ordered probit and logit models are used to estimate Eq. (2) because I cannot assume a constant difference in credit risk between adjacent rating categories.

Consistent with H5, I expect a positive coefficient for *LIABILITY*, suggesting that creditors assign high ratings to firms that classify noncontrolling interests as liabilities. Following prior literature (e.g., Fisher 1959; Ziebart and Reiter 1992; Sengupta 1998; Shi 2003; Ashbaugh et al. 2006), I identify the following control variables that are associated with credit ratings:

FAMILYFIRM as defined above, which is expected to be positively correlated with credit ratings (Anderson et al., 2003),

LEV = ratio of total debt to total assets. The higher this ratio, the higher the firm's default risk and the lower will be its credit rating,

SIZE = natural logarithm of beginning-of-the year total assets. Larger firms are expected to have lower default risk, and hence, higher rating,

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[27] Appendix A demonstrates the recoding methods employed by Ashbaugh et al. (2006) and Klock et al. (2005). As a sensitivity check, I also recode the credit ratings following Klock et al. (2005) to allow credit ratings to range from 1 (D ratings) to 22 (AAA ratings). Table C.5 of Appendix C shows that the results are qualitatively similar to those presented in Table 4.

CAP_INTEN = property, plant and equipment scaled by total assets. Capital intensity is expected to be positively correlated with credit ratings,

INT_COV = operating income before depreciation divided by interest expense. This ratio is expected to be positively associated with credit ratings,

ROA = income before extraordinary items divided by total assets. ROA is expected to be positively correlated with credit ratings.

CHAPTER 5

SAMPLE AND UNIVARIATE ANALYSIS

For my determinants analysis, my sample includes 128 S&P 500 firms during fiscal year 2004 with noncontrolling interests that have COMPUSTAT data necessary for my analysis.[28] Firms' balance-sheet classification choice of noncontrolling interests is manually collected from Form 10-K. Exhibit 1 (Exhibit 2) contains an illustrative example of a firm that discloses noncontrolling interest in the liability (mezzanine) section. Following the 2003 Business Week family firm classification, I identify 48 (37.5%) family firms in my sample.[29] Of these 128 firms, 31 (24%) reported noncontrolling interests in the liability section, while 97 (76 %) reported noncontrolling interests in the mezzanine section.

In my analysis on the association between credit rating and the classification decision, the sample includes 106 of the 128 firms with long-term domestic issuer credit rating data (COMPUSTAT Quarterly data *SPDRC*). Comparable to the full sample, I find that 26 of the 106 firms (25%) reported noncontrolling interests in the liability section while 80 (75%) reported noncontrolling interests in the mezzanine section.

Panel A of Table 1 presents descriptive statistics on the two groups of firms as well as p-values from tests of whether the means and medians of the two groups differ. Although I use log-transformed values for total assets in my primary analysis, I report

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[28] I do not model the decision of firms to have controlling interests in other companies. However, I did compare S&P 500 firms with and without noncontrolling interests in terms of various firm characteristics (i.e., *FAMILYFIRM*, *CONSTRAIN*, *INV_GROWTH*, *SIZE*, and *ROA*). Table C.1 of Appendix C shows that these two groups of firms are not significantly different from each other in terms of the firm characteristics I examine.

[29] In their November 10, 2003 issue, Business Week identifies 177 (35.4%) S&P 500 firms as "family firms". Business Week classification is based on Anderson and Reeb's (2003) methodology. Given the

raw values in this table for ease of interpretation. In univariate comparisons of the two groups of firms, I find that *FAMILYFIRM*, *NONCONTROLLING*, *INV_GROWTH*, and total assets are significantly different. The evidence suggests that family firms are more likely to disclose noncontrolling interests in the mezzanine section, while firms with higher litigation exposure to noncontrolling shareholders, larger firms, and growth firms are more likely to disclose in the liability section.

Panel B of Table 1 presents descriptive statistics on the mean and median credit ratings of the two groups of firms. Univariate tests provide some evidence that firms classifying noncontrolling interests in the liability section have higher credit ratings than firms classifying noncontrolling interests in the mezzanine section.

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stickiness in family ownership (Ali et al. 2007), I feel that family ownership in 2003 would be a good proxy for that in 2004.

CHAPTER 6

MULTIVARIATE RESULTS

6.1 Determinants of the reporting decision

In Panel A of Table 2, I report the correlations among the variables in Eq. (1). Pearson (Spearman) correlations are in the upper right (lower left). Consistent with my univariate descriptive statistics, *LIABILITY* is negatively correlated with *FAMILYFIRM*, and positively correlated with *NONCONTROLLING* and *SIZE*.

The results of the probit, logit, and OLS estimations are in Table 3.[30] The negative coefficient on *FAMILYFIRM* suggests that family firms are more likely to adopt mezzanine classification. This is consistent with the argument that founding family members are more likely to adopt classification that presents a favorable picture of its financial position from the perspective of stakeholders other than noncontrolling shareholders. The coefficient on *NONCONTROLLING* is positive and significant, suggesting that firms with more economic resources controlled by parent firms relative to potential claims by noncontrolling shareholders (i.e., "deep pocket") are more likely to disclose in the liability section. This is consistent with my argument that such firms face higher litigation risk from noncontrolling shareholders, and thus are more likely to adopt the liability classification to signal fair dealing and protection of the rights of noncontrolling shareholders.

The coefficient on *INV_GROWTH* is negative and significant, demonstrating that growth (value) firms are more likely to include noncontrolling interests in the liability

[30] I estimate Eq. (1) in both raw values as well as ranked values for the independent variables. Table C.2 in Appendix C shows that the results are qualitatively similar.

(mezzanine) section. This result supports *H3* that growth firms are more likely to adopt a conservative accounting classification as part of a strategy to alleviate information asymmetry problems between managers and shareholders, and thus lower their cost of capital. The insignificant coefficient on *CONSTRAIN* does not support *H4*. With respect to control variables, the coefficient on *SIZE* is positive and significant, indicating that larger firms are likely to adopt conservative accounting treatment. I do not find a significant coefficient on *VOLATILITY*.

I use coefficient estimates to calculate the marginal effect of each independent variables on *LIABILITY* to evaluate its economic significance (Wooldridge 2002, pp. 458–9). The marginal effect of *FAMILYFIRM* indicates that family firms are 17.9 percentage points less likely to classify noncontrolling interests as liabilities, holding all other variables at their mean values. In addition, the probability of liability classification increases by 11.3 percent and decreases by 10.3 percent when moving from the 25th percentile to the 75th percentile of *NONCONTROLLING* and *INV_GROWTH* in the sample. Overall, the marginal effects of family control, litigation risk, and information risk from growth opportunities appear to be economically important.

To sum up, the empirical evidence in this section supports the hypotheses that firms with greater exposure to litigation risk from noncontrolling shareholders and growth firms are more likely to classify noncontrolling interests as liability. However, family firms are more likely to adopt the mezzanine classification, reflecting more serious controlling-noncontrolling shareholder agency conflicts due to family control.

6.2 Credit market analysis of reporting decisions

In this section, I examine whether the balance sheet classification of noncontrolling interests is associated with credit ratings after controlling for the endogeneity of firms' classification choices and other factors affecting credit ratings. The empirical analyses in this subsection are based on the instrumental variable methods described earlier.

In Panel B of Table 2, I report the correlations among the variables in Eq. (2). Pearson (Spearman) correlations are in the upper right (lower left). Consistent with *H5*, *LIABILITY* is positively correlated with *RATING*.

Table 4 presents formal tests of *H5*. The coefficient on *LIABILITY* is significant and positive, suggesting that firms classifying noncontrolling interests in the liability section receive a higher credit rating. This finding is consistent with my hypothesis that creditors are more likely to favorably assess the credit risk of companies that conservatively classify claims on their balance sheet. This is because conservatism in balance sheet classification may help alleviate downside risks through signaling restraint on the part of controlling shareholders as well as providing early signs of deterioration in firm performance. As expected, credit ratings are positively associated with firms' size, ability to cover interest (*INT_COV*), and profitability (*ROA*). I do not find *FAMILYFIRM*, *LEV*, and *CAP_INTEN* have significant impact on *RATING* in my sample.

Table 4 shows the results obtained from running ordered probit and ordered logit regressions using fitted values from the probit and logit estimation, respectively, of Eq. (1) as an instrument. Two-sided p-values are calculated based on bootstrap standard errors using 1000 replications and are adjusted for heteroskedasticity (White 1980). By

assuming Eq.(1) and Eq.(2) are both linear, I also employ a 2SLS to estimate Eq. (2) as a sensitivity check. One common reservation about using linear probability models in bond rating studies is that the approach assumes the average credit rating difference between any two adjacent ratings is the same. Several studies that compare the performance of the linear probability model and the ordered probit model (e.g., Kaplan and Urwitz 1979; Noreen 1988) find that the conceptually-superior ordered probit model performs no better than the simplistic linear probability model in terms of rating prediction. In addition, Angrist and Krueger (2001) argue that 2SLS can typically capture an average economic effect even for dummy endogenous regressors. Table 4 shows that the tenor of my results does not change across the different estimation methods.[31]

While previous literatures argue that liability-equity classification has no effect on stockholders' valuation of firms (Kimmel and Warfield 1995; Cheng et al. 2003), I find that firms' classification choice matters to creditors. I think this is because prior studies focus on whether the classification provides stock market with information about the liability/equity nature of a corporate claim. However, my study focuses on the value relevance of classification choice to creditors in the sense that it reflects firms' desire to use balance sheet conservatism to limit various agency conflicts.

[31] To ensure that my results are not sensitive to the choice of control variables included in the credit rating model, I also perform the estimation with no control variables in the credit rating model. Table C.6 in Appendix C shows that the results are similar.

6.3 Additional analysis

6.3.1 Firm characteristics

Consistent with prior research on conservatism (Givoly et al. 2007), I find that the balance-sheet placement of noncontrolling interests is highly sticky over time (see footnote 7).[32] However, the measurement date of my independent variables so far is driven by the calendar time (i.e., 2004) that I chose to collect information on my dependent variable. To examine the sensitivity of my results to the measurement period of the independent variables, I re-measure *NONCONTROLLING*, *INV_GROWTH* and *CONSTRAIN* to proxy for firms' litigation risk, growth prospectus, and financial constrain status in a longer time horizon. Specifically,

NONCONTROLLING = natural logarithm of the average ratio of total assets to noncontrolling interests calculated over the preceding five years for firm i,

INV_GROWTH= one if firm i's ratio of book value to market value of common equity calculated over the preceding five years is lower than industry mean, and zero other otherwise.

CONSTRAIN = one if firm i's average free cash flows calculated over the preceding five years is lower than industry mean, and zero other otherwise,

Table C.3 of Appendix C shows that the tenor of my results is unaffected, indicating that firms' such consistent classification choice is not sensitive to the measurement period of the independent variables. More important, this suggests that the determinants I investigate represent certain stable firm characteristics that affect firms'

"sticky" classification choice. Such results are also consistent with the argument that the degree of firms' conservatism shouldn't vary significantly from period to period because it is determined by firm characteristics that are fairly stable over time (Givoly et al. 2007).

6.3.2 Earnings quality and liability classification choice

To the best of my knowledge, this is the first paper documenting that firms employ liability classification of hybrid securities as part of their conservative financial reporting strategies. Fields et al. (2001) argue that management will adopt a multi-dimensional financial reporting strategy for the firm by jointly choosing a set of accounting choices (Hagerman and Zmijewski 1979; Zmijewski and Hagerman 1981).[33] In other words, given a single accounting choice is just one element of the optimal set of financial reporting choices, I expect different accounting choices to be highly correlated. In this section, I investigate relationship between firms' classification choice of noncontrolling interests and earnings quality.[34]

I predict that firms adopting liability classification are more likely to provide higher-quality earnings. Given liability classification of noncontrolling interests is considered as one of firms' conservative financial choices, firms' doing so may reflect a

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[32] Givoly et al. (2007) argues that the firm's degree of reporting conservatism is stable because it is mostly affected by firm characteristics that would not fluctuate significant from period to period.

[33] Most of the extant literatures focus on one accounting choice at a time (Fields et al. 2001). Exceptions are Hagerman and Zmijewski (1979), and Zmijewski and Hagerman (1981). Both papers simultaneously consider four specific accounting choices (LIFO vs. FIFO, straight-line vs. accelerated depreciation, the amortization period of past service pension costs, and flow-through vs. deferral method for the investment tax credit) and analyze underlying managers' incentives. However, they don't provide any evidence on the relationship among those accounting choices and only focus on income-statement accounting choices.

[34] My measure of earnings quality is based on firms' discretionary accrual which is considered to be a summary measure of timing differences of all accounting choices (Watts and Zimmerman, 1990, p. 138). Thus, I am investigating the relationship between firms' balance-sheet classification choice and the accounting choices affecting income statement.

demand for higher-quality accounting information as a whole for alleviating various types of agency problem concerns. Consistent with this notion, empirical studies document that different attributes of firms' financial accounting information are highly correlated. For example, Francis et al. (2004) investigates seven attributes of earnings (i.e., accrual quality, persistence, predictability, smoothness, value relevance, timeliness, and conservatism) and find that correlations among those attributes are positive and significant.[35]

To examine the association between firms' classification choice of noncontrolling interests and earnings quality, I consider the two measures of earnings quality widely used in the previous literature. Following Ashbaugh et al. (2006) and Kothari et al. (2005), I alternatively measure ***Earnings Quality*** as the standard deviation of firm-specific performance-matched discretionary accruals from the prior five years, where discretionary accruals are calculated from a cross-sectional estimation of Dechow and Dichev's (2002) model modified by McNichols (2002), or from a cross-sectional estimation of the Dechow et al. (1995) model. I estimate the regression model using the population of COMPUSTAT firms at the 2-digit SIC code level for each year.

Table 5 presents descriptive statistics on the two groups of firms as well as p-values from tests of whether the means and medians between them differ. In the univariate comparisons, I find that ***Earnings Quality*** is significantly different, suggesting that firms adopting liability classification have earnings of higher quality. This indicates

[35] In stead of examining specific accounting choices, Francis et al. (2004) focus on summary measures of different attributes of earnings. However, Fields et al. (2001) argue that both accounting choices and earning management (or earnings quality) are used to influence the outcome of accounting information system to achieve certain goals (e.g., alleviate agency problems).

that firms use multiple accounting choices to satisfy the demand for higher-quality financial information to address agency problems (Fields et al. 2001).

CHAPTER 7

CONCLUSION

In this dissertation, I examine firms' balance-sheet classification decision of noncontrolling interests, and the economic significance of the classification choice from the credit market standpoint. I find that firms with greater exposure to litigation risk from noncontrolling shareholders (i.e., firms with "deep pockets") and firms with more serious information asymmetry problem (proxied by the extent of growth opportunities) are more likely to classify noncontrolling interests as liabilities. However, consistent with more serious agency conflicts due to controlling ownership, I find that family firms are more likely to adopt the mezzanine classification. Contrary to expectations, my analyses did not find that financially-constrained firms are more likely to adopt liability classification. Moreover, I demonstrate that firms adopting liability classification choice have higher-quality earnings, suggesting that it is employed together with other accounting choices to satisfy the demand for higher-quality financial information.

After controlling for the endogeneity of the classification choice and various determinants of credit risk, I find that on average, firms that classify noncontrolling interests as liabilities have credit ratings that are around one notch higher than those of firms that include them in the mezzanine section. This is consistent with my hypothesis that creditors are more likely to favorably assess the credit risk of companies adopting conservative financial reporting.

My results should be of interest to both standard setters and academia. First, my study addresses the current debate about the classification of noncontrolling interests. To my best knowledge, this is the first paper providing consistent evidence on the

determinants and informativeness of firms' balance sheet classification choices if noncontrolling interests. Second, my dissertation provides evidence for the debate over whether the balance-sheet placement of information is relevant to investors. My credit rating analysis indicates that accounting balance-sheet classification provides information about the market's assessment of firms' credit risk. Thus, limiting accounting choices could potentially eliminate relevant information from financial statements in situations in which significant information asymmetry and agency costs may be present. Third, this study contributes to the accounting choice literature. Fields et al. (2001) note that some methodological limitations in previous work have hampered progress, for example, failing to correct for endogeneity problems and failure to model multiple incentives driving a reporting choice. My analyses and results provide support for their assertion that resolving these issues can yield value to researchers studying firms' accounting choices and the consequences of those choices.

Figure 1

Two types of agency problems: manager-shareholder agency problem and controlling-noncontrolling shareholder agency problem

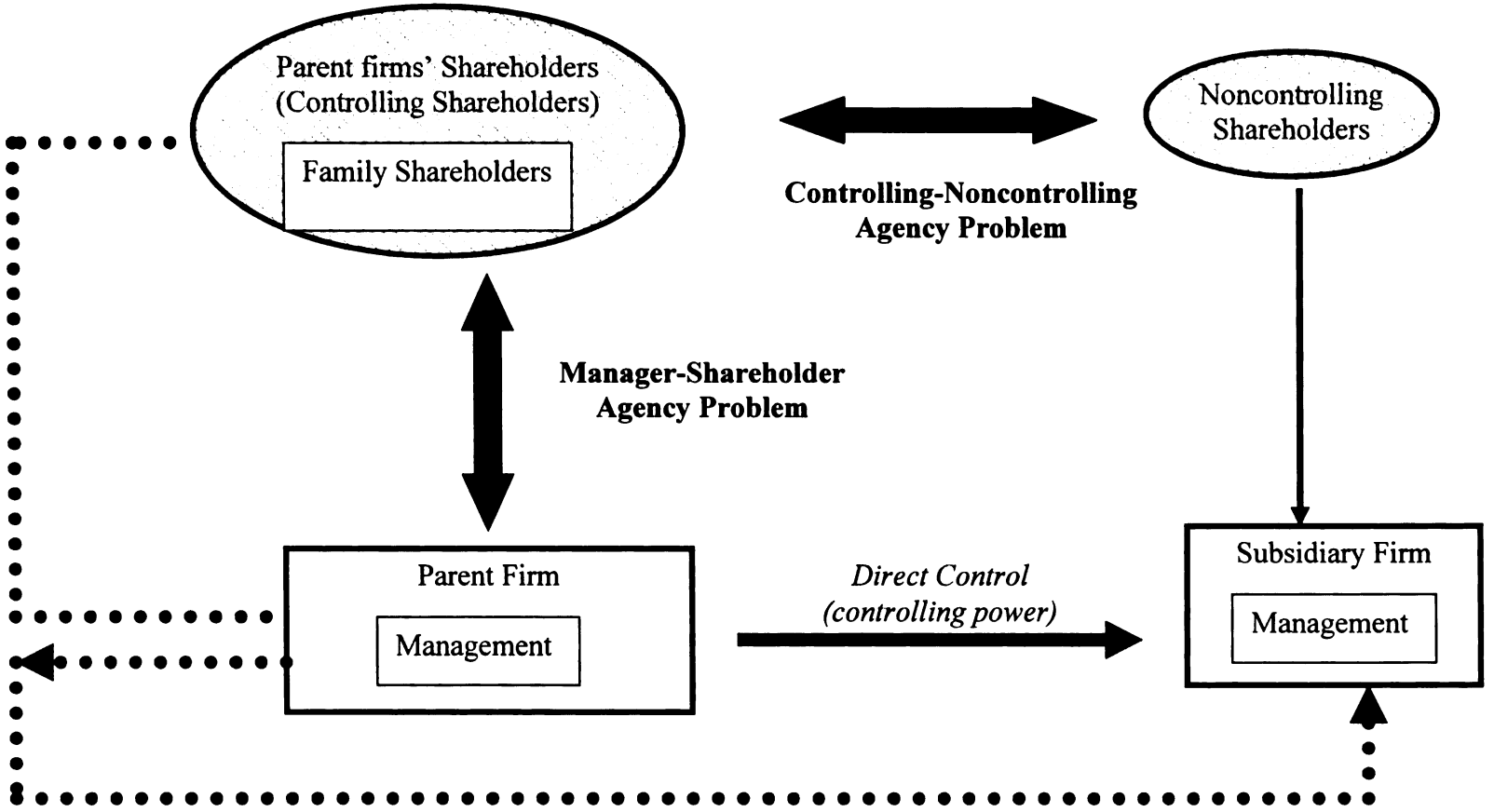

Table 1 Summary Statistics

Panel A (classification decision sample): Descriptive statistics of 128 S&P 500 firms in fiscal year 2004 across classification choice for noncontrolling interests (N=128 firms)

	LIABILITY=1 (N=31)		*LIABILITY*=0 (N=97)		
Variables	Mean	Median	Mean	Median	Two-sided *p*-value for two-sample t-test (Wilcoxon rank sum test)
FAMILYFIRM	0.161	0	0.361	0	**0.037 (0.037)**
NONCONTROLLING	5.421	4.866	4.999	4.532	**0.037** (0.163)
INV_GROWTH	0.358	0.310	0.416	0.393	**0.095** (0.170)
CONSTRAIN	0.032	0	0.237	0	0.173 (0.173)
Assets, millions	62,803	15,090	36,648	11,581	**0.013 (0.012)**
VOLATILITY	0.045	0.001	0.066	0.002	0.337 (0.837)

Panel B (credit rating sample): Descriptive statistics of 106 S&P 500 firms in fiscal year 2004 across classification choice for noncontrolling interests (N=106 firms)

	LIABILITY=1 (N=26)		*LIABILITY*=0 (N=80)		
Variables	Mean	Median	Mean	Median	Two-sided p-value for two-sample t-test (Wilcoxon rank sum test)
RATING_Ashbaugh (Ashbaugh et al. 2006)	4.125	4.000	3.913	4.000	0.177 **(0.035)**
RATING_Klock (Klock et al. 2005)	14.375	14.000	13.711	14.000	0.149 (0.415)

Table 1

Variable definitions:

LIABILITY= one if firm *i* disclosed noncontrolling interests in the liability section and zero if in the mezzanine section,
FAMILYFIRM= one if firm *i* is a founding family firm as identified by *Business Week*, and zero otherwise,
NONCONTROLLING= natural logarithm of the ratio of total assets to noncontrolling interests for firm *i*,
CONSTRAIN= one if firm *i* had negative average free cash flows calculated over the preceding five years, and zero other otherwise,[36]
INV_GROWTH= ratio of book value to market value of common equity for firm *i*,
SIZE= natural logarithm of the beginning-of-year total assets, for firm *i*,
VOLATILITY= firm *i*'s 2-digit SIC decile rank of the standard deviation of noncontrolling interests scaled by the standard deviation of total liabilities in the preceding five years.
RATING_Ashbaugh = long-term issuer credit rating assigned by Standard & Poor's six months after the fiscal year end (Compustat #SPDRC). SPDRC is converted to *RATING* based on the conversion schedule of Ashbaugh et al. (2006).
RATING_Klock = long-term issuer credit rating assigned by Standard & Poor's six months after the fiscal year end (Compustat #SPDRC). SPDRC is converted to RATING based on the conversion schedule of Klock et al. (2005).

[36] Following Standard and Poor's Corporate Ratings Criteria (2002 S&P Corporate Ratings Criteria), free cash flows are defined as cash flows from operating activities (Compustat #308) minus capital expenditures (Compustat #128).

Table 2 Correlation Matrix

Panel A (Classification decision sample): Correlation matrix of the dependent and independent variables (N=128 firms) [a]

	LIABILITY	*FAMILYFIRM*	*NONCONTROLLING*	*CONSTRAIN*	*INV_GROWTH*	*SIZE*	*VOLATILITY*
LIABILITY	1.000	**-0.184**	**0.093**	-0.159	-0.069	**0.166**	0.037
		(0.037)	**(0.076)**	(0.174)	(0.190)	**0.001**	(0.679)
FAMILYFIRM	**-0.184**	1.000	0.094	-0.044	**-0.168**	**-0.149**	-0.072
	(0.037)		(0.290)	(0.354)	**(0.058)**	**(0.094)**	(0.417)
NONCONTROLLING	**0.095**	0.080	1.000	0.108	**0.217**	-0.092	**-0.375**
	(0.068)	(0.368)		(0.224)	**(0.014)**	(0.299)	**(<0.001)**
CONSTRAIN	-0.159	-0.044	0.110	1.000	**0.364**	0.090	-0.053
	(0.174)	(0.354)	(0.217)		**(<0.001)**	(0.313)	(0.556)
INV_GROWTH	-0.072	**-0.184**	**0.170**	**0.290**	1.000	**0.323**	-0.029
	(0.168)	**(0.038)**	**(0.055)**	**(<0.001)**		**(<0.001)**	(0.746)
SIZE	**0.155**	-0.121	-0.125	0.135	**0.275**	1.000	-0.015
	(0.003)	(0.172)	(0.161)	(0.129)	**(0.002)**		(0.868)
VOLATILITY	0.036	-0.071	**-0.392**	-0.053	-0.013	0.022	1.000
	(0.689)	(0.427)	**(<0.001)**	(0.550)	(0.884)	(0.804)	

Table 2 (cont'd)

Panel B (Credit rating sample): Correlation matrix of the dependent and independent variables (N=106 firms) [a]

	RAING_Ashbaugh	*LIABILITY*	*FAMILYFIRM*	*NONCONTROLLING*	*CONSTRAIN*
RAING_Ashbaugh	1.000	**0.117**	-0.110	-0.141	**-0.377**
		(0.074)	(0.260)	(0.149)	**(<0.001)**
LIABILITY	**0.101**	1.000	**-0.222**	0.048	**-0.169**
	(0.104)		**(0.022)**	(0.625)	**(0.084)**
FAMILYFIRM	-0.105	**-0.222**	1.000	0.088	-0.023
	(0.286)	**(0.022)**		(0.370)	(0.815)
NONCONTROLLING	-0.132	0.066	0.084	1.000	0.122
	(0.176)	(0.502)	(0.390)		(0.212)
CONSTRAIN	**-0.355**	**-0.169**	-0.023	0.122	1.000
	(<0.001)	**(0.084)**	(0.815)	(0.214)	
INV_GROWTH	**-0.374**	-0.136	**-0.199**	**0.266**	**0.355**
	(<0.001)	(0.164)	**(0.041)**	**(0.006)**	**(<0.001)**
SIZE	**0.160**	0.037	-0.125	-0.145	0.156
	(0.100)	(0.705)	(0.202)	(0.137)	(0.110)
VOLATILITY	-0.028	0.017	-0.048	**-0.359**	-0.076
	(0.779)	(0.866)	(0.627)	**(<0.001)**	(0.438)
LEV	**-0.352**	**-0.161**	0.005	0.116	**0.309**
	(<0.001)	**(0.100)**	(0.959)	(0.235)	**(<0.001)**
CAP_INTEN	-0.019	**-0.265**	0.073	-0.046	**0.205**
	(0.847)	**(0.006)**	(0.458)	(0.638)	**(0.035)**
INT_COV	**0.606**	0.111	0.053	-0.151	**-0.419**
	(<0.001)	(0.257)	(0.588)	(0.123)	**(<0.001)**
ROA	**0.566**	0.080	-0.005	**-0.220**	**-0.291**
	(<0.001)	(0.418)	(0.959)	**(0.024)**	**(0.003)**

Table 2 (cont'd)

	INV_GROWTH	*SIZE*	*VOLATILITY*	*LEV*	*CAP_INTEN*	*INT_COV*	*ROA*
RAING_Ashbaugh	**-0.358**	**0.225**	-0.056	**-0.337**	-0.049	**0.452**	**0.438**
	(<0.001)	**(0.020)**	(0.566)	**(<0.001)**	(0.617)	**(<0.001)**	**(<0.001)**
LIABILITY	**-0.160**	0.052	0.022	-0.155	**-0.285**	0.095	0.140
	(0.101)	(0.594)	(0.820)	(0.112)	**(0.003)**	(0.335)	(0.153)
FAMILYFIRM	**-0.175**	-0.135	-0.050	-0.033	0.053	0.018	-0.098
	(0.073)	(0.167)	(0.609)	(0.737)	(0.592)	(0.851)	(0.317)
NONCONTROLLING	**0.294**	-0.120	**-0.340**	0.150	-0.046	-0.116	**-0.318**
	(0.002)	(0.220)	**(<0.001)**	(0.124)	(0.640)	(0.236)	**(<0.001)**
CONSTRAIN	**0.423**	0.133	-0.072	**0.316**	**0.213**	**-0.230**	**-0.239**
	(<0.001)	(0.173)	(0.463)	**(<0.001)**	**(0.029)**	**(0.018)**	**(0.014)**
INV_GROWTH	1.000	**0.211**	-0.069	0.096	0.028	**-0.293**	**-0.368**
		(0.030)	(0.485)	(0.328)	(0.775)	**(0.002)**	**(<0.001)**
SIZE	**0.158**	1.000	-0.091	**0.171**	-0.033	**-0.212**	-0.153
	(0.105)		(0.355)	**(0.079)**	(0.738)	**(0.030)**	(0.117)
VOLATILITY	-0.071	-0.044	1.000	-0.106	**0.179**	0.061	0.048
	(0.468)	(0.651)		(0.280)	**(0.066)**	(0.536)	(0.628)
LEV	0.030	0.086	-0.058	1.000	0.137	**-0.509**	**-0.204**
	(0.763)	(0.382)	(0.552)		(0.160)	**(<0.001)**	**(0.036)**
CAP_INTEN	0.007	0.034	**0.187**	**0.196**	1.000	-0.018	0.089
	(0.947)	(0.729)	**(0.055)**	**(0.045)**		(0.856)	(0.362)
INT_COV	**-0.358**	**-0.256**	0.045	**-0.713**	-0.046	1.000	**0.477**
	(<0.001)	**(0.008)**	(0.647)	**(<0.001)**	(0.637)		**(<0.001)**
ROA	**-0.459**	**-0.261**	0.042	**-0.353**	0.061	**0.779**	1.000
	(<0.001)	**(0.007)**	(0.668)	**(<0.001)**	(0.532)	**(<0.001)**	

Table 2 (cont'd)

[a] The upper right reports Pearson product-moment correlations and the lower left Spearman rank-order correlation coefficients with two-sided p-values are in parentheses. Correlation is bolded if significant at the 0.10 level (two-tailed). Size is the natural logarithm of beginning-of-the-year total assets.

Variable definitions:
LEV = ratio of total debt (Compustat #9 + Compustat #34) to total assets (Compustat #6).
CAP_INTEN = Net property, plant and equipment (Compustat #8) scaled by total assets (Compustat #6).
INT_COV = Operating income before depreciation (Compustat #13) divided by interest expense (Compustat #15).
ROA = Income before extraordinary items (Compustat #18) divided by total assets (Compustat #6).
All other variables are defined in Table 1.

Table 3
Regression results for Eq. (1): Analysis of the determinants of the decision to disclose noncontrolling interests in liability sections (N=128 firms)

Variables[a]	Predicted Sign	Estimation Method							
		Probit			Logit			OLS	
		Coefficient	Marginal Impact[b]	*p*-value[c]	Coefficient	Marginal Impact[b]	*p*-value[c]	Coefficient	*p*-value[c]
FAMILYFIRM	-	**-0.699**	**-0.179**	**0.030**	**-1.208**	**-0.193**	**0.041**	**-0.178**	**0.020**
NONCONTROLLING	+	**0.175**	**0.113**	**0.046**	**0.378**	**0.115**	**0.048**	**0.047**	**0.049**
INV_GROWTH	-	**-1.336**	**-0.109**	**0.071**	**-2.278**	**-0.103**	**0.103**	**-0.354**	**0.054**
CONSTRAIN	+	-0.693	-0.157	0.250	-1.378	-0.220	0.292	-0.141	0.177
SIZE	+	**0.192**	**0.071**	**0.063**	**0.322**	**0.066**	**0.068**	**0.057**	**0.072**
VOLATILITY	-	0.042	0.054	0.393	0.084	0.059	0.324	-0.012	0.395
Pseudo R^2		0.1232			0.1269				
R^2								0.1256	

[a] All variables are defined in TABLE 1.

[b] The marginal effect of continuous variables (dummy variables) is measured as the change in the probability of adopting liability classification for a change in the independent variable from the 25th percentile to the 75th percentile of the variable (from zero to one) in the sample, holding all other independent variables at their mean values.

[c] Two-sided *p*-values are calculated based on standard errors adjusted for heteroskedasticity (White 1980).

Table 4

Regression results for Eq. (2): Instrumental variable estimation of credit market effect of disclosing noncontrolling interests as liability (N=106 firms)

Variables [a]	Predicted Sign	Estimation Method					
		Ordered Probit [b]		Ordered Logit [c]		2SLS [d]	
		Coefficient	*p*-value[e]	Coefficient	*p*-value[e]	Coefficient	*p*-value [e]
LIABILITY	+	**3.813**	**0.001**	**6.511**	**0.001**	**1.229**	**0.035**
FAMILYFIRM	+	0.474	0.139	0.811	0.172	0.225	0.315
LEV	-	-1.162	0.286	-2.330	0.301	-1.109	0.238
SIZE	+	**0.356**	**0.002**	**0.625**	**0.005**	**0.232**	**0.011**
CAP_INTEN	+	0.112	0.838	0.063	0.954	0.804	0.155
INT_COV	+	**0.024**	**0.012**	**0.038**	**0.045**	**0.016**	**0.007**
ROA	+	**7.294**	**0.030**	**13.673**	**0.034**	**4.561**	**0.034**
Pseudo R^2		0.2289		0.2250			
R^2						0.1735	

[a] All variables are defined in Table 1 and Table 2.

[b] Fitted values from probit estimation of Eq. (1) is used as an instrument for *LIABILITY* in the ordered probit estimation of Eq. (2).

[c] Fitted values from logit estimation of Eq. (1) is used as an instrument for *LIABILITY* in the ordered logit estimation of Eq. (2).

[d] 2SLS is run by assuming Eq. (1) and (2) are both linear.

e Two-sided p-values are calculated based on bootstrap standard errors using 1000 replications and are adjusted for heteroskedasticity (White 1980).

Table 5

Regression results for Eq. (2): Instrumental variable estimation of credit market effect of disclosing noncontrolling interests as liability (N=106 firms)

Variables [a]	Predicted Sign	Estimation Method					
		Ordered Probit [b]		Ordered Logit [c]		2SLS [d]	
		Coefficient	*p*-value[e]	Coefficient	*p*-value[e]	Coefficient	*p*-value [e]
LIABILITY	+	**3.813**	**0.001**	**6.511**	**0.001**	**1.229**	**0.035**
FAMILYFIRM	+	0.474	0.139	0.811	0.172	0.225	0.315
LEV	-	-1.162	0.286	-2.330	0.301	-1.109	0.238
SIZE	+	**0.356**	**0.002**	**0.625**	**0.005**	**0.232**	**0.011**
CAP_INTEN	+	0.112	0.838	0.063	0.954	0.804	0.155
INT_COV	+	**0.024**	**0.012**	**0.038**	**0.045**	**0.016**	**0.007**
ROA	+	**7.294**	**0.030**	**13.673**	**0.034**	**4.561**	**0.034**
Pseudo R^2		0.2289		0.2250			
R^2						0.1735	

[a] All variables are defined in Table 1 and Table 2.

[b] Fitted values from probit estimation of Eq. (1) is used as an instrument for *LIABILITY* in the ordered probit estimation of Eq. (2).

[c] Fitted values from logit estimation of Eq. (1) is used as an instrument for *LIABILITY* in the ordered logit estimation of Eq. (2).

[d] 2SLS is run by assuming Eq. (1) and (2) are both linear.

e Two-sided p-values are calculated based on bootstrap standard errors using 1000 replications and are adjusted for heteroskedasticity (White 1980).

APPENDICES

Appendix A: Background

Pre-FAS 160 GAAP

FAS 160 requires that noncontrolling interests in subsidiaries be presented in the consolidated balance sheet within the equity section, but separate from the parent shareholders' equity. As stated in FAS 160, the objective is to "improve the comparability by eliminating that diversity" of noncontrolling interests classification in the practice.

Prior to FAS 160, there is little official guidance on how to classify noncontrolling interests: "ARB No. 51, Consolidated Financial Statements, and FASB Statement No. 94... are the prevailing authoritative GAAP rules on accounting and reporting standards for consolidated financial statements." (FASB, 1991, par. 14). However, neither pronouncement offers a definition of noncontrolling interests nor prescribes how to classify noncontrolling interest in financial statements. In addition to those accounting guidelines, the SEC and FASB have promulgated standards (i.e., ASR 268 and FAS 150) that shed some light on the disclosure of mandatorily redeemable noncontrolling interests.

In the pre-FAS150 period, noncontrolling interests that are subject to mandatory redemption or whose redemption is outside the control of the issuer were required to be disclosed outside of permanent equity. In the post-FAS150 period, noncontrolling interests that "embody an unconditional obligation requiring the issuer's redemption by transfer of assets at a specified or determinable date (or dates) or upon an event that is certain to occur" are required to be disclosed in the liability section (FAS 150). However,

noncontrolling interests that are outside the purview of FAS150 could be classified in the liability, mezzanine or equity section.

Debate on the balance sheet classification of noncontrolling interests

The FASB received forty-nine comment letters in response to the 2005 ED. The majority of respondents favored the parent company approach to financial reporting over the economic unit approach, and therefore, did not support the classification of noncontrolling interests as equity. Specifically, they argued that since noncontrolling interests do not have an ownership interest in the equity of the parent company, they should not be classified as equity in the consolidated balance sheet. They also argued that classifying noncontrolling interests in the consolidated equity section would affect the calculation of financial and performance ratios, which could confuse users.

In contrast, the few respondents who agreed with the equity-classification of noncontrolling interests (i.e., academics, accounting societies, certain preparers, and one accounting firm) supported the economic unit concept as more appropriate than the parent company concept. They pointed out that there is no support in the conceptual framework for classifying noncontrolling interests as liabilities or mezzanine items and that the holders of noncontrolling interests are owners of a residual interest in a component of the consolidated entity.

Theories underlying classification of noncontrolling interests

The lack of agreement on a theory of consolidation and a clear definition of liabilities and owners' equity has led to variations in the reporting of noncontrolling interests. The debate as to whether the appropriate basis of accounting should rely upon

the economic entity concept or the parent company concept has been flourishing for a long time.[37, 38]

At one end of the spectrum, the economic entity theory views the subsidiary as part of the consolidated firm, and given that the investors representing the noncontrolling interests are equity holders of the subsidiary, they are also deemed equity holders of the consolidated firm (Paton 1922; Moonitz 1942 and 1960; Sapienza 1960; Hendriksen 1970). At the other end, the parent company theory evolved from the representative viewpoint proposed by Husband (1938 and 1954), who argues that for the consolidated entity, corporate entrepreneurs rather than the holders of noncontrolling interests are the parent company's equity claimants (Kohler 1938; AACS 1955). Hence, a noncontrolling interest is an outside interest and should not be reported as an element of stockholders' equity. Proponents have used this theory to argue that noncontrolling interest is a liability, or should be presented in its own special category separate from the parent's equity.

Standard setters' views on the adoption of the economic entity concept versus the parent company concept have been mixed. ARB 43 (1953) provides support for the economic entity theory. Chapter 7 of ARB 43 states that "the income of the corporat[ion]

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[37] The earliest reference is a presentation made by William M. Lybrand at the annual meeting of the American Association of Public Accountants in October 1908 which was published in two parts in the Journal of Accountancy in November 1908 and December 1908. Lybrand depicts "common Stock of Subsidiary Companies Not Owned by the Holding Corp." under a general heading of "Liabilities," following "Common Stock of the Holding Corp." [November 1908, p. 40]. In part II, Lybrand states that "under capital stocks will be included the stock issues of the holding company and separately stated, such part of the stocks of the subsidiary companies as are not owned by the holding company" [December 1908, p. 120].

[38] Differences of opinion were evident from the start. Newlowe (1948) examined 150 journal articles and books from 1908 through 1945. Four authors preferred that noncontrolling interest be placed among liabilities, and 28 preferred to classify noncontrolling interest as an element of stockholders' equity. The other 34 sources cited did not address the nature of noncontrolling interests.

is determined as that of a separate entity without regard to the equity of the respective shareholders in such income." (Section B, par. 6). However, ARB 51 states that "...the purpose of consolidated statements is to present, primarily for the benefit of the shareholders and creditors of the parent company, the results of operations and the financial position of a parent company and its subsidiaries essentially as if the group were a single company with one or more branches or divisions." Even though ARB51 does not discuss where to place noncontrolling interests on the balance sheet, the above statement provides support for the parent company theory of equity. While the FASB's stated preference in the FAS 160 for classification under the equity section reflects its leaning toward the economic entity theory, it also proposes that EPS calculations be based on parent firm information, consistent with the parent company theory. Furthermore, the FASB's Statement of Financial Accounting Concepts No. 6 does not give clear guidance on the nature of noncontrolling interests. In sum, there is no clear theoretical consensus that has emerged on the balance sheet classification of noncontrolling interests.

Appendix B: Credit ratings' numerical conversions

S&P Letter Rating	Compustat Quarter Data SPDRC	Conversion Number (Ashbaugh et al. 2006)	Conversion Number (Klock et al. 2005)
AAA	2	7	22
AA+	4	6	21
AA	5	6	20
AA-	6	6	19
A+	7	5	18
A	8	5	17
A-	9	5	16
BBB+	10	4	15
BBB	11	4	14
BBB-	12	4	13
BB+	13	3	12
BB	14	3	11
BB-	15	3	10
B+	16	2	9
B	17	2	8
B-	18	2	7
CCC+	19	1	6
CCC	20	1	5
CCC-	21	1	4
CC	23	1	3
C	24	1	2
D	27	1	1

Appendix C: Sensitivity analysis

Table C. 1
Descriptive statistics of S&P 500 firms in fiscal year 2004 across classification choice for noncontrolling interests

	With noncontrolling interests		Without noncontrolling interests		
Variables[a]	Mean	Median	Mean	Median	Two-sided p-value for two-sample t-test (Wilcoxon rank sum test)
FAMILYFIRM	0.293 (N=164)	0	0.327 (N=336)	0	0.434 (0.434)
INV_GROWTH	0.406 (N=163)	0.384	0.382 (N=333)	0.342	0.229 (0.293)
CONSTRAIN	0.146 (N=151)	0	0.126 (N=294)	0	0.559 (0.559)
SIZE	9.594 (N=164)	9.450	9.392 (N=335)	9.034	0.122 (0.325)
ROA	0.052 (N=164)	0.053	0.062 (N=336)	0.046	0.196 (0.193)

[a] All variables are defined in Table 1.

Table C. 2

Rank regression results for Eq. (1): Analysis of the determinants of the decision to disclose noncontrolling interests in liability sections (N=128 firms)

Variables[a]	Predicted Sign	Estimation Method					
		Probit		Logit		OLS	
		Coefficient	p-value[b]	Coefficient	p-value[b]	Coefficient	p-value[b]
FAMILYFIRM	-	**-0.652**	**0.048**	**-1.120**	**0.067**	**-0.184**	**0.034**
NONCONTROLLING	+	**0.097**	**0.085**	**0.167**	**0.082**	**0.027**	**0.098**
INV_GROWTH	-	-0.094	0.128	-0.155	0.153	-0.027	0.134
CONSTRAIN	+	**-0.942**	**0.080**	-1.712	0.130	**-0.201**	**0.020**
SIZE	+	0.151	0.340	0.241	0.397	0.035	0.324
VOLATILITY	-	0.046	0.349	0.084	0.314	0.015	0.345
Pseudo R^2		**0.0926**		**0.0918**			
R^2						**0.0909**	

[a] All variables are defined in TABLE 1.

[b] Two-sided p-values are calculated based on standard errors adjusted for heteroskedasticity (White 1980).

Table C. 3

Regression results for Eq. (1): Analysis of the determinants of the decision to disclose noncontrolling interests in liability sections controlling for auditor effect (N=97 firms)

Variables[a]	Predicted Sign	Estimation Method					
		Probit		Logit		OLS	
		Coefficient	p-value[c]	Coefficient	p-value[c]	Coefficient	p-value[c]
FAMILYFIRM	-	**-0.588**	**0.104**	**-1.013**	**0.103**	**-0.159**	**0.099**
NONCONTROLLING	+	**0.914**	**0.053**	**1.504**	**0.062**	**0.264**	**0.046**
INV_GROWTH	-	**0.971**	**0.019**	**-1.737**	**0.045**	**0.259**	**0.010**
CONSTRAIN	+	-0.189	0.661	-0.251	0.758	-0.041	0.711
SIZE	+	**0.185**	**0.089**	**0.324**	**0.086**	**0.057**	**0.075**
VOLATILITY	-	0.053	0.404	0.086	0.432	0.014	0.458
Pseudo R^2		0.1243		0.1253			
R^2						0.1297	

[a] **Variable Definitions:**

NONCONTROLLING = natural logarithm of the average ratio of total assets to noncontrolling interests calculated over the preceding five years for firm i,

INV_GROWTH= one if firm *i*'s ratio of book value to market value of common equity calculated over the preceding five years is lower than industry mean, and zero other otherwise.

CONSTRAIN = one if firm *i*'s average free cash flows calculated over the preceding five years is lower than industry mean, and zero other otherwise

All other variables are defined in Table 1.

[b] Two-sided p-values are calculated based on standard errors adjusted for heteroskedasticity (White 1980).

Table C. 4

Regression results for Eq. (2) (using *RATING_Klock* as dependent variable): Instrumental variable estimation of credit market effect of disclosing noncontrolling interests as liability

(N=106 firms)

Variables [a]	Predicted Sign	Estimation Method					
		Ordered Probit [b]		Ordered Logit [c]		2SLS [d]	
		Coefficient	p-value [e]	Coefficient	p-value [e]	Coefficient	p-value [e]
LIABILITY	+	**3.460**	**<0.001**	**5.940**	**0.001**	**3.869**	**0.079**
FAMILYFIRM	+	**0.533**	**0.054**	**0.898**	**0.074**	0.665	0.291
LEV	-	-1.438	0.153	-2.913	0.160	-3.405	0.238
SIZE	+	**0.413**	**<0.001**	**0.724**	**<0.001**	**0.797**	**0.002**
CAP_INTEN	+	0.319	0.534	0.485	0.635	1.723	0.331
INT_COV	+	**0.019**	**0.045**	**0.029**	**0.084**	**0.040**	**0.021**
ROA	+	**8.300**	**0.010**	**14.711**	**0.018**	**15.579**	**0.021**
Pseudo R^2		0.1501		0.1454			
R^2						0.1539	

[a] All variables are defined in Table 1 and Table 2.

[b] Fitted values from probit estimation of Eq. (1) is used as an instrument for *LIABILITY* in the ordered probit estimation of Eq. (2).

[c] Fitted values from logit estimation of Eq. (1) is used as an instrument for *LIABILITY* in the ordered logit estimation of Eq. (2).

[d] 2SLS is run by assuming Eq. (1) and (2) are both linear.

[e] Two-sided p-values are calculated based on bootstrap standard errors using 1000 replications and are adjusted for heteroskedasticity (White 1980).

Table C. 5

Regression results for Eq. (2) without control: Instrumental variable estimation of credit market effect of disclosing noncontrolling interests as liability

(N=106 firms)

Variables [a]	Predicted Sign	Estimation Method					
		Ordered Probit [b]		Ordered Logit [c]		2SLS [d]	
		Coefficient	p-value [e]	Coefficient	p-value [e]	Coefficient	p-value [e]
		(*RATING_Ashbaugh* as dependent variable)					
LIABILITY	+	**3.419**	**<0.001**	**5.820**	**<0.001**	**2.724**	**0.004**
Pseudo R^2		0.0733		0.0676			
R^2						0.0534	
		(*RATING_Klock* as dependent variable)					
LIABILITY	+	**3.029**	**<0.001**	**4.926**	**<0.001**	**7.077**	**0.006**
Pseudo R^2		0.0380		0.0332		0.0120	
R^2							

[a] The variable is defined in Table 1.

[b] Fitted values from probit estimation of Eq. (1) is used as an instrument for *LIABILITY* in the ordered probit estimation of Eq. (2).

[c] Fitted values from logit estimation of Eq. (1) is used as an instrument for *LIABILITY* in the ordered logit estimation of Eq. (2).

[d] 2SLS is run by assuming Eq. (1) and (2) are both linear.

[e] Two-sided p-values are calculated based on bootstrap standard errors using 1000 replications and are adjusted for heteroskedasticity (White 1980).

Appendix D: Balance-sheet classification examples

Example of disclosing noncontrolling interests in the liability section

United Technologies Corp Consolidated Balance Sheet

		2004
Assets		
Cash and cash equivalents	$	2,265
Accounts receivable (net of allowance for doubtful accounts of $368 and $421)		6,315
Inventories and contracts in progress		5,006
Future income tax benefits		1,441
Other current assets		495
Total Current Assets		15,522
Customer financing assets		1,090
Future income tax benefits		1,124
Fixed assets		5,231
Goodwill		10,111
Intangible assets		2,016
Other assets		4,941
Total Assets	$	40,035
Liabilities and Shareowners Equity		
Short-term borrowings	$	1,320
Accounts payable		3,490
Accrued liabilities		8,097
Long-term debt currently due		40
Total Current Liabilities		12,947
Long-term debt		4,231
Future pension and postretirement benefit obligations		4,595

Example of disclosing noncontrolling interests in the liability section (cont'd)

Other long-term liabilities		3,344
Commitments and contingent liabilities (Notes 4 and 15)		
Minority interests in subsidiary companies		910
Total Liabilities		26,027
Shareowners Equity:		
Capital Stock:		
Preferred Stock, $1 par value; Authorized-250,000 shares; None issued or outstanding		
Common Stock, $1 par value; Authorized- 2,000,000 shares; Issued 664,420 and 656,911 shares		7,159
Treasury Stock 153,322 and 142,849 common shares at cost		(6,312)
Retained earnings		14,569
Unearned ESOP shares		(256)
Accumulated other non-shareowners changes in equity:		
Foreign currency translation		210
Minimum pension liability		(1,549)
Other		187
Total Accumulated Other Non-Shareowners Changes in Equity		(1,152)
Total Shareowners Equity		14,008
Total Liabilities and Shareowners Equity	$	40,035

Example of disclosing noncontrolling interests in the mezzanine section

Borders Group, Inc. Consolidated Balance Sheet

		2004
Assets		
Current assets:		
Cash and cash equivalents	$	244.80
Investments		95.40
Merchandise inventories		1,306.90
Accounts receivable and other current assets		118.30
Total current assets		1,765.40
Property and equipment, net		635.60
Other assets		84.80
Deferred income taxes		14.40
Goodwill		128.60
Total assets	$	2,628.80
Liabilities, Minority Interest and Stockholders' Equity		
Current liabilities:		
Short-term borrowings and current portion of long-term debt	$	141.20
Trade accounts payable		615.10
Accrued payroll and other liabilities		306.40
Taxes, including income taxes		118.30
Deferred income taxes		15.00
Total current liabilities		1,196.00
Long-term debt		55.80
Other long-term liabilities		286.70
Commitments and contingencies (Note 12)		
Total liabilities		1,538.50

Example of disclosing noncontrolling interests in the mezzanine section (cont'd)

Minority interest		1.40
Total liabilities and minority interest		1,539.90
Stockholders equity:		
Common stock, 200,000,000 shares authorized; 73,875,627 and 78,273,341 shares issued and outstanding at		
at January 23, 2005 and January 25, 2004, respectively		525.10
Deferred compensation		(0.50)
Accumulated other comprehensive income		25.30
Retained earnings		539.00
Total stockholders equity		1,088.90
Total liabilities, minority interest and stockholders' equity	$	2,628.80

Example of disclosing noncontrolling interests in the equity section (from Appendix A of FAS 160)

ABC Co.
Consolidated Statement of Financial Position
As of December 31

		20X3	20X2
		$	$
Assets		570,000	475,000
	Cash	125,000	110,000
	Accounts receivable	125,000	120,000
	Available-for-sale securities	220,000	235,000
	Plant and equipment	$ 1,040,000	$ 940,000
	Total assets		
Liabilities:			
		$	$
	Total Liabilities	555,000	459,000
Equity:			
	ABC Co. shareholders' equity:		
	Common stock, $1 par	200,000	200,000
	Paid-in capital	42,000	50,000
	Retained earnings	194,500	167,000
	Accumulated other comprehensive income	22,500	16,000
	Total ABC Co. shareholders' equity	459,000	433,000
	Noncontrolling interests	26,000	48,000
	Total equity	485,000	481,000
	Total Liabilities and equity	$ 1,040,000	$ 940,000

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