Anticipatory and Implementation Effects of FIN 46

On the Behavior of Different Market Participants

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Abstract

We examine whether FASB-mandated modifications of the consolidation rules (FIN 46 and FIN 46R) resulted in perceptible changes in market participants' decisions as manifested in a variety of financial indicia. We find that financial analysts' idiosyncratic precision of information decreased and equity market participants acted as if they perceived higher risk as evidenced by reduced earnings response coefficients for these firms after 2001. On the other hand, we find that information users that likely had access to information regarding the off-balance-sheet debt structures prior to 2001 did not exhibit a similar increase in risk assessment. Specifically, we find that banks did not increase the loan spreads for FIN 46 firms and credit rating agencies did not lower the ratings of these firms more than those of other firms. This finding is consistent with our conjecture that these entities were aware of the true risk levels of FIN 46 firms even under the prior limited disclosure regime. Overall, we conclude that the perceived risk of firms that have previously structured a part of their operations in separate entities increased significantly with the expected promulgation of accounting guidance requiring them to bring in the previously off-balance-sheet assets, liabilities and results of operations into their financial statements. We interpret these results as evidence that these firms previously were assessed as having lower risk relative to their peers within the equity market. We conclude that the anticipation of FIN 46 was instrumental in changing the behavior of market participants who previously lacked access to information expected to be provided by the implementation of FIN 46, namely equity investors and analysts.

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1 Introduction

In this paper, we examine the empirical question of whether equity market participants and other sophisticated financial information users are sensitive to the risk inherent in corporate consolidation choices. Specifically, we ask whether FASB-mandated modifications of the consolidation rules resulted in perceptible changes in market participants' decisions as manifested in a variety of financial indicia.

The high-profile corporate failures in the United States in 2001 and 2002 have led to the Sarbanes-Oxley Act of 2002 (SOX) and to various amendments to the stock exchanges' regulations. Perhaps one of the most publicized accounting problems that led to the downfall of Enron was its use of variable interest entities (VIEs), allowing it to leave significant amounts of debt off its balance sheet. In response to widespread concerns about this business practice, FASB has begun deliberations on this topic in early 2002. It issued FASB Interpretation No. 46 (FIN 46) *Consolidation of Variable Interest Entities* in January of 2003 and a Revised Interpretation (FIN 46R) in December of 2003.¹ The interpretation elaborates on and significantly expands the number of entities subject to consolidation under Accounting Research Bulletin (ARB) No. 51 *Consolidated Financial Statements* and aims to address the consolidation requirements for enterprises that are affiliated with VIEs. This interpretation covers the accounting treatment of any entity in which the firm has an interest by virtue of bearing a portion of potential risks and an entitlement to potential rewards. In other words, even in the absence of a voting interest, a firm's exposure to the assets' risks and rewards is seen as representing the best evidence of financial control. When an enterprise maintains a controlling position in a VIE, it is considered the primary beneficiary and must consolidate that VIE into its financial statements. The goal of this guidance is to improve comparability among enterprises by imposing more consistent consolidation practices and to allow for better assessment of the enterprise's risk. The adoption of FIN 46 and FIN 46R (henceforth referred to as FIN 46 unless noted otherwise) provides us with a controlled setting within which to observe instances when relevant assets and liabilities previously carried off-balance-sheet are mandated to be consolidated into the parent entity

What are the economic consequences of the purportedly improved transparency of financial statements as a result FIN 46? Under the new guidance the explicit and implicit risks of off-balance-sheet structures are revealed as the company acknowledges that the economic structure of the VIE is such as to warrant consolidation. Presumably, consolidation of VIEs that makes pre-FIN 46 hidden debt visible would enable users of the financial statements to more completely incorporate the hitherto-hidden risk

¹ Another name given to variable interest entities is special purpose entities (SPEs). The terms VIE and SPE have been used interchangeably in various accounting standards. Throughout the paper we use the term VIE in accordance with the main choice of wording in FIN 46. For simplicity, we shall call companies subject to FASB Interpretation 46 and 46 (Revised) rule changes as "FIN 46 firms" throughout the rest of this paper.

into their lending and investing decisions. Did the issuance of FIN 46 accomplish this objective? In this paper, we address this question by examining the anticipatory and the implementation impact of FIN 46 on a variety of metrics manifesting investment and lending decisions. In other words, we seek to assess the reaction of market participants to the revelation of such previously hidden and newly disclosed risk. The results of such an examination would not only reveal how changed rules of consolidation and related disclosures such as those of FIN 46 affect capital markets, but may also contribute to our understanding of how mandated accounting rule changes which lead to greater disclosure of risk would be assimilated by markets in general.

The FIN 46 rule change presents a rare opportunity to compare the risk perception of market participants for the firms that are likely to be affected by the rule changes. For example, if use of VIEs leaves significant amount of debt off the balance sheet and firm risks depend on the total amount of debt employed by the company, then it is plausible to expect measures of risk for these firms to be underestimated in the pre-FIN 46 world. Once the rule is in effect, firms with consolidated VIEs would reveal their true risk levels. The impact of change in risk measures of such companies is precisely what we document in this paper.

In conducting our examination, we formulate two sets of hypotheses. The first relates to users of financial statements that are not likely to possess non-publicly available information. This group comprises primarily equity investors including information intermediaries such as financial analysts. The second set includes lending banks and debt-rating agencies. The latter group is likely to have access to superior information as a result of their privileged access to company information and their right to demand such information as a condition for lending or rating. While we expect FIN 46 to impact the decisions of the first set of users, we predict little or no impact on decisions of lending banks and rating agencies by virtue of their pre-FIN 46 privileged access to information.

Investigating diverse reactions of different sets of market actors to an accounting standard change (such as FIN 46) and to subsequent changes in financial statements content is of interest and it contributes to our understanding of the role of accounting information in changing beliefs and decisions. Our study complements and extends the examination of FIN 46 effects on aggregate market metrics (Callahan et al, 2006) in that it informs about the workings of different segments of the market.² Documenting how

² Examples in recent literature that address accounting effects on different market publics include Ke, Petroni, and Yu, 2008 who assess the impact of Reg FD on the abnormal selling of stocks by transient institutional investors even though other studies examined the effect on the market as a whole; Hope and Thomas, 2008 who investigate the effect of SFAS 131 on the excessive growth of foreign operations of firms even though other studies examined the

accounting events differentially affect beliefs or decisions of various segments of the market conditional on different information sets they likely process is of interest to understanding the effect of existing information endowments on the assimilation of new accounting information.

We infer the first set of information users' perceptions of risk by observing two measures. Within the equity markets we examine: (1) the characteristics of analyst forecasts and (2) the earnings response coefficient, which, among other things, reflects the assessment of the risk that is manifest in financial statements measures. With respect to the second set of financial statement users, lending banks and rating agencies, we examine as a measure of perceived risk: (3) the spreads required by banks on private loans and (4) the ratings of securities by credit rating agencies. We examine two significant break points related to the disclosure of VIE information and the promulgation of the new guidance. First, we consider whether the perception of risk changed subsequent to 2001 to capture the effects of accounting scandals, the expectation of a change in accounting guidance, the increased press coverage and voluntary firm disclosures. Second, we examine whether the perception of risk changed after 2003 to capture the effects of the implementation of both FIN 46 and FIN 46R.

Overall, we conclude that equity market participants adjusted their beliefs about the riskiness of FIN 46 firms in expectation of the mandated disclosure and the consolidation of VIEs (but not upon the actual implementation of the new guidance). Specifically, we find that financial analysts experienced a reduction in the idiosyncratic precision of information relied upon, consistent with the argument that FIN 46 reduced analysts' incentives to gather private information. We also find that overall equity market participants acted as if they perceived higher business or informational risk as evidenced by reduced earnings response coefficients after 2001 for FIN 46 firms. On the other hand, we find that sophisticated information users that likely had access to information regarding the off-balance-sheet debt structures prior to publicly mandated disclosures do not exhibit a similar increase in risk assessment either in expectation or with the adoption of FIN 46. Specifically, we find that banks did not increase the loan spreads for FIN 46 firms at a greater rate than the spreads for other firms and credit rating agencies did not lower the ratings of these firms more than the ratings of other firms. This finding is consistent with our conjecture that these entities were aware of the true risk levels of FIN 46 firms even under the prior limited disclosure regime.

effect on the market as a whole; and Berger and Hann, 2003 who examine, among other things, the effect of SFAS 131 on analysts' forecast accuracy.

Overall, we conclude that the perceived risk of firms that have structured a part of their operations in separate entities increased significantly after they became likely to be required to bring in the previously off-balance-sheet assets, liabilities, and results of operations into their financial statements. We interpret these results as evidence that, to the extent these firms assumed responsibility for the liabilities of the separate entities, they have successfully withheld information from the market by hiding their debt previously and that relative to their peers were associated with lower risk within the equity market. We conclude that FIN 46 was instrumental in changing the behavior of market participants who lacked prior access to relevant information, namely equity investors and analysts.

The rest of this paper is organized as follows. The next section reviews the accounting guidance and the relevant literature as well as motivating our hypotheses. The third section describes our sample selection procedures and the sample. The fourth section presents and discusses our empirical results and the final section concludes.

2 Background and Hypothesis Development

2.1 Accounting Guidance

In December of 2003 the Financial Accounting Standards Board (FASB) issued the revised FASB Interpretation No. 46 *Consolidation of Variable Interest Entities*. FIN 46R replaces FIN 46 issued earlier that year and is an interpretation of ARB 51 *Consolidated Financial Statements*. It requires public companies to consolidate VIEs which do not effectively disperse risks among the parties involved. The goal of the standard is to improve comparability among enterprises by imposing more consistent consolidation practices and to allow for better assessment of the enterprise's risk by providing more complete information about the relevant resources, obligations, and opportunities.

To better understand the expected and actual impact of FIN 46 and FIN 46R we consider the prior accounting guidance, the motivation for the new standard and the transition process. ARB 51, issued in 1959, required the consolidation of the assets, liabilities and results of operations of subsidiaries in which a firm has a controlling financial interest, which has commonly been interpreted to mean a majority voting interest. The voting interest approach does not identify controlling relationships executed through other means or arrangements where voting equity investors do not bear the residual economic risks. Thus, while VIEs and similar mechanisms have become increasingly common throughout the last two decades of the twentieth century, the relevant accounting literature was incomplete and inconsistently applied. FASB has attempted to promulgate a stricter set of consolidation guidelines at various points in time in

the 1980s and 1990s but have repeatedly been thwarted by intense lobbying³. However, the collapse of Enron, due in large part to cavalier off-balance-sheet arrangements, has both strengthened FASB's resolve to rectify the inadequacies of the accounting guidance and made firms and accountants more receptive to these amendments.⁴

FASB has initiated discussions regarding identification and treatment of special-purpose entities as early as February of 2002⁵ with the initial draft of FIN 46 distributed for comments in July. FASB issued FIN 46, by placing the interpretation on its website, shortly after the January 15, 2003 Board meeting. The mandatory implementation of FIN 46 started immediately with respect to new VIEs and from July 15, 2003 with respect to existing VIEs. Throughout 2003 FASB "learned that certain provisions of [FIN 46] were not being interpreted as the Board intended"⁶ and issued a revised interpretation to address technical corrections and implementation issues in December of 2003.

FIN 46R (the final revised version of FIN 46 that is currently in effect) states that business entities (sponsors) must consolidate VIEs which by design have one or more of the following characteristics:

- 1) the VIE does not have sufficient equity investment at risk;
- 2) the equity investors lack essential characteristics of a controlling financial interest;
- 3) the equity investors have disproportionate voting and economic interests.

The first condition to avoid consolidation requires that the VIE be able to finance its activities without additional subordinated financial support from any parties. The quantitative benchmark for sufficiency is set to be at least 10% of the VIE's total assets, but supplementary qualitative analysis to determine sufficiency is encouraged.⁷ The second condition mandates that the holders of equity have the rights to make significant operating decisions, are obligated to absorb the losses of the VIE and have the right to receive the expected residual returns. The third condition states that if substantially all of the VIE's activities are conducted on behalf of equity investors whose voting rights are disproportionately small

³ See "Power Play: Deals That Took Enron Under Had Many Supporters - Big-Name Lobbying Stymied FASB Push to Disclose Off-Balance-Sheet Entities" in Wall Street Journal, 4/10/2002.

⁴ For example few firms argued, as Enron did in 1999, that investors would be more overwhelmed than enlightened by the resulting deluge of data (WSJ 4/10/2002).

⁵ FASB Action Alert No. 02-06, February 6, 2002.

⁶ Paragraph D2 of FIN 46R.

⁷ This is in contrast to the 3% sufficiency benchmark specified in EITF Issue No. 90-15, a threshold widely relied upon previously in the structuring of financial vehicles. The 10% vs. 3% is an element of FIN 46, which received attention in the press even before the first draft of the interpretation was distributed. See "Who else is hiding debt : Moving financial obligations into off-book vehicles is now a common ploy" in BusinessWeek, 1/28/2002.

(given their obligations to absorb expected loss and rights to receive expected residual returns) then consolidation is in order. Besides redefining the characteristics of a controlling financial interest, FIN 46R made several other notable amendments to FIN 46 including increased disclosure requirements.

Implementation aspects for FIN 46R remained similar to prior guidance. In the consolidation of newly created VIEs the entity must record the assets, liabilities and non-controlling interests at their fair values with a goodwill adjustment or an extraordinary loss recorded as necessary. In the consolidation of VIEs created before December 31, 2003 the assets, liabilities and non-controlling interests are to be recorded at carrying amounts with a cumulative effect of accounting change recorded. FIN 46R disclosures were mandated for fiscal periods ending after December 15, 2003 for entities that have interests in VIEs or potential VIEs and it became fully effective for all entities for periods ending after March 15, 2004.⁸ Certain disclosures are mandated even earlier for entities with a possibility of consolidation of VIEs.⁹ See Appendix A for subsequent accounting guidance issued to assist with the implementation of FIN 46R.

FASB has recently undertaken a project to amend and enhance certain guidance in FIN 46R. In September of 2008 it issued an exposure draft of amendments to FIN 46R. The three main areas of focus within the draft are: requirement for an ongoing assessment to determine VIEs; emphasis on qualitative analysis in determining a primary beneficiary; and enhanced disclosures regarding an entity's involvement with VIEs. Thus consolidation of off-balance-sheet entities is likely to remain a pertinent and significant issue in the near future.

2.2 Literature and Hypothesis Development

The literature discussing FIN 46 and FIN 46R has been largely limited to practitioner oriented implementation aids. See for example Ciesielski and Soroosh, 2004, Agosta, 2004 and Reinstein et al. 2005. Several papers present notable exceptions but are limited to specific types of assets or structures. Bens and Monahan, 2007 examine the investment decisions undertaken by US Banks which were sponsors of highly leveraged asset backed commercial papers (ABCP) in response to promulgation of FIN 46. They find interest in ABCPs waning with the introduction of the guidance and provide evidence that parent banks have proceeded to enter into costly restructuring arrangements to avoid FIN 46 required consolidation. These effects are limited to bank sponsors as non-banks are not subject to the same leverage constraints. Beatty, 2006, on the other hand, finds that financial institutions modify their economic behavior in response to accounting changes (those being a combined effect of SFAS 150 and

⁸ Small business issuers are allotted an extra year for application of FIN 46R, prior to which FIN 46 is to be applied.

⁹ These disclosures are mandated for financial statements issued after 12/15/2003.

FIN 46R) even when their regulatory capital ratios are not impacted. Beatty, 2006, is focused on issuance of Trust Preferred Stock and the results indicate that banks limit the use of these securities with the implementation of accounting guidance limiting their advantages for financial reporting, albeit not for regulatory capital purposes. Several papers discuss the impact of FIN 46 within the synthetic lease setting. Callahan and Spencer, 2006 examine the valuation and disclosure impact of FIN 46 on firms disclosing a synthetic lease with a VIE. They find that disclosed future minimum lease payments are significantly valued by the market both pre and post adoption of FIN 46, while recognized lease liabilities are valued with substantially more weight post FIN 46. On the other hand, they conclude that newly disclosed information, such as maximum risk disclosures does not add incremental value. Altamuro, 2006 finds that firms are less likely to engage in synthetic lease financing after the issuance of FIN 46, consistent with the conjecture that the primary benefit of such transactions is the off-balance sheet treatment, made exceedingly difficult subsequent to the passage of FIN 46. Lastly, Zechman, 2008 shows that consolidation of synthetic leases, vs. the decision to purchase the assets or to restructure the contract in order to retain off-balance sheet reporting, is more prevalent for firms with more informative prior disclosures. One study, Dickinson and Donohoe, 2008, examines the short-window market reaction to the regulatory actions resulting in the promulgation of FIN 46 and FIN 46R and concludes that the market overall exhibits a negative price reaction at the release of a first exposure draft proposing FIN 46.

Finally, in a contemporaneous paper, Callahan et al. 2007 find little evidence that FIN 46R resulted in increased costs of capital. Since the focus of Callahan et al. is on aggregate market proxies for costs of capital, our paper can be seen as complementary to theirs in that we examine in more detail the impact of FIN 46 on distinct and different groups of market participants. That is, even if it is found that the costs of capital did not change, FIN 46 may be found to have had different impacts on diverse groups of investors.

Several inferences may be drawn from the literature noted above. One, as indicated in the Zechman paper, the firms in our sample, i.e. firms consolidating VIEs and disclosing such consolidation, may have had relatively informative disclosures regarding these entities prior to FIN 46 promulgation. This would bias against us finding results that support the hypothesis that the perceived riskiness of these firms were impacted by FIN 46 disclosures; on the other hand, Zechman's paper implies that investors were able to anticipate which firms were likely to be impacted by the implementation of FIN 46, thus making possible the detection of the effects of such anticipation as manifested in metrics that reflect increases in business or informational risk. The second implication is that FIN 46 and FIN 46R may have impacted the actual financing decisions of the firm. This would indicate that the new guidance impacted not just the perceived riskiness of FIN 46 firms but their fundamental risk characteristics, making it

difficult to disentangle any potential changes in the latter from the observed changes in the former. As we do not limit our sample to select off-balance-sheet structures examined in prior literature, but rather examine all instances of consolidation disclosures, we believe that the perceived risk changes will be driving the results. Also, to the extent that firms decreased their use of VIEs in reaction to FIN 46 and FIN 46R, their actual risk, in fact, would have decreased, thus biasing against us finding our hypothesized increase in perceived risk. Furthermore, our examination of both banks and credit rating agencies, whose information set likely changed much less than that of other participants, will allow us to better understand whether the results are driven by changes in risk characteristics or perceptions.

A large body of finance literature going back to seminal papers of Fama and MacBeth, 1973 and Merton, 1973 establishes that firm risk has essential capital market implications. In turn, much accounting research has examined the capital market impact of disclosures of various risk-related characteristics (for example Dechow et al. 1996 illustrate the impact of earnings management disclosures). While there is limited existing literature addressing the new VIE guidance, we can rely on a range of prior studies to formulate our hypotheses regarding the behavior of various capital market participants in response to the new consolidation requirements. VIEs enable a company to remove underperforming or risky assets and debt from its balance sheet, thus, allowing it to benefit from a lower cost of capital. However, explicit or implied performance guarantees may essentially keep the risk of the venture with the sponsoring firm.¹⁰ If these vehicles are not disclosed in the financial statements, then capital market participants are not able to accurately estimate the company's risk profile – an example of this is, of course, Enron which created and hid over 3,000 off-balance sheet vehicles.¹¹ The disclosure of retained risks of VIEs will reveal a presumably greater than previously thought level of company risk and the market will adjust its behavior accordingly. For example, Niu and Richardson, 2006 find that for firms that disclose their off-balance-sheet securitization information, the off-balance sheet debt is treated by the capital markets in the same way as on-balance sheet debt in the determination of systematic risk. Under the new FIN 46 and FIN 46R guidance the explicit and implicit risks of off-balance-sheet structures are revealed as the company acknowledges that the economic structure of the VIE is such as to warrant consolidation. Thus, we expect that the disclosure of consolidation information, or expectation of such consolidation, will evoke significant reaction from the capital market. Below we formulate specific hypothesis regarding the four market participants/effects examined.

¹⁰ See Gorton and Souleles, 2005 for a discussion of implicit recourse.

¹¹ In addition to VIEs firms use other vehicles to structure financing that avoids recognizing assets and liabilities on their financial statements. This includes research and development limited partnerships, leasing transactions, asset securitizations, throughput arrangements, etc. Prior research has shown that use of these structures can lead to lower leverage, higher reported earnings, and avoidance of debt covenant violations among other effects (see Shevlin, 1987 and Beatty et al. 1995 for examination of R&D financing organization, and Mills and Newberry, 2005 for analysis of off-balance sheet and hybrid debt financing).

Prior research has found that analysts are not sophisticated in adjusting financial statements for off-balance sheet items - for example, Hirst et al. 2004 show that commercial bank equity analysts are able to analyze banks' exposure to interest rate risk when the fair value gains and losses on all financial assets and liabilities are recognized in financial statements but not when they are only disclosed in the notes to the financial statements (but not recognized in income). Thus, we expect that revelation of relevant VIE consolidation information is both new to financial analysts, and is difficult to impound in valuation.¹² Prior literature shows that in general disclosure of relevant information leads to more accurate forecasts (Lang and Lundholm, 1996, Hope, 2003). However, it has also been shown that disclosure of difficult information which complicates the forecasting or valuation process reduces analyst precision (Botosan and Stanford, 2005, Frankel et al. 2006). Anticipation of the application of FIN 46R, and not knowing what the ultimate effect might be, would make earnings more difficult to forecast. As many commentators responding to the 46R exposure draft noted, the criteria for consolidation and the computations necessary to apply them are highly complicated and subjective. The ambiguity surrounding the precise quantum of risk to which the enterprise is exposed as a result of involvement with VIEs as disclosed under the Interpretation would be expected to render the analysts' task more difficult - leading to reduced accuracy. That is, if VIE consolidation disclosures are difficult to process, as indicated, we will observe a decrease in the analyst forecasting ability. Our hypothesis in null form regarding the behavior of equity analysts is as follows:

Hypothesis 1a : The precision of equity analysts following FIN 46 firms will not change under the new consolidation guidance (or in anticipation of it).

Prior research has frequently used returns-earnings relations to investigate the weight attached to financial accounting items. Empirical tests in such studies are often based on comparisons of earnings response coefficients (ERCs), which are slope coefficients from regressions of unexpected returns on unexpected earnings. The rationale is that firm values are equal to the present values of their expected dividends and present values are based on firm-specific discount rates, which are increasing in systematic risk and/or informational risk. Easton and Zmijewski, 1989 and Collins and Kothari, 1989 use the dividend discount model to show that when unexpected earnings cause corresponding revisions in expectations, ERCs are decreasing in systematic risk. Because FIN 46 elicits consolidation and/or disclosures regarding risks not revealed by firms previously, capital market participants that did not have privileged access to firm

¹² Although security analysts are heavily focused on the net earnings of the firm, they also invest significant time and effort in the analysis of balance sheet items and their implication. For example, in March of 2003 (prior to the implementation of the new rule), analysts following Citigroup Inc. note that the firm is in the process of evaluating the impact of FIN 46 and discuss the impending changes to the assets and liabilities of the firm as well as implications for its capital ratios.

information prior to FIN 46 are hypothesized to heighten the discount rate and to attach lower weight to earnings surprises. We expect this because of the information risk associated with the ability to interpret disclosures or anticipated disclosures in a way that can lead investors to forecast as reliably as in prior periods when they did not suspect the existence of VIEs. Our hypothesis in null form regarding the earnings returns relationship is as follows:

Hypothesis 1b : ERCs will not change for FIN 46 firms under the new consolidation guidance (or in anticipation of it).

Both of the above hypotheses deal with market participants who prior to the promulgation of FIN 46 did not have detailed knowledge of VIE activities. However, several participants in the capital market are likely to have had significant knowledge due to unique relationships with sponsoring institutions. Such participants examined below are commercial banks and credit rating agencies.

A large body of finance literature indicates that banks possess superior information due to an existence of unique lender-borrower relationships (e.g. Leland and Pyle, 1977, Fama, 1985, Campbell and Kracaw, 1980; Lummer and McConnell, 1989, and Allen, 1990. See Boot, 2000 for a survey of this literature). Banks obtain information about the company at the loan initiation and initial screening and subsequently they have the ability to monitor both the firm performance and management's behavior over the duration of the loan. Such access to proprietary information means that banks know more about a company's prospects than other stakeholders. Yu, 2007 finds evidence that banks have superior information even when the public information environment of borrowers is rich and that this superior information is obtained through more efficient *ex ante* private information production. Consistent with prior literature we do not expect to reject the following null hypothesis:

Hypothesis 2a : Bank loan spreads will not change for FIN 46 firms under the new consolidation guidance (or in anticipation of it).

Relationships also play a critical role in the activities of other financial intermediaries. Jorion et al. 2005 provides evidence that credit analysts at rating agencies have access to confidential information that is not available to other securities professionals. Earlier research on the information content of rating agency announcements has shown that downgrades have a significant impact on daily stock prices, indicating that rating agencies, at least in some instances, are leading the market in information procurement. (Holthausen and Leftwich, 1986; Hand et al. 1992; and Dichev and Piotroski, 2001). In the context of off-balance-sheet assets and liabilities, there is evidence that the rating agencies were explicitly concerned with the disconnect between economic substance and legal form of transactions before the promulgation

of FIN 46. For example Standard and Poor's 2001 Corporate Ratings Criteria states that in the case of securitization transactions with either explicit or implicit recourse: "There is no rating benefit that is deserved because there is no significant transfer of risk and there is no point analyzing such a company differently from the way it would be analyzed if it had kept the receivables on the balance sheet." Consistent with prior literature and the rating agencies' guidance we do not expect to reject the following null hypothesis:

Hypothesis 2b : Credit ratings for securities of FIN 46 firms will not change under the new consolidation guidance (or in anticipation of it).

3 Data and Descriptive Statistics

To obtain our sample of firms we carried out an automated search using the SEC's Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system. We searched 10-K filings of all US firms from January of 2002 through June of 2006 for references to FIN 46, FIN 46R, VIEs and SPEs. The first relevant report identified is filed on January 21, 2003 for the period ending October 31, 2002. Overall we found 1,251 10-K filings, representing 882 distinct firms, which mention FIN 46 or FIN 46R. The relevant portions of these filings were read and analyzed and each filing was assigned to one of the following six categories: (1) 46 or 46R are discussed and the disclosure indicates or implies that appropriate consolidation was carried out; (2) it is specified that the firm intends to adopt 46 or 46R and expects some impact from consolidation; (3) 46 or 46R are discussed but the effect on the firm is specified to be minor and few details are provided; (4) 46 or 46R are discussed and the disclosure indicates or implies that appropriate deconsolidation was carried out; (5) 46 or 46R are mentioned but the disclosure specifies that the guidance does not apply to this firm or that the impact is immaterial; and (6) 46 or 46R are mentioned but the disclosure specifies that the firm is still assessing any impact, with no other details provided.¹³ See Appendix B for examples of disclosures in each of the six categories. Of interest to us are category 1 and 2 disclosers, firms revealing actual or expected substantial impact resulting from the adoption of new consolidation requirements. The firms in these categories (1 or 2) that form our sample must have deemed the events disclosed as material: otherwise they would not have needed to consolidate or disclose.¹⁴ The examples of category 1 disclosures in Appendix B illustrate the

¹³ In instances when the firm disclosed both material consolidation and deconsolidation the firm was classified as a category 1 discloser.

¹⁴ Like FASB statements, ARB 51, which addresses consolidations, augmented by Interpretation 46R, explicitly states in Note 2 that the rules of consolidation apply only with respect to items that are material to the enterprise:

materiality of consolidation impacts. On the balance sheets of Coca-Cola Co., Steelcase Inc., and Capital One Financial Corp. the debt increased as a result of FIN 46R-related consolidations by 32%, 14%, and 2% respectively. Clearly the first two companies' consolidation resulted in a very material change in debt, and in light of the provisions of SAB 99, the 2% debt increase for Capital One could very plausibly have been considered material (the actual debt increase was a substantial amount of \$178 million or 12% of the net income for Capital One for the 2004 fiscal year). Any errors in classification, i.e. classifying a non-46 firm as a 46 firm and vice versa would bias against us finding the hypothesized effects as they would attenuate the strength of found relationships between hypothesized variables. Overall, we classify 263 filings, representing 170 distinct firms, as category 1 or 2 disclosers – this is our sample of FIN 46 firms. See Panel A of Table 1 for the full distribution of identified filings among the six categories.

Panel B of Table 1 shows the distribution of the full set of filings by the fiscal period of the report. We observe that the filings are not clustered in any particular period. As expected, we observe that category 6 filers (those still assessing the impact) are mainly concentrated in the earliest period. The 263 filings of interest of category 1 or 2 (FIN 46 firms) appear more heavily distributed in the latter half of 2004 and subsequently. Modifying this FIN 46 sample to retain only the first observation for each firm, we delete 93 of the repetitive filings and observe that 30% of the first time filings relate to the fiscal years ending in 2002 or 2003, 45% in 2004 and 25% in 2005 or later. Recall that FIN 46R related disclosures were mandated for some entities for fiscal periods ending after December 15, 2003 and full application was required for fiscal periods ending after March 15, 2004. This means that all December fiscal year end firms had to apply the guidance by 12/31/2004, with the exception of small business filers, and overall we observe that 75% of relevant filers provided the information by that time.

The distribution of the 170 FIN 46 firms across various industries (by 2 digit SIC code) is presented in Panel C of Table 1. Division H: Finance, Insurance, And Real Estate, is the most frequent, representing 40% of the sample, with the main group being Holding And Other Investment Offices which represents 20% of the sample. Division D: Manufacturing, represents nearly another quarter of the sample, although spread over 13 different 2 digit codes.

*Opinions of the committee are not intended to be retroactive unless they contain a statement of such intention. They should not be considered applicable to the accounting for transactions arising prior to the publication of the opinions. However, the committee does not wish to discourage the revision of past accounts in an individual case if the accountant thinks it desirable in the circumstances. **Opinions of the committee should be considered as applicable only to items which are material and significant in the relative circumstances** (emphasis ours).*

In fact, ARB 43, addressing the authority of opinions, states in paragraph 9: "The committee contemplates that its opinions will have application only to items material and significant in the relative circumstances"

Panel D of Table 1 provides some basic firm characteristic for the sample of FIN 46 firms for the ten year period from 1997 through 2006. Because our empirical analyses utilize several various datasets and employ a multitude of variables we will describe the data requirements for each analysis, as well as present the summary statistics for the relevant variables, in the appropriate analysis sections below.

A ubiquitous variable that merits some discussion is the break point in time for the transition from the pre FIN 46 period to the post FIN 46 period. We must consider not only the implementation and impact of FIN 46 and FIN 46R but the events preceding it. The collapse of Enron in October through November of 2001 brought to the public eye the dangers and intricacies of off-balance-sheet financing. Subsequently, finance professionals, including the financial press, have continued to explore the implication of special purpose entities and the accounting rules applicable to them. Articles such as “Who else is hiding debt : Moving financial obligations into off-book vehicles is now a common ploy” in the January/2002 issue of BusinessWeek are evidentiary of the information discovery process preceding any change in accounting rules. Also preceding accounting guidance were voluntary disclosures by select firms, as motivated by the growing focus on the dangers of off-balance-sheet accounting (see WSJ 4/10/2002 article). After Enron (and after the passage of Financial Release No. 61 by the SEC which emphasized the need to disclose more information in the MD&A section), the disclosure levels of firms using off-balance-sheet entities increased significantly but not uniformly. As early as February of 2002, the accounting standard setters have made it known that rules for off-balance-sheet debt vehicles will be reevaluated and amended in the near future (FASB discussion on 2/13/2002) with the final versions of FIN 46 and FIN 46R issued respectively in January and December of 2003. Thus, despite the fact that FIN 46/46R was effective starting only with fiscal year 2003, it is evident that market participants were aware of related issues and of the impending guidance change at least as early as 2002. It is plausible that market participants responded to this newly found awareness by increasing their information search regarding firms’ VIE structures. For many firms the financial statements filed for fiscal year 2002, while not yet containing any information on the new accounting guidance, did contain details about entities which subsequently qualified as VIEs. For example Coca Cola Co. in its 2003 10-K revealed FIN 46 related consolidation of certain bottling operations because of profit guarantees and subordinated financial support. In its 2002 10-K it disclosed details about these operations, such as ownership levels of almost 40%, which likely led an educated investor to the conjecture that these operations will be consolidated under the new guidance. Similarly, Municipal Mortgage & Equity LLC which in its 2003 10-K disclosed the consolidation of securitization trusts, a year earlier revealed that the company participates in securitization mechanisms: “The Company may also structure transactions whereby a third party buys bonds directly from a seller and the Company subsequently purchases a residual interest in a bond

securitization holding the tax-exempt bonds.” Analysts relying on company information in early 2003 projected in their reports that the company will do additional securitizations to fund upcoming capital needs.

Correspondingly, we examine two significant break points in our analyses. First, we consider calendar years 2002 and subsequent (variable “After 2001”), which captures the effects of accounting scandals, the expectation of a change in accounting guidance, the increased press coverage and voluntary firm disclosures. Second, we consider calendar years 2004 and subsequent (variable “After 2003”), which captures the effects of the implementation of FIN 46 and FIN 46R.

4 Empirical Analysis

4.1 Equity Market Participants

The two tests within this section seek to examine whether equity market participants adjusted their beliefs about riskiness of FIN 46 firms subsequent to the accounting scandals of early twenty first century and the accounting guidance that was promulgated in response.

4.1.1 Equity Analysts

We employ a difference-in-difference approach using a matched sample in that we examine whether the different dependent variables we focus on change for FIN 46 firms in a systematically different way than they do for non-FIN 46 firms between the pre- FIN 46 period and the post FIN 46 period. Specifically, we examine the three time periods: pre-2002 (control period), post-2001(anticipation period), and post-2003 (implementation period). This difference-in-difference approach effectively controls for other regulatory events that occurred around the FIN 46 debate, notably the Sarbanes Oxley Act (July 30, 2002) and Regulation FD (effective as of October 23, 2000). This research approach is effective since there are no reasons why a firm that is subject to FIN 46 is more (or less) likely to be affected compared to control firms by other rule changes (e.g. REG-FD or the Sarbanes Oxley Act) occurring during the same period. We construct the matched sample by picking the firms that are closest in size and book to market to the sample firms in the Fama-French 48 industry in the same year but which did not make any FIN 46 disclosures.

We examine two characteristics of analyst forecasts: the estimated precision of public and private information relied upon. These measures are rooted in the fact that forecast dispersion reflects the quality

of private information, errors in individual forecasts reflect the quality of both public and private information, and the errors in the consensus estimates mainly reflect the quality of public information.¹⁵

The anticipation of the information to be provided by the implementation of FIN 46 is likely to have depressed the analysts' incentives to gather information prior to the FIN 46 disclosures. This, in turn, would decrease the precision of private information. The effect of actual implementation of FIN 46 on private precision is ambiguous and it depends on whether the public disclosure encourages or discourages the acquisition of more precise private information. Hence, we cannot predict a particular directional effect of the implementation of FIN 46 on the precision of private information. We also offer no predictions regarding the change in the precision of public information either in anticipation or upon implementation of FIN 46. The precision of public (common) information reflects the extent to which analysts rely on the public information in generating their forecasts. While greater levels of disclosures may contribute toward increasing the precision of public information, if the FIN 46 information is difficult to interpret it may in fact have decreased it.

We obtain our analyst data from the Institutional Brokers Estimate System (I/B/E/S). We use information from the detail databases and focus on quarter forecasts of earnings per share. We calculate the Barron et al. 1998 measures of precision or quality of common and idiosyncratic information using the detail files (as done in prior literature) as follows:

$$Common\ Precision = \frac{S\hat{E} - \frac{\hat{D}}{N}}{\left[\left(1 - \frac{1}{N} \right) \hat{D} + S\hat{E} \right]^2}$$

$$Idiosyncratic\ Precision = \frac{\hat{D}}{\left[\left(1 - \frac{1}{N} \right) \hat{D} + S\hat{E} \right]^2}$$

$S\hat{E}$ is the signed forecast error squared scaled by the absolute value of the actual EPS (where the forecast error is the actual EPS minus the mean of individual forecasts in the 90 days prior to the earnings announcement). $\hat{D}$ is the variance of the individual forecasts scaled by the absolute value of the actual EPS, and N is the number of analysts covering the firm. To calculate these measures we use all individual forecasts made in the 90 days prior to the announcement of quarterly earnings (retaining the latest forecast

¹⁵ See Baron et al. 1998, Bowen et al. 2001, Barron et al. 2002, and Botosan et al. 2004 for a more elaborate discussion of the intuition behind these measures.

for each analyst). We winsorize common and idiosyncratic precision variables at 1% to eliminate the effect of extreme outliers.

We estimate the following regression using OLS with both analyst characteristics (*Common Precision* and *Idiosyncratic Precision*) described above as dependent variables:

$$\begin{aligned} \text{Characteristic} = & \beta_0 + \beta_1 \text{FIN46} + \beta_2 \text{After2001} + \beta_3 \text{After2003} + \beta_4 \text{After2001} \cdot \text{FIN46} \\ & + \beta_5 \text{After2003} \cdot \text{FIN46} + \beta_6 \text{Size} + \beta_7 \text{ROA} + \beta_8 \text{R \& D} \\ & + \beta_9 \text{Leverage} + \beta_{10} \text{Growth} + \beta_{11} \text{Loss} + \sum_{M=12}^{59} \beta_M \text{Industry} \end{aligned} \quad (1)$$

Our null *Hypothesis 1a* predicts that $\beta_4=0$ and $\beta_5=0$. Table 2 presents the estimation results of equation (1). The sample period is 1990-2006 and the units of observation are firm-quarters. The *After2001* (*After2003*) dummy variable takes a value of 1 when an observation belongs to calendar years starting from 2002 (2004). The *46R* dummy is equals 1 if the firm is a category 1/2 discloser per our classification. *Size* is calculated as the log of total assets at prior fiscal quarter end, *ROA* as Net Income before extraordinary items scaled by prior quarter's total assets, *R&D* as the R&D expense scaled by prior total sales, *Leverage* as the total debt of the firm scaled by total assets at fiscal quarter end, *Growth* as the percent change in sales from prior quarter and *Loss* as a dummy variable equal to 1 if the firm had negative pre-tax income.¹⁶ These variables are all consistent with those used in prior literature (e.g. Barth et al. 2001; Bowen et al. 2001; Gu and Wu, 2003; Lang et al. 2003; Mohanram and Sunder, 2006). We also include 48 Fama French industry fixed effects in our specification. Including these fixed effects helps us rule out the possibility that unobserved industry characteristics drive our results. In addition, we added two variables also occasionally used in the literature, which did not change the results of interest (not tabulated): *volume* calculated as average daily trading volume in the prior calendar year and stock price *volatility* calculated as standard deviation of daily returns in the prior calendar year. Huber/White Robust standard errors of estimates are provided below the estimated values, where the errors are clustered at firm level.

We find strong results for idiosyncratic analyst precision. In the post Enron period of expected accounting guidance revisions, the precision of idiosyncratic information is reduced for FIN 46 firms more than for all other firms (After 2001 x FIN 46). This result suggests that FIN 46 reduced the precision of private information. This is consistent with the argument that the anticipation of FIN 46 either reduced analysts' incentives to gather private information or caused whatever private information

¹⁶ Using market capitalization to define Size, and Net Income to define Loss does not change the results.

about future income is acquired after FIN 46 implementation to be noisier. Interestingly, we find no evidence that precision of private information is further reduced for these firms upon implementation of FIN 46 or that precision of public information is reduced for FIN 46 firms upon either the anticipation or the implementation of the guidance (in all three instances we see a decrease in precisions albeit not statistically significant).

4.1.2 Earnings Response Coefficient Analysis

We obtain all data for ERC analyses from CRSP, Compustat and I/B/E/S data files. Starting with the universe of firms for 1990-2006 we require that the following relevant data be non-missing: from CRSP the firm's annual returns, CRSP size decile annual returns, and historical data to calculate beta; from Compustat the market to book ratio and market capitalization. Additionally we impose the following data requirements utilized in prior literature: beta between -10 and +10, beta calculated based on at least 55 monthly observations, and positive value of common equity.¹⁷ Our dependant variable is size adjusted return of the stock¹⁸ obtained by calculating the compounded return of the stock and the CRSP size decile returns (using year-end decile assignments) based on one year daily returns starting three months after the start of the fiscal year. We replicate the design of Teoh and Wong, 1993 and estimate the following OLS regression separately for the period prior to and including 2001, the period after 2001 and the period after 2003:

$$\begin{aligned} \text{Return} = & \beta_0 + \beta_1 UE + \beta_2 UE \cdot MB + \beta_3 UE \cdot Beta + \beta_4 UE \cdot Size + \beta_5 FIN46 + \\ & + \beta_6 FIN46 \cdot UE + \sum_{M=7}^{54} \beta_M Industry \end{aligned} \quad (2)$$

Our *Hypothesis 1b* predicts that β_6 in the Post periods will be lower than β_6 in the Pre 2002 period, i.e. that the ERCs for FIN 46 firms have decreased subsequent to the adoption of FIN 46 or in anticipation of such adoption. Table 3 summarizes the results of the estimation for firm-year units of observation. The dependent variable is abnormal *Return* and the unexpected earnings surprise is *UE* (actual EPS less latest mean analyst forecast of EPS prior to earnings release date divided by stock price at fiscal year end). The *FIN 46* dummy equals 1 if the firm is in our FIN 46 sample (i.e. it is a category 1 or 2 discloser per our classification). *Beta* is calculated from the 1 factor model regressing stock return on just the market return, both adjusted for the risk-free rate, using the monthly data from the 5 preceding years (using the 3 or 4 factor model does not change the results). *Size* is the lagged log of market value of

¹⁷ Additionally, we have replicated the analysis imposing the additional restriction of total assets exceeding 5 million, which did not affect the findings.

¹⁸ While Teoh and Wong, 1993 use market adjusted returns, other literature such as Bradshaw et al. 2006 point out the advantage of using size adjusted returns.

equity and *MB* is the lagged ratio of market to book value of equity. Per Teoh and Wong definitions, the *Beta*, *Size* and *MB* variables are all converted into dummy variables representing observations below and above the median in a given fiscal year. Prior literature has shown that the security price responses to unexpected earnings are non-linear. More specifically, because the absolute value of unexpected earnings is negatively correlated with earnings persistence the response coefficients on extreme positive and negative surprises will be of much smaller magnitude (Freeman and Tse, 1992). Correspondingly, we carry out the OLS regression above on a modified sample of observations, where we excluded the observations with unexpected earnings in the top or bottom decile (ranking performed within each fiscal year). Additionally, prior literature has shown that observed ERCs may be artificially lowered due to measurement error in the proxies for the earnings expected by the market (Bartov et al. 1999). Correspondingly, we include a measure of dispersion of analyst forecasts as an independent variable (not tabulated) and find that the results are qualitatively unchanged. Huber/White Robust standard errors of estimates are provided below the estimated values, where the errors are clustered at firm level.

We observe that the coefficient on *FIN 46*UE* is not statistically different from zero in the years 1990-2001 but is negative and statistically significant in the years 2002-2006 (middle column). It retains a large negative magnitude in the years 2004-2006 examined separately, although the statistical significance is lost (possibly due to a reduced number of observations). This result suggests that the accounting scandals and the intimations of an impending stricter consolidation standard for FIN 46 firms increased perceived risk beyond the systematic risk, resulting in a decrease in the weight attached to earnings surprises.

4.2 Other Information Users

The two last tests within this section seek to examine whether other (non-equity-market) sophisticated information users adjusted their beliefs about riskiness of FIN 46 firms subsequent to FIN 46 implementation and in anticipation of it.

4.2.1 Bank Loan Analysis

The initial list of our sample consists of all publicly traded firms regardless of whether they have any bank loans during the sample period of 1990-2006 per LPC Dealscan database.¹⁹ Data in the LPC Dealscan database are compiled from the SEC filings by public firms and self-reporting by banks. The loan data in the LPC Dealscan database are reported at deal and facility level. Following prior literature

¹⁹ Other papers using the LPC Dealscan database include Strahan, 1999, Sunder, 2002, Bharath et al. 2006, Beatty and Weber, 2003, Kim, et al. 2006 and Asquith et al. 2005.

(e.g. Kim et al. 2006), we consider each facility as a separate observation as loan characteristics vary across facilities and only include term loans, revolvers and 364-day facilities in our sample.

For our empirical design, a selection model is appropriate because of non random assignment of firms into the bank loan sample. If borrowers with high credit quality (i.e. ones with lower *Spread*) are less likely to be involved in establishing variable interest entities and more likely to rely on bank loan funding, then the error term in equation (3) below is likely to be correlated with whether borrowers choose to hide debt in external entities. In such a case, the estimate of the coefficient on *After2001*FIN 46* or *After2003*FIN 46* is likely to be biased. To control for this potential self-selection bias, we estimate our equation with a selection equation that includes certain firm characteristics to capture credit quality.²⁰ The following equation is estimated using a two-step Heckman Selection Model (see Li and Prabhala, 2007 for an excellent discussion of the impact of self selection on corporate finance decisions, and Kim et al. 2006 for the application of a self-selection model to auditor characteristics and bank loans):

$$\begin{aligned}
 Spread = & \beta_0 + \beta_1 FIN46 + \beta_2 After2001 + \beta_3 After2003 + \beta_4 After2001 \cdot FIN46 \\
 & + \beta_5 After2003 \cdot FIN46 + \beta_6 Beta + \beta_7 Size + \beta_8 MB \\
 & + \beta_9 Leverage + \beta_{10} LoanMaturity + \beta_{11} PerformancePricing \\
 & + \beta_{12} Syndicate + \beta_{13} NumberLenders + \beta_{14} LoanSize \\
 & + \sum_{M=15}^{31} \beta_M Year + \sum_{M=32}^{51} \beta_M Purpose + \sum_{M=52}^{55} \beta_M Type + \sum_{M=56}^{103} \beta_M Industry + u_1
 \end{aligned} \tag{3}$$

$$\alpha_0 + \alpha_1 Beta + \alpha_2 Size + \alpha_3 MB + \alpha_4 Leverage + u_2 > 0 \tag{4}$$

$$u_1 \sim N(0, \sigma), u_2 \sim N(0,1), \text{ and } corr(u_1, u_2) = \rho$$

Equations (3) and (4) represents the selection model. We include firm specific variables that likely affect the decision to borrow from a bank as well as the spread charged by the banks. We include firm-specific risk characteristics such as *Beta*, *Size* (decile of company market value), *Market to Book* ratio and prior years' *Leverage* (ratio of long term debt to total assets) to capture the contribution of these factors to spread.²¹ These firm-specific characters are also likely to affect the decision of the firm to borrow from banks. Therefore, we use the same firm-specific characteristics in our selection equation (Equation (4)).

²⁰ Alternative specifications for the participation equation exist. We included credit risk, liquidity ratios, interest coverage ratios, and year dummies in the participation equation specification and obtained quantitatively similar results.

²¹ We repeat the analysis excluding *Leverage* and *Beta* from control variables and find that the results remain unchanged.

We hypothesize in 2a that $\beta_4=0$ and $\beta_5=0$, i.e. that bank spreads will not change for FIN 46 firms after 2001 or after 2003. Table 4 presents the estimation results of equations (3) and (4) where the units of observation are firm-years. The *After2001* (*After2003*) dummy variable takes a value of 1 when an observation belongs to calendar years starting from 2002 (2004). The *46R* dummy is equals 1 if the firm is a category 1/2 discloser per our classification.

Previous research on bank loan contracts shows that several loan-specific characteristics are related to the interest rate charged by banks (e.g. Strahan, 1999; Dennis et al. 2000; Bharath et al. 2006, Kim et al. 2006). Therefore, we include in equation (3) a set of loan-level variables to isolate the potential effect of loan characteristics on the loan spread from the effect of our test variables. The *Loan Maturity* variable is the log of the loan maturity period in months. The *Loan Size* variable is the amount of loan facility given to a borrower. Bae and Goyal, 2003; Bharath et al. 2006 show that banks charge a higher interest rate for a longer-term loan and for a smaller loan facility. This suggests that the expected sign of *Loan Size* is negative and of *Loan Maturity* is positive. *Syndicate* is a binary variable which is equals 1 if the loan is syndicated. If the interest rate charged off the syndicate and non-syndicate loans is significantly different, this variable would capture the difference.

We also include *Loan Purpose*, *Loan Type*, *Year*, and *Fama-French 48 Industry* fixed effects in our specification. Including these fixed effects helps us rule out the possibility that unobserved loan purpose, loan type, year, and industry characteristics drive our results. We include two more dummies to capture the impact of previously documented important factors such as performance pricing and number of lenders. *Performance Pricing* is a binary variable which is equal to 1 if the loan contract includes performance pricing options and *Number of Lenders* is the number of lending banks for each loan facility. *Loan Type* dummies are based on term loans, revolvers greater than one year, revolvers less than one year and 364-day facilities loans.

In Panel B of Table 4, we report the results obtained using two different samples. The first sample includes all firms with sufficient data. The second sample contains the FIN 46 firms as well as firms that are closest in size and book to market in the same Fama-French 48 industry in the same year but which did not make any FIN 46 disclosures. In constructing the second sample, we require the matched firms to have bank loan data, which effectively removes the selection criteria. Hence the matched sample result is estimated using OLS.

For both samples, we find that estimated coefficients for *After2001*FIN 46* and *After2003*FIN 46* are not statistically significant after controlling for many loan and firm characteristics that are shown to be important for spread determinants. This result suggests that borrowing costs of FIN 46 firms did not change in the new environment differently from borrowing costs of other firms. We may infer that banks

were aware of the fundamental risk characteristics of FIN 46 firms earlier than equity market participants. Additional analysis (not tabulated) indicates that FIN 46 firms are more likely to access the bank debt market than the seasoned equity offerings market. We conjecture that since these firms are more likely to borrow from banks their risk is better perceived (or can be better investigated) by banks. The revelation of off-balance-sheet debt structures does not impact bank spreads, since banks were aware of the overall debt structure of the firms previously (due to relationship banking etc). Our results are in line with the prior literature's evidence of banks' superior knowledge.

4.2.2 Credit Rating Analysis

We use credit ratings issued by the four rating agencies that issue ratings as reported by FISD: Standard and Poor's, Moody's, Fitch, and Duff and Phelps. S&P rates bonds from AAA down to D. Each letter is known as a "class". For the AA to CCC classes, S&P also supplies modifiers, such as A+, A, or A-. Similarly, Moody's rates bonds from Aaa to C, with modifiers such as A1, A2, or A3. Fitch's and DPR's rating symbols are nearly identical to S&P's. Following Jorion et al. (2005), we transform the credit ratings into a cardinal scale, starting with 23 as AAA, 22 as AA+, 21 as AA, and so on until 1 (see Appendix C for the cardinal scale assignment). We use the following equation system to estimate the change in credit ratings of FIN 46 firms after 2001 after controlling for various factors shown to affect credit ratings. As in the bank loan analysis, we pay special attention to the impact of selection (coverage by credit rating agency) on determinants of credit ratings and estimate the Heckman Selection model. Our results (available upon request) indicate that the Mill's ratio is not statistically significant, which indicates that OLS results are not biased. Hence, we estimate the following specification:

$$\begin{aligned}
 \text{Rating} = & \beta_0 + \beta_1 \text{FIN46} + \beta_2 \text{After2001} + \beta_3 \text{After2003} + \beta_4 \text{After2001} \cdot \text{FIN46} + \\
 & + \beta_5 \text{After2003} \cdot \text{FIN46} + \beta_6 \text{Beta} + \beta_7 \text{Size} + \beta_8 \text{MB} + \beta_9 \text{Leverage} + \\
 & + \sum_{M=10}^{26} \beta_M \text{Year} + \sum_{M=27}^{74} \beta_M \text{Industry}
 \end{aligned} \tag{5}$$

In this specification, the left hand side variable is an inverted credit rating rank (1 is the poorest rating; 23 is the best rating). The *After2001* (*After2003*) dummy variable takes a value of 1 when an observation belongs to calendar years starting from 2002 (2004). The *46R* dummy equals 1 if the firm is a category 1/2 discloser per our classification. Our null *Hypothesis 2b* predicts that $\beta_4=0$ and $\beta_5=0$, i.e. that security credit ratings will not change for FIN 46 firms after 2001 or after 2003. We include firm specific risk characteristics such as *Beta*, *Size* (decile of company market value), *Market to Book* ratio and prior

years' *Leverage* (ratio of long term debt to total assets) to capture the contribution of these factors to rating.²² In Panel A of Table 5, we provide the sample statistics of variables used in the specification.

We included year and industry dummies (Fama-French 48 Industry classification) to capture any year or industry credit rating spread variation. Huber/White Robust standard errors of estimates are provided below the estimated values, where the errors are clustered at firm level. We report the results in Panel B of Table 5. We find that for both the full and the matched sample the estimated coefficient for *After2001*FIN 46* is not statistically significant. *After2003*FIN 46* is statistically significant in the full, but not the matched sample. This generally suggests that the rating agencies possibly had access to some information about off-balance-sheet financing of FIN 46 firms in the earlier period and, thus, did not change their ratings as a result of FIN 46 disclosures or in anticipation of such disclosures.²³

5 Concluding Remarks

In this paper we investigate the impact of the promulgation of FIN 46 and FIN 46R on decisions of different and distinct groups of market participants, as manifested in a variety of measures. FASB had debated the appropriateness of "parking" assets and debt in VIEs off the balance sheets following the accounting scandals that surfaced during 2001 and beyond. This debate culminated in the issuance of FIN 46 and its subsequent revision to clarify the identification of entities that are subject to consolidation under Accounting Research Bulletin No. 51 *Consolidated Financial Statements*. The interpretation and its revision require a primary beneficiary of a VIE, who bears the majority of that entity's risk and/or reaps the majority of the rewards, to consolidate the VIE and to include the results of its activities in the consolidated financial statements. The Interpretation also requires expanded disclosures of the firm's involvement in the VIE. Thus, under the new FIN 46 and FIN 46R guidance the explicit and implicit risks of off-balance-sheet structures are revealed as the company acknowledges that the economic structure of the VIE is such as to warrant consolidation

Did FIN 46 and FIN 46R accomplish their objective of making the investment community aware of what were the hidden risks up to the point in time at which FASB made known its intention to expand the types of entities subject to consolidation? And, consequently, did the new guidance or the anticipation of its impact on the financial statements of affected firms change the pattern of decision-making by different constituencies of market participants?

²² We repeat the analysis excluding Leverage and Beta from control variables and find that the results remain unchanged.

²³ Our results remain unaffected when only S&P ratings are used.

Our analyses and findings suggest that the new consolidation guidance had an impact on the decisions of those market participants who before 2002 were not likely to have had significant information about the activities of VIEs sponsored by the firms affected by FIN 46 and FIN 46R. Moreover, we find that this impact occurred prior to the actual implementation of the interpretation (and as far back as 2002) following the press coverage, voluntary disclosures and other revelations that presaged the GAAP change. In anticipation of the change, market actors who were previously not aware of the involvement of the affected firms with VIEs, reacted in a way that betrays a more acute awareness of and sensitivity to the risk they were not cognizant of before. Specifically, equity investors generally reacted by attaching a smaller weight to earnings surprises. It also appears that because of the complexity injected by the expectation of new guidance (such as the ambiguity of which VIEs should be consolidated and the difficulty of impounding the consolidation effect into the valuation models) as well as a possible decrease in the incentive to gather private information, analysts forecasts exhibited larger idiosyncratic errors. On the other hand, constituencies that were more likely to be informed about the VIEs' activities did not appear to change their conduct. Thus, banks did not increase the spreads they required from FIN 46 firms relative to other firms. This does not come as a surprise, as, indeed, it is well documented that banks have access to superior information not generally available to other investors. Credit rating agencies, also richly endowed with information, did not downgrade the bond ratings of FIN 46 firms more than the rating of other firms.

The saga of consolidation is ongoing and it promises to provide a rich menu for future research "thanks" to the unfortunate sub-prime mortgage crises that recently engulfed the markets. Currently, FASB is debating the further expansion of the set of entities that should be consolidated. For example, Qualified Special-Purpose Entities would no longer be automatically excluded from the requirement to consolidate as is now the case under SFAS 140 (FASB 2000). And new qualitative criteria may well require the consolidation or disclosure of special-purpose entities with respect to which an enterprise has "implicit" or "reputational" risk²⁴. If FASB requires such consolidation, "implicit" liabilities that manifest "reputational" risk would be reflected as liabilities in the financial statements of the enterprise. In light of our findings in this paper, this would likely increase the perceived risk and the manifestation of such risk

²⁴ In a June 4, 2008 news item, Reuters reports: "Banks that sponsor asset backed securities may soon have to tell investors about the risks involved in deals they put together, even if the risks are only to their reputations, members of the Financial Accounting Standards Board said at a meeting on Wednesday". The article also illustrates the gravity of the risks: "Last year, for example, Citigroup Inc took \$49 billion of structured investment vehicles onto its balance sheet, when few investors had been aware of their existence just six months before". Reuters quotes FASB member Leslie Seidman to say: "If you're a sponsor, presumptively you've got reputational risk, so tell us about the deals you've done".

(decreased weight attached to earnings). A very difficult but interesting question for future research will be to investigate whether such potential expanded consolidation rules are welfare enhancing.

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Appendix A : Subsequent Accounting guidance:

2/12/2004 : FASB Staff Positions FIN 46-R-1, 46-R-2, 46-R-3

Specifies when to treat a particular asset of a VIE as a separate VIE; specifies that even an entity hitherto profitable will have expected losses and thus is subject to an evaluation; provides guidance on determining whether the equity investors lack direct or indirect ability to make decision through voting or similar rights (largely retaining qualitative approach).

4/30/2004 : FASB Staff Position FIN 46-R-4

A technical correction regarding guarantor-leasor relationships.

3/3/2005 : FASB Staff Position FIN 46-R-5

Reinforces the requirement of entities to consider in application of FIN 46R the existing implicit variable interests (implied pecuniary interests in an entity that changes with changes in the fair value of the entity's net assets exclusive of variable interests). Unlike explicit variable interests, which entail direct absorption or receipt of the variability of the entity, implicit interests deal with the same absorption or receipt but via indirect paths. Due to diversity in practice, judgment calls remain necessary in the application of this position.

4/13/2006 : FASB Staff Position FIN 46-R-6

Specifies the various variabilities to be considered in application of FIN 46R (such as cash flow variability and fair value variability) and provides guidance on the determination whether certain instruments create or absorb variability.

5/11/2007 : FASB Staff Position FIN 46-R-7

Clarifies the application of FIN 46R to investment companies.

Appendix B : Examples of FIN 46 and FIN 46R Disclosures (Categories 1 & 2 are FIN 46 Firms)

Category 1 : Impact from disclosed or implied consolidation²⁵

Capital One Financial Corp, 12/31/2004

“In July 2003, the Company adopted the provisions of FASB interpretation No. 46®, Consolidation of Variable Interest Entities, an Interpretation of ARB No. 51, Revised (“FIN 46®”). The Company has consolidated all material variable interest entities (“VIEs”) for which the Company is the primary beneficiary, as defined by FIN 46®. The consolidation of the VIEs resulted in a \$15.0 million (\$23.9 pre-tax) charge for the cumulative effect of a change in accounting principle...”

Coca Cola Co, 12/31/2005

“Our Company holds interests in certain entities, primarily bottlers, previously accounted for under the equity method of accounting that are considered variable interest entities. These variable interests relate to profit guarantees or subordinated financial support for these entities. Upon adoption of Interpretation 46(R) as of April 2, 2004, we consolidated assets of approximately \$383 million and liabilities of approximately \$383 million that were previously not recorded on our consolidated balance sheets...”

Steelcase Inc, 2/27/2004

“In May 2000, we began leasing aircraft through a synthetic lease structure that meets the FIN 46(R) definition of a special-purpose entity. As of February 27, 2004, the aircraft was capitalized on our balance sheet and the related obligation was recorded as debt as required by the provisions of FIN 46(R). This change increased fixed assets by \$41.3 and debt by \$48.0...”

Category 2 : Expected impact from consolidation upon adoption

Bear Stearns Companies Inc, 11/30/2003

“Although the Company is still evaluating the impact of FIN No. 46 (R) relating to interests in VIEs that existed prior to January 31, 2003, it is reasonably possible that FIN No. 46 (R) will require consolidation of, or additional disclosures related to, the entities described below...”

Great Atlantic & Pacific Tea Co Inc, 2/28/2004

“We believe it is likely that these franchisees are VIE's, and that we are the primary beneficiary. Therefore, we would be required to consolidate these entities upon FIN 46 and FIN 46-R becoming effective for our Company...”

²⁵ See discussion on materiality of these disclosure in section 3.

Category 3 : Minor impact (with few details provided)

Gulfterra Energy Partners L P, 12/31/2003

“We have no SPE's as defined by FIN Nos. 46 and 46-R. We have evaluated our joint ventures, unconsolidated subsidiaries and other contractual arrangements that could be considered variable interests or variable interest entities that were created before February 1, 2003 and have determined that they will not have a significant effect on our reported results and financial position when we adopt the provisions of FIN No. 46-R in the first quarter of 2004...”

Category 4 : Impact from deconsolidation

Greater Bay Bancorp, 12/31/2003

“In accordance with the provisions of Financial Accounting Standard Board (“FASB”) Interpretation No. (“FIN”) 46, “Consolidation of Variable Interest Entities” (“FIN 46”), we have deconsolidated the six subsidiary trusts ... We do not expect FIN 46 to have any other material impact on our financial condition or operating results...”

Category 5 : No impact or immaterial impact

Ambassadors International Inc, 12/31/2003

“The adoption of FIN 46 did not and will not have a material effect on the Company’s financial position or results of operations...”

Category 6 : Impact is still being assessed

Carlisle Companies Inc, 12/31/2003

“The Company is evaluating the impact of applying FIN 46R but has not yet completed the analysis. It is not expected that the adoption of this interpretation will have a material impact on the Company’s statement of earnings or financial position...”

Appendix C : Credit Rating Scales

In this appendix, we summarize the credit ratings issued by the four rating agencies - Standard and Poor's, Moody's, Fitch, and Duff and Phelps- that issue ratings as reported by FISD. We follow Jorion, Liu and Shi (2005) to assign cardinal scales to rating classes.

Moody's	S&P	DPR	Fitch	Cardinal Scale
Aaa	AAA	AAA	AAA	23
Aa/Aa1	AA+	AA+	AA+	22
Aa2	AA	AA	AA	21
Aa3	AA-	AA-	AA-	20
A/A1	A+	A+	A+	19
A2	A	A	A	18
A3	A-	A-	A-	17
Baa/Baa1	BBB+	BBB+	BBB+	16
Baa2	BBB	BBB	BBB	15
Baa3	BBB-	BBB-	BBB-	14
Ba/Ba1	BB+	BB+	BB+	13
Ba2	BB	BB	BB	12
Ba3	BB-	BB-	BB-	11
B/B1	B+	B+	B+	10
B2	B	B	B	9
B3	B-	B-	B-	8
Caa/Caa1	CCC+	CCC	CCC+	7
Caa2	CCC		CCC	6
Caa3	CCC-		CCC-	5
Ca	CC		CC	4
C	C		C	3
P-1	D	DD	D/DD/DDD	2
NR	NR	NR	NR	1

Table 1 : Descriptive Statistics**Panel A : Categories of Disclosure**

FIN 46 Firms	Disclosure Category		Filings	
	1	Consolidation	226	18%
	2	Plan of Consolidation	37	3%
	3	Consolidation (immaterial)	23	2%
	4	Deconsolidation	131	10%
	5	No Impact	743	59%
	6	Impact Still Assessed	91	7%
TOTAL			1,251	100%

Panel B : Timing of Filings

Fiscal Year End	TOTAL	By Category							
		1	2	1+2	3	4	5	6	
				(1st filing only)					
10/31/2002 - 12/31/2002	128	0	23	23	0	0	72	33	
01/01/2003 - 12/31/2003	313	20	10	28	2	31	203	48	
01/01/2004 - 03/31/2004	60	2	1	3	1	1	49	5	
04/01/2004 - 12/31/2004	431	93	2	74	12	52	269	3	
01/01/2005 - 03/31/2006	319	111	1	42	8	47	150	2	
TOTAL	1,251	226	37	170	23	131	743	91	

Panel C : Industry Distribution of FIN 46 Firms

2 Digit SIC Code	Industry Group Name	Frequency	Percent
67	Holding And Other Investment Offices	34	20.0%
49	Electric, Gas, And Sanitary Services	15	8.8%
60	Depository Institutions	11	6.5%
63	Insurance Carriers	11	6.5%
28	Chemicals And Allied Products	8	4.7%
15	Building Construction General Contractors And Operative Builders	6	3.5%
36	Electronic And Other Electrical Equipment And Components, Except Computer Equipment	6	3.5%
73	Business Services	6	3.5%
	Other (31 codes each 4 firms or less)	73	42.9%
TOTAL		170	100.0%

Panel D : Firm Characteristics of FIN 46 Firms

The values below are statistics of the 167 distinct FIN 46 firms for the ten year period from 1997 through 2006 (for three of our 170 FIN 46 firms didn't have data). **Market Value of Equity** is the price at fiscal year close times common shares outstanding (MM). **Book Value of Equity** is total common equity at fiscal year close (MM\$). **Stock Price** is as of fiscal year close (s&c). **Total Assets** are total assets at fiscal year close (MM\$). **Total Employees** is total employees at fiscal year close (M). **EPS** is basic EPS excluding extraordinary items (s&c). **Annual Change in EPS** is percentage change in EPS (Note that the large standard deviation is due to firms with extremely small values of lagged EPS. Excluding firms with very small absolute value of lagged EPS significantly reduces the standard deviation of the percent change). **Annual Change in Sales** is percentage change in net sales. **ROA** is income before extraordinary items (MM\$) divided by lagged total assets (MM\$). **Leverage** is total long term debt (MM\$) plus debt in current liabilities (MM\$) divided by total average assets at current and lagged fiscal years (MM\$). **% of Loss Firm Years** is percentage of firm-years with pretax income less than zero.

Variable	Mean	Std Dev	5th Pct.	50th Pct.	95th Pct.
Market Value of Equity (\$mill)	13,650	44,244	37	1,570	59,962
Book Value of Equity (\$mill)	4,337	12,454	13	743	18,770
Stock Price	33.04	39.13	2.00	25.59	79.88
Total Assets (\$mill)	40,878	153,155	77	2,821	255,950
Total Employees (th)	24.08	58.34	0.05	3.87	137.00
EPS (excluding EI)	1.57	4.47	(1.44)	1.40	5.56
Annual Change in EPS	13%	1068%	-276%	0%	188%
Annual Change in Sales	23%	87%	-20%	11%	86%
ROA (based on Income before EI)	3%	16%	-12%	3%	14%
Leverage (debt as % of average assets)	37%	24%	1%	35%	80%
% of firm years with pre-tax Loss	16.2%	N/A	N/A	N/A	N/A

Table 2: Equity Analysts Analysis

The dependent variables in this pooled OLS regression are Coverage (the number of analysts covering the firms), Common (precision of common information), and Idiosyncratic (precision of idiosyncratic information). The sample period is 1990-2006 and the units of observation are firm-quarters. **FIN 46** is a dummy variable that takes a value of 1 if the observation is for a FIN 46 firm. **After 2001** is a dummy variable that takes a value of 1 if the observation belongs to after 2001. **After 2003** is a dummy variable that takes a value of 1 if the observation belongs to after 2003. **Size** is log of total assets at prior fiscal quarter end. **ROA** is the Net Income before extraordinary items scaled by prior quarter's total assets. **R&D** is the R&D expense scaled by prior total sales. **Leverage** is the total debt of the firm scaled by total assets. **Growth** is the percent change in sales from prior quarter. **Loss** is a dummy variable equal to 1 if the firm had negative pre-tax income. The Huber/White Robust standard errors are clustered by firm and reported in parentheses. ***, ** and * shows statistical significance at 1,5 and 10% level respectively.

Panel A. Descriptive Statistics on variables used in analysis of equity analyst analysis

	Common	Idiosyn.	FIN 46	After 2001	After 2003	After 2001 x FIN 46	
Mean	463.71	1516.78	0.52	0.43	0.27	0.22	
Median	56.30	88.27	1.00	0.00	0.00	0.00	
St. Dev.	1384.77	4029.14	0.50	0.49	0.44	0.42	
95th Perc	2823.14	9000.00	1.00	1.00	1.00	1.00	
5th Perc	-327.51	0.00	0.00	0.00	0.00	0.00	
N	6,931	6,931	6,931	6,931	6,931	6,931	

	After 2003 x FIN 46	Size	ROA	R&D	Lev	Growth	Loss
Mean	0.14	8.05	0.01	0.27	0.28	0.05	0.13
Median	0.00	8.04	0.01	0.00	0.27	0.02	0.00
St. Dev.	0.35	2.09	0.03	10.03	0.19	0.30	0.33
95th Perc	1.00	11.74	0.04	0.16	0.62	0.32	1.00
5th Perc	0.00	4.64	-0.02	0.00	0.00	-0.23	0.00
N	6931	6931	6931	6931	6931	6931	6931

Panel B. Coverage, Common Precision and Idiosyncratic Precision - matched sample

	Common Precision	Idiosyncratic Precision
FIN 46	204.158** (102.527)	524.355** (237.340)
After 2001	-69.166 (60.773)	-35.65 (184.416)
After 2003	-94.953 (58.958)	-468.554*** (166.614)
After 2001 x FIN 46	-147.174 (137.656)	-657.505** (294.970)
After 2003 x FIN 46	-80.385 (76.486)	-169.199 (254.507)
Size	18.889 (23.329)	186.044** (87.147)
ROA	5065.487*** (1900.599)	7765.679*** (2328.581)
R&D	0.877 (0.573)	3.846*** (0.813)
Leverage	-55.249 (127.366)	81.405 (382.972)
Growth	12.428 (35.449)	97.003 (102.026)
Loss	-81.974 (68.036)	-522.950*** (130.322)
Fama French 48 Industry Dummies & Intercept	Included	Included
N	6,931	6,931
R2	0.1	0.12

Table 3: Earnings Response Coefficient Analysis

The dependent variable (return) in this pooled OLS regression is the size adjusted return of the stock based on one year daily returns starting three months after the start of the fiscal year. The sample period is 1990-2006 (November) and the units of observation are firm-years. **FIN 46** is a dummy variable that takes a value of 1 if the observation is for a FIN 46 firm. **Unexpected Earnings** is the analyst forecast error in the annual estimate scaled by price. **MB** is the ratio of market value of equity to book value (data 60) in the prior fiscal year end. **Beta** is the CAPM beta calculated over the prior sixty months. **Size** is the log of the market value of equity. Beta, Size and MB are all converted into dummy variables representing observations below and above the median in a given fiscal year. The Huber/White Robust standard errors are clustered by firm.

Panel A. Descriptive statistics of variable used in earnings response coefficient analysis

	Return	UE	FIN 46	MB (not ranked)	Beta (not ranked)	Size (not ranked)
Mean	0.075	-0.172	0.026	4.113	0.975	5.878
Median	-0.038	0.000	0.000	2.056	0.906	5.728
St. Dev.	0.821	19.213	0.159	89.797	0.765	1.775
95th Percentile	1.089	0.014	0.000	8.850	2.281	9.030
5th Percentile	-0.677	-0.043	0.000	0.721	-0.011	3.234
N	28,558	28,558	28,558	28,558	28,558	28,558

Panel B. Earnings response coefficient analysis

	Before 2002		After 2001		After 2003	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Intercept	0.130	<.0001	0.099	<.0001	0.042	<.0001
Unexpected Earnings [UE]	12.533	<.0001	29.988	<.0001	19.775	0.003
UE*MB	-2.105	0.465	-12.224	0.035	-5.089	0.404
UE*Beta	-3.166	0.281	-0.176	0.976	-4.616	0.447
UE*Size	3.996	0.126	-6.954	0.287	3.629	0.571
FIN 46	-0.043	0.199	-0.034	0.159	-0.036	0.196
FIN 46*UE	0.341	0.949	-19.415	0.018	-14.118	0.214
N	15,961		7,041		3,941	
R2	0.01		0.01		0.01	

Table 4 : Bank Loan Analysis

Panel A presents the descriptive statistics of variables used in the analysis. Panel B presents the Heckman selection model for full sample and OLS for matched sample in which the dependent variable (Spread) is the interest rate differential between borrowed rate and risk free rate. The sample period is 1990-2006 and the units of observation are firm-years. **FIN 46** is a dummy variable that takes a value of 1 if the observation is for a FIN 46 firm. **After 2001** is a dummy variable that takes a value of 1 if the observation belongs to after 2001. **After 2003** is a dummy variable that takes a value of 1 if the observation belongs to after 2003. **Beta** is the CAPM beta calculated over the prior sixty months. **Size** is the decile rank of the firm in the prior year. **MB** is the ratio of market value of equity to book value (data 60) in the prior fiscal year end. **Leverage** is the ratio of long term debt (data9) to total assets (data6) in the prior fiscal year. **Maturity** is the natural log of the loan maturity period (in months). **Performance Pricing** is a dummy variable which is equal to 1 if the loan contract includes performance pricing options. **Syndicate** is a dummy variable that equals 1 for the syndicate loans and 0 otherwise. **Number of Lenders** is the number of lending banks for each loan facility. **Deal Amount** is measured by the amount of loan facility given to a borrower. Standard errors clustered at firm level are reported in parenthesis . ***, ** and * shows statistical significance at 1,5 and 10% level respectively.

Panel A. Descriptive Statistics on Bank Loan Analysis Sample

	Spread	FIN 46	After 2001	After 2003	After 2001 x FIN 46	After 2003 x FIN 46	Beta
Mean	148.720	0.029	0.342	0.207	0.011	0.007	1.026
Median	112.500	0.000	0.000	0.000	0.000	0.000	0.932
St. Dev	135.359	0.167	0.474	0.405	0.104	0.081	0.732
p95	375.000	0.000	1.000	1.000	0.000	0.000	2.347
p5	16.000	0.000	0.000	0.000	0.000	0.000	0.071
N	10687	39308	39308	39308	39308	39308	39308

	Size	MB	Leverage	Maturity	Performance Pricing	Syndicate	Number of Lenders
Mean	7.323	2.637	0.204	3.531	0.808	0.274	7.948
Median	8.000	1.919	0.189	3.611	1.000	0.000	5.000
St. Dev	2.409	2.299	0.171	0.788	0.394	0.446	8.887
p95	10.000	7.393	0.515	4.477	1.000	1.000	24.000
p5	3.000	0.601	0.000	2.485	0.000	0.000	1.000
N	39308	39234	39308	11624	39308	39308	12604

Panel B. Heckman Selection Model and Matched Sample Results

	Full Sample		Matched Sample	
FIN 46	4.849	(3.917)	-1.040	(6.876)
After 2001	29.067***	(1.660)	27.113***	(9.222)
After 2003	-8.982***	(1.923)	-12.572	(10.732)
After 2001 x FIN 46	5.366	(6.844)	27.322	(16.518)
After 2003 x FIN 46	-6.549	(7.932)	0.089	(15.381)
Beta	-8.437***	(1.969)	19.456***	(7.261)
Size	-6.055***	(0.604)	-24.438***	(4.441)
MB	-2.132***	(0.576)	-3.085**	(1.286)
Leverage	337.230***	(7.951)	148.596***	(33.097)
Maturity	-7.082***	(0.959)	-19.982**	(9.106)
Performance Pricing	-2.999**	(1.334)	-18.761***	(6.714)
Syndicate	1.156	(2.122)	-23.010	(27.053)
Number of Lenders	-0.117	(0.094)	-0.465**	(0.233)
Deal Amount (x10 ⁹)	3.450***	(0.820)	7.370***	(2.440)
Loan Purpose Dummies	Included			
Loan Type Dummies	Included			
Intercept & Industry Dummies	Included			
Participation Equation				
Intercept	-1.282***	(0.027)		
Beta	-0.136***	(0.010)		
Size	0.062***	(0.003)		
MB	-0.003	(0.003)		
Leverage	1.606***	(0.041)		
Mills' ratio	177.11***			
Number of Observations	36,900			
Censored observation	26,626		880	
Uncensored observation	10,274		0.602	

Table 5: Credit Ratings Analysis

Panel A presents the descriptive statistics of variables used in the analysis. Panel B presents the OLS model for both full and matched samples in which the dependent variable is the **Credit rating**. Using the FISD credit rating data from all credit agencies, we converted all ratings into a scale between 1 (worst) - 23 (best) using the cardinal scales defined in Appendix C. The sample period is 1990-2006 and the units of observation are firm-years. **FIN 46** is a dummy variable that takes a value of 1 if the observation is for a FIN 46 firm. **After 2001** is a dummy variable that takes a value of 1 if the observation belongs to after 2001. **After 2003** is a dummy variable that takes a value of 1 if the observation belongs to after 2003. **Beta** is the CAPM beta calculated over the prior sixty months. **Size** is the decile rank of the firm in the prior year. **MB** is the ratio of market value of equity to book value (data 60) in the prior fiscal year end. **Leverage** is the ratio of long term debt (data9) to total assets (data6) in the prior fiscal year. Standard errors are reported in parenthesis and are clustered at firm level. ***, ** and * shows statistical significance at 1,5 and 10% level respectively.

Panel A. Descriptive statistics on credit ratings analysis

	Rating	FIN 46	After 2001	After 2003	After 2001 x 46R
Mean	14.15	0.069	0.350	0.145	0.021
Median	15.00	0.000	0.000	0.000	0.000
St. Dev	4.07	0.254	0.477	0.352	0.144
p95	20.00	1.000	1.000	1.000	0.000
p5	8.00	0.000	0.000	0.000	0.000
N	5,540	5,540	5,540	5,540	5,540

	After 2003 x 46R	Beta	Size	MB	Leverage
Mean	0.009	0.907	8.919	2.902	0.286
Median	0.000	0.856	10.000	2.097	0.278
St. Dev	0.093	0.609	1.649	2.465	0.146
p95	0.000	1.984	10.000	8.407	0.554
p5	0.000	0.081	5.000	0.739	0.064
N	5,540	5,540	5,540	5,540	5,540

Panel B. Credit ratings analysis

	Full Sample	Matched Sample
FIN 46	0.763** (0.301)	0.621** (0.314)
After 2001	-0.925*** (0.109)	-1.066*** (0.286)
After 2003	-0.282** (0.122)	-0.481 (0.384)
After 2001 x FIN 46	-0.317 (0.295)	-0.352 (0.400)
After 2003 x FIN 46	-0.607** (0.301)	-0.511 (0.466)
Beta	-1.262*** (0.145)	-1.897*** (0.262)
Size	0.997*** (0.056)	1.076*** (0.221)
Market to Book	0.174*** (0.038)	0.098 (0.067)
Leverage	-6.977*** (0.668)	-6.829*** (1.228)
Industry Dummies & Intercept	Included	Included
<hr/>		
N	5,540	997
R2	0.49	0.44