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Valuation of Firm-Bank Relationships: A Test of the Delegated Monitoring Hypothesis.

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VALUATION OF FIRM-BANK RELATIONSHIPS:

A TEST OF THE DELEGATED MONITORING HYPOTHESIS

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ABSTRACT

In this thesis, we test the hypothesis that banks provide monitoring services that benefit client firm shareholders. We argue that if the value of firm-bank relationships stems from monitoring services provided by banks, then share price responses associated with announcements of bank loans should be cross-sectionally related to variables that proxy the degree of monitoring to which firms are already subject. Our sample differs from previous studies of bank debt announcements in two key aspects: inclusion of NASDAQ firms, and inclusion of announcements carried by the newswire but not the Wall Street Journal. Consistent with suggestions by Fama (1985) and Diamond (1985) and theoretical models in the accounting literature, we find that firm size is a significant determinant of capital market reactions to bank debt announcements--average share price responses are statistically positive only for small firms. Moreover, share price responses are negatively related to firm size within the small firm sample. We also find that initiations of bank debt generate statistically positive average share price responses, a result strikingly different from previous anomalous findings of statistical significance only for renewals of bank debt.

Chapter 1: Introduction

Several recent empirical studies document statistically significant positive average prediction errors for firms announcing bank credit agreements.[1] Assuming semi-strong form market efficiency, these results suggest that new information is conveyed by the issuance of bank debt. Researchers attempt to empirically identify the nature of this information by examining cross-sectional variations in prediction errors. James (1987) finds no significant differences among mean prediction errors for announcements grouped by purpose, maturity, bond rating, or firm size. Lummer and McConnell (1989) find a significant difference in mean prediction errors between initiations and renewals of bank credit agreements, but no other systematic patterns. Wansley, Elayan, and Collins (1990) also find that loan initiation versus renewal is important, as well as the percentage of equity held by insiders and institutions, research and development expense as a percentage of total assets, and the relative size of agreement.

In juxtaposition, substantial empirical evidence exists that prediction errors around announcements of private or public bond issues are negative or statistically zero.[2] Studies attempting to explain cross-sectional patterns in prediction errors associated with

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[1]Mikkelson and Partch (1986), James (1987), Bailey and Mullineaux (1988), Lummer and McConnell (1990), Slovin, Sushka, and Hudson (1990), and Wansley, Elayan, and Collins (1991).

[2]See Mikkelson and Partch (1986), Eckbo (1986), and Smith (1986).

announcements of straight bond issues find no significant systematic patterns.

Both bank debt issues and bond issues are forms of external financing for corporations. The asymmetric information problems associated with external financing for corporations have been well developed in the literature. Myers (1977) and Myers and Majluf (1984) develop models in which maximization of shareholder wealth may cause firm managers to forego profitable investment opportunities that require issuing external securities. This underinvestment problem is considered an agency cost of external financing that can be reduced if perfect contracts can be written and monitored between firms and lenders. Perfect enforcement of contracts requires observation of agent behavior and elimination of information asymmetry. Miller and Rock (1984) develop a model in which external financing signals inside information to the capital market about expected future cash flows. In their model external financing above that anticipated by the market signals nonpositive information about a firm's cash flows.

Recent theoretical models of the banking firm focus on the role of banks as private information processors.[3] These "asset services" models argue that the nature of the intermediation process allows banks to perform private information processing more efficiently than other lenders. In this view, banks are well positioned to undertake private information processing activities that benefit both bank owners and borrowers. Banks' access to private information and their ability to

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[3]See for example Diamond (1984), Ramakrishnan and Thakor (1984), Fama (1985).

process this information efficiently helps to resolve problems created by the asymmetry of information in external securities issuance. Slovin, Sushka, and Hudson (1990) exploit this idea and argue that monitoring activities of banks benefit shareholders of borrowing firms issuing seasoned equity. They find that (typically negative) equity responses to announcements of seasoned equity offerings are attenuated by the presence of bank debt in firms' capital structures.

Berlin and Loeys (1988) show theoretically that bondholders with well diversified portfolios monitor less than a banker. If bondholders with limited wealth invested in a firm choose to monitor, they incur the full costs of monitoring but only a small part of the gains. Furthermore, individual monitoring by multiple bondholders is more costly and redundant than monitoring by a delegated monitor, possibly a bank.

Banks' access to private information and their ability to efficiently process this information allows banks to serve as efficient monitors of firm managers. Effective monitoring by banks reduces agency costs created by outsiders' inability to efficiently monitor firm manager behavior. Upon announcement of a firm-bank relationship, net agency cost savings are capitalized into firm value.

The primary objective of this study is to test the hypothesis that banks provide monitoring services beneficial to shareholders of borrowing firms. The basic argument is that if wealth changes associated with announcements of bank debt are derived from agency cost savings, then announcement effects should be related to the magnitude of potential agency cost savings and thus, to the level of monitoring to

which a borrowing firm is already subject. The level of current monitoring is measured by proxy variables (monitoring variables) selected from the agency cost and asymmetric information literatures. Evidence comes from an examination of cross-sectional variation in prediction errors associated with announcements of issuance of bank debt. If monitoring variables explain part of this cross-sectional variation (as independent variables in a regression), the monitoring hypothesis is supported. The evidence provides empirical support for theoretical models emphasizing the role commercial banks have in processing private information and providing monitoring services.

Cross-sectional patterns in prediction errors associated with announcements of public bond issues are also examined. Of interest is whether the cross-sectional behavior of prediction errors associated with bank debt announcements differs from that of straight bond announcements. This examination is important for this study because it is argued in the literature that bondholders will not find it beneficial to undertake monitoring activities, contrasting with arguments made in the banking literature.

Empirical results provide support for the delegated monitoring hypothesis and asset services models of the banking firm. The results suggest that firms likely to have greater agency problems benefit significantly from bank monitoring. Firms assumed to be better monitored do not benefit significantly from bank monitoring. Average two day prediction errors are positive and statistically significant for the full sample of uncontaminated bank debt announcements. Dichotimizing the sample by firm size reveals, however, that only small

firm shareholders experience wealth increases from bank monitoring. Large firm shareholders experience normal returns upon announcements of bank debt agreements. Moreover, prediction errors are negatively related to the natural log of firm size. If the regression sample is dichotimized into small and large firms, statistical significance of this coefficient obtains only for small firms. Prediction errors are unrelated to other monitoring variables employed in the analysis.

These results are consistent with arguments by Fama (1985) and Diamond (1985) that small firms are more likely to benefit from bank asset services because they may lack reputation and have greater asymmetric information problems. The results are also consistent with the differential information hypothesis which argues that since information collectors are less interested in small firms, small firm share prices are less precise than larger firms.

The sample of uncontaminated bond announcements has an insignificant average two day prediction error. This result is consistent with existing bond announcement studies. Furthermore, disaggregating the sample by firm size does not change the results appreciably. Bond announcements are cross-sectionally unrelated to variables that explain the cross-sectional behavior of bank debt announcements. Thus, consistent with theoretical arguments, borrowing via straight bonds in the public capital market does not generate monitoring related wealth increases for firm shareholders.

The thesis is organized as follows. Chapter 2 contains a review of important works in the literature that are relevant for this study. Theory and hypotheses are presented in Chapter 3. Data and methodology

are described in Chapter 4. Presented in Chapter 5 are event study results for bank debt announcements, followed in Chapter 6 by regression results. Chapter 7 contains a discussion of empirical results for bond announcements. A summary and conclusions are offered in Chapter 8.

Chapter 2: Literature Review

There are four bodies of literature that are most important for this study. The first comprises studies aimed at explaining the asymmetric information problems associated with corporate securities issuance. The second comprises studies that attempt to explain the existence, uniqueness, and nature of financial intermediaries. The third comprises studies of the monitoring activities of agents with access to private information about firms but who are not part of inside management. These agents as a group are called external monitors. The fourth is literature focusing on the differential information sets available for large and small firms. Sections 1, 2, 3, and 4 of this Chapter contain a review of important contributions in each of these bodies, respectively.

This study draws together these bodies of literature by arguing that bank debt is a different type of security issue than bond debt because different types (public or private) of information collected by the ultimate securityholders in each type of issue. Theoretical models explaining the effects of security issuance focus on the asymmetry of information in the securities issuance process and the ensuing problems. The focus is on security issues in public capital markets where asymmetric information problems are potentially significant.

Asset services models of the banking firm argue that banks function as private information collectors and processors. These models argue that bank financing avoids or attenuates the asymmetric

information problems of the type developed in the securities issuance literature. Asymmetric information problems are avoided because private information that cannot be revealed to public security markets can be revealed to banks, or more generally participants in private markets, who agree to confidentiality. Banks specialize in processing this type of information that, when combined with the short term nature of bank debt, allows them to serve as efficient monitors of firm management so that their actions signal favorable private information.

A. Securities Issuance Literature

A.1. Theoretical studies

A bank line of credit or loan is in essence a firm security issue. Recent work in the securities issuance literature focuses on problems associated with issuing corporate securities to outside investors who do not have access to the same information set as firm managers. This work is important because this thesis argues that differences between bank debt and bond debt stem primarily from differences in the types of information collected.

For bank debt, the securityholder, the bank, has access to private information about firms that other capital market participants typically do not. Outside investors may infer from the actions of banks whether unobservable information is favorable or unfavorable, making bank debt a unique type of security issue. The securities issuance literature concerning primarily equity and bond issues helps establish the foundation for the view that bank debt is a security that avoids problems created by other types of external securities.

Leland and Pyle (1977) consider asymmetric information problems associated with the initial issuance of public shares of a firm. An entrepreneur has an incentive to sell shares in his firm for as much as possible, even at a price above their value. Outside potential investors do not have access to the same information as the entrepreneur and thus, are less certain of the true value of the shares. Without a means of transferring the private information to outside investors or a credible signal that the unobserved information is favorable, a form of the familiar Akerloff lemons problem results. Leland and Pyle argue that the proportion of shares retained by an entrepreneur in an initial public offering is a credible signal of true firm quality and helps to mitigate asymmetric information problems.

Myers (1977) analyzes determinants of corporate borrowing by viewing part of firm value as the present value of its future investment options (i.e. assets not in place). He shows that if firms issue risky debt, then there can be states when it is shareholder-wealth maximizing for managers to forego positive net present value investment opportunities. *Ex ante* this reduces firm value. This underinvestment problem, he argues, is an agency cost of debt. The problem can be avoided if debt matures before the investment option expires or if perfect clauses can be written in debt contracts. All other solutions to under-investment problems involve agency costs. Solutions in which firms still use debt are likely to involve nontrivial monitoring or bonding costs which shareholders agree to bear when the increase in firm value more than offsets these costs.

Myers and Majluf (1984) extend the work of Myers into a framework predicting which types of securities firm managers prefer to issue and in which order. They assume that firm managers have information that investors do not and that managers act in the interest of passive existing shareholders.[4] Existing shareholders benefit if managers can sell overvalued securities to other investors, creating a situation in which investors infer from a manager's decision to issue securities that the securities are overvalued. Thus, with the exception of risk-free debt, any security issuance is met with a negative market reaction and the reaction is more negative the riskier the security. The decision not to issue securities is good news but may cause an underinvestment problem in that managers forego profitable investment opportunities that cannot be funded internally. If external financing is necessary, they show that firm managers should raise capital according to a "pecking order," using internal capital first, then risk-free debt, risky debt, quasi-equity, and finally equity.

Miller and Rock (1985) develop a model in which managers' decisions about dividend declarations signal information about firms' unobservable cash flows. Higher than anticipated dividends signal higher than expected cash flows and vice versa. Similarly, managers' decisions about external financing also signal information about unobservable cash flows. Higher than anticipated external financing signals lower than expected cash flows and vice versa.

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[4]Passive existing shareholders do not adjust their portfolios in response to managers' actions.

In summary, work in the securities issuance literature focuses on asymmetric information problems in the external securities process that may reduce firm value. Firm value may be reduced since the capital market may interpret securities issues as reflecting either an attempt to issue overvalued securities or lower than expected future cash flow.

A.2. Empirical studies of bond announcements

Mikkelson and Partch (1986) examine equity responses to announcements of security offerings and find significantly positive abnormal returns for announcements of bank loans and nonpositive returns for public and private debt issues. They also find that prediction errors surrounding security issuance announcements are cross-sectionally related to the type of security offered and the stated reason for the offering and unrelated to the new financing dollar amount, offering size, and quality rating of debt.

Eckbo (1986) examines equity responses to corporate debt offerings and finds that straight debt offerings generally induce nonpositive (but not significant) prediction errors while convertible debt offerings induce significantly negative prediction errors. He finds that offering size, bond rating, tax shields, or abnormal changes in firm earnings cannot explain patterns in prediction errors.

James (1987) finds that average equity responses to straight public debt offerings are nonpositive and insignificant, while average equity responses to private debt placements are negative at the .10 level.

The significance of the above three studies is the implication that external debt issues do not generate wealth increases for issuing firm shareholders which differs from empirical results for bank debt announcements discussed later showing that shareholders of firms that issue bank debt experience, on average, significant wealth increases. The implication of the different reactions is that bank debt provides shareholders of borrowing firms with an increase in wealth on average, while other types of debt produce no significantly positive wealth effects. This suggests that it is therefore reasonable to hypothesize that banks provide a special service benefitting client firm shareholders.

B. Existence, Nature, and Uniqueness of Financial Intermediaries

B.1. Theoretical studies

Given the classic perfect market assumptions of costless transactions and costless and equal access to information, there does not readily appear to be an economic need for commercial banks, or more generally, financial intermediaries. Relaxation of one or both of these assumptions allows satisfactory explanations of the existence of the banking firm. In regard to the assumption of equal and costless access to information, recent advances in the theory of the banking firm focus on the role of banks in collecting and processing private information about their client firms. Leland and Pyle (1977) argue that banks have a comparative advantage in information collection because there are economies of scale in information gathering. Bank shareholders benefit

from collection of private information through reduction of credit risk in banks' loan portfolios.

Campbell (1979) argues that *firm* managers are information specialists who have private information about available investment projects. Current firm shareholders do not receive full monopoly rents from projects if securities are sold publicly with full information disclosure because rents must be distributed across all security holders. Issuing a security to a party who agrees to keep private information confidential and not invest in any other securities of a firm allows monopoly rents to accrue to current shareholders. To fulfill this role, a party must specialize in processing private information. Also, monitoring to ensure the party does not invest in other securities must be efficient. Issuing a differentiated security (debt) with a higher priority claim partially resolves the problem, and limiting this party to hold only these differentiated securities reduces the need for monitoring by equityholders. The necessary constraints on a party closely resemble the constraints on financial institutions in the United States.

Leland and Pyle (1977) argue that financial intermediaries may eliminate or reduce informational asymmetries. Their work concerns how entrepreneurs can signal firm quality when they wish to sell shares via an initial public offering. The asymmetry of information between firm insiders and outsiders, and the incentive problems associated with selling the firm to less well informed investors are attenuated by the use of a credible signal. Leland and Pyle posit that a credible signal of firm quality is the amount of equity an entrepreneur retains in an

initial public offering. Retaining a relatively larger share of equity causes an entrepreneur's portfolio to be less well diversified. Entrepreneurs of low quality firms find it too costly to concentrate their portfolio holdings in their firms. Entrepreneurs of high quality firms have concentrated portfolio holdings in higher quality firms so signalling is less costly.

Of more importance here is Leland and Pyle's suggestion that financial intermediaries exist because they reduce asymmetric information problems. They argue that financial intermediaries are more efficient at information production because of economies of scale in information gathering. They note that interpretation of costly information gathered by an agent presents two problems: (1) uncertain credibility of the information, and (2) the public good aspect of information collected if any signal is emitted. They argue that financial intermediation solves both problems: intermediaries have an incentive to ensure that high quality information is collected for reduction of portfolio risk, and higher returns earned on their asset portfolios cover information costs.

Campbell and Kracaw (1980) develop a more rigorous model of financial intermediation and information production. Their model differs significantly from the financial intermediation aspects of Leland and Pyle. First, they show that it is necessary to certify information quality by investing in firms about which intermediaries generate information. By risking their own equity, financial intermediaries reduce moral hazard problems of inadequate monitoring.

Another major difference between Campbell and Kracaw and Leland and Pyle is the assumption of the privity of information collected. Leland and Pyle assume that no investor can be privy to another investor's information. In contrast, Campbell and Kracaw assume that all information is revealed during the tatonnement process of market clearing. For outside shareholders to benefit from bank monitoring, they must be able to observe that the bank has collected and processed private firm information, but not the private information itself.

Diamond (1984) develops a model of financial intermediation in which intermediaries act as delegated monitors. This avoids problems of duplicate information gathering and free rider problems associated with information collection. Capital provision/acquisition through an intermediary is more efficient for both lenders (depositors) and borrowers since information gathering costs are minimized. Diamond's model considers the *ex post* information asymmetry where *ex post* refers to after the financing is obtained. Diamond does show, however, that Leland and Pyle's model which considers *ex ante* information asymmetries yields similar results when analyzed in the context of his model.

All three of the above works share the common theme that financial intermediaries exist because they specialize in private information collection and processing. While banks play a monitoring role in each of these models, the role is limited to monitoring on behalf of bank depositors and/or shareholders. The role banks play in serving as monitors benefitting other outside claimholders of the client firm is not explicitly considered. This work is important background for this study because if banks are to serve as efficient monitors of firms, then

they must collect and process private information about their client firms. Since financial intermediary equity is at risk, and since a return is earned on costly informacion collected, outsiders who have an interest in a borrowing firm can free-ride on monitoring activities by financial intermediaries and be assured that signals they receive are credible.

Two more recent theoretical works emphasizing the information processing role of commercial banks are also interesting. Pennacchi (1988) develops a model to analyze loan sales by financial institutions and the resulting optimal contracts. He assumes that banks can engage in information acquisition and monitoring to increase their portfolio returns. He notes that assets fall into two categories--those that require monitoring and those that do not. Banks serve merely as underwriters of loans for firms requiring no monitoring. This seemingly unimportant point has significant implications for the interpretation of changes in shareholder wealth if these changes reflect agency cost savings. Well monitored firms fall into the underwriting group and are not expected to experience agency cost savings from new bank debt or the resulting significant positive returns.

Berlin and Loeys (1988) model the choice and optimal contracts that a firm makes between bond financing with strict covenants and no monitoring, and bank financing with monitoring but more lenient or possibly no covenants. In their model, a bank's only role is that of "monitoring specialist." They show theoretically that well-diversified bondholders will monitor too little so that a bank that monitors the

firm may be necessary. They then discuss optimal contracts and compensation schemes to ensure reliable bank monitoring.

B.2. Empirical studies

The uniqueness of commercial banks is not eminently important for this study. Results from uniqueness studies, however, suggest that relationships with commercial banks are valued in the capital market. The results are important background whether commercial banks are unique or not. This section traces the evolution of recent work in this area.

Fama (1980) originally attributed the uniqueness of commercial banks to government regulations. Moreover, he argued that commercial bank regulation was unnecessary as long as the financial services industry remained competitive. Five years later, Fama (1985) presented evidence that banks must provide a unique service to borrowers because the incidence of the reserve "tax" on certificates of deposit (CDs) falls upon borrowers. Comparison of rates on CDs with rates on similar alternative investments indicates that lenders (depositors) do not bear the tax. Moreover, the tax would not be borne by bank shareholders since they have available alternative investments not subject to the tax.

Fama (1985) also stresses the role of banks in signalling information. He argues that since banks have relatively low priority claims, granting a bank loan signals higher priority (nonequity) claimholders that they need not undertake redundant and costly monitoring. Though Fama does not mention (lower priority)

equityholders, they may also benefit from bank monitoring.[5] Slovin, Sushka, and Hudson (1988 and 1990) argue and find evidence that borrowing firm shareholders benefit from monitoring activities of banks through a reduction in agency costs.

James (1987) provides an extension of Fama's analysis as well as further evidence on the uniqueness of bank loans.[6] By looking at changes in reserve requirements and subsequent changes in CD rates, James supports Fama's conclusion that borrowers bear the reserve tax. Additionally, James uses event study methodology to analyze client firm share responses to announcements of bank loans. He suggests that since bank debt is a form of inside debt, using it avoids underinvestment problems of the type developed in Myers and Majluf (1984). James's results indicate a significantly positive average abnormal return for firms announcing bank loans.

To demonstrate that bank debt is unique, he also examines equity responses to announcements of public and private debt issues. He finds responses to announcements of public debt issues are not significantly different from zero while responses to private debt issues are significantly negative. James could not attribute cross-sectional variation in announcement effects to any one of the following: purpose

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[5]Reports in recent bankruptcy literature indicate that priority rules are frequently violated in Chapter 11 bankruptcy with unsecured creditors and equity holders sharing in residual firm value. Thus, the actual priority of claimholders of firms in financial distress may be higher or lower than indicated by absolute priority rules.

[6]See Bailey and Mullineaux (1990) later in this discussion for evidence contrary to James' suggestion that positive average prediction errors indicate uniqueness of bank debt.

of debt issue, maturity of issue, size of issue, risk of borrower, and size of the borrower.

A striking finding of James' study is that announcements of both private and straight debt issues to refinance bank loans induce statistically significant negative average prediction errors. Additionally, he finds no significant difference between prediction errors for bank loans that refinance debt and bank loans for new capital expenditures.

In a similar study, although with a different motivation, Slovin, Sushka, and Hudson (1988) find that firms announcing commercial paper issues backed by irrevocable bank letters of credit experience significant positive average abnormal returns; announcements of commercial paper issues not backed by banks generate normal returns. Differences in bond ratings do not explain their findings.

Lummer and McConnell (1989) also examine equity responses to announcements of bank loan agreements. They too find a positive average abnormal return for their entire sample. Their contribution is to dichotimize the sample into new loan agreements and renewed or revised loan agreements. Average abnormal returns for the renewal group are significantly positive; average abnormal returns for the new group are not statistically significant. Further partitioning of the two groups shows that firms that had prior negative public announcements concerning bank debt experience the largest abnormal returns. Lummer and McConnell agree with Fama (1985) in their interpretation suggesting that the loan renewal and review process provides valuable signals to the capital market.

The main contribution of Lummer and McConnell, that of dichotimizing the sample into new agreements and renewals, yields suspect results however. It is reasonable to expect the Wall Street Journal to announce more loan renewals previously thought to be doubtful renewals, than to announce renewals the capital market expected to be renewed. LM argue that firms and banks may be hesitant about reporting negative news about bank financings.[7] This may create a selection bias, which LM note, that makes their results less useful.
The seriousness of this problem is reflected in their apparently paradoxical results. If only renewals or revisions to bank loans or lines generate significant information about borrowing firms, why do rational investors, who expect future renewals and revisions, not capitalize this value upon announcement of new bank loans?

Bailey and Mullineaux (1989) are successful in demonstrating that James's results do not provide unambiguous evidence about the uniqueness of commercial banks. They examine equity responses to announcements by firms securing bank-type debt from *nonbank* financial intermediaries. Results indicate that the capital market responds favorably to announcements of this type of capital acquisition too; average abnormal returns are positive and significant. They conclude that the inside nature of bank-type debt is important, not *bank* debt per se. They also dichotimize the sample into new and renewed agreements with a criterion

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[7]The plausibility of this must be considered in light of SEC charges against Charter Company firm managers in 1986 regarding the nondisclosure to shareholders of important information about bank debt negotiations.

similar to Lummer and McConnell and find no significant difference in average prediction errors between the groups.

Even though *average* abnormal returns surrounding bank loan announcements in each of these studies are positive, there are firms within each sample that have either insignificant or negative abnormal returns. In fact, proportion tests in each of the studies show that a significant portion of the abnormal returns are nonpositive. With the exception of Lummer and McConnell's examination of unfavorable revision announcements, no studies attempt an explanation of this. As noted, no variables have been found to consistently explain cross-sectional variation in prediction errors for announcements of bank debt.

C. External Monitoring

There are five major groups of external agents researchers have identified as potentially efficient monitors of firms. Auditors, investment bankers, large outside blockholders, security analysts, and banks have all been hypothesized to fulfill monitoring roles.

Easterbrook (1984) and Rozeff (1982), in attempting to explain the payment of dividends, suggest that paying dividends forces firms to enter capital markets periodically subjecting managers to review and monitoring, thereby reducing agency costs. Easterbrook suggests that investment bankers and other financial intermediaries may be the most efficient and credible monitors since they risk equity and reputational capital when certifying an issue. Easterbrook also notes that continual refinancing of debt or any other undertaking that forces firms to return to capital markets could serve the same purpose.

An additional interesting insight by Easterbrook helps provide rationale for the empirics of this study. He argues that since monitoring is costly, "...we would expect to see substitution among agency cost control devices" (1984, p.657). The empirical tests conducted in this study use this insight. By assuming substitutability among agency-cost control devices and diminishing returns to monitoring, we argue that the value of any one control device depends directly upon the amount, extent, and costs of other control devices already in place.

We next discuss important representative works in the external monitoring literature.

C.1. Auditors

Titman and Trueman (1986) develop a theoretical model wherein investors infer the value of a new issue by observing the quality of auditor chosen by an entrepreneur. Entrepreneurs of high quality firms choose high quality auditors, who presumably are better at uncovering negative information. Since auditors detect and reveal negative information about a going-public firm, entrepreneurs with negative information find it too expensive to retain a high quality auditor, i.e. to mimic an entrepreneur with positive information. Titman and Trueman argue that their model might also be applicable to the choice of investment banker or any other outsider who generates information about firms.

C.2. Investment bankers

Beatty and Ritter (1986) develop and support empirically a model in which investment bankers risk reputational capital when certifying

the accuracy of an initial public offering price. Accurate is defined as consistent with their developed underpricing equilibrium. Since entrepreneurs have incentive to choose offer prices above true market value, they can hire investment bankers to certify true value. An investment banker who, on average, prices out of the underpricing equilibrium loses business and thus, the return on its reputational capital.

C.3. Blockholders

Shleifer and Vishny (1986) develop a model in which a large shareholder monitors firm management and initiates a takeover if firm value can be increased. Monitoring costs incurred by the large shareholder are covered by the return earned on his shares. Brickley, Lease, and Smith (1988) find empirical evidence that large shareholders vote more actively on issues that affect shareholder wealth. Agrawal and Mandelker (1990) find a positive relationship between share price responses to anti-takeover amendments and institutional ownership.

C.4. Security analysts

In their seminal paper on agency theory, Jensen and Meckling (1976) suggest that security analysts' social value is generated from their monitoring activities which reduce agency costs. Moyer, Chatfield, and Sisneros (1989) demonstrate empirically that the demand for security analysts (measured by the number of earnings forecasts generated for a firm) is significantly related to a number of variables proxying the need for monitoring.

C.5. Banks

Slovin, Sushka, and Hudson (1990) examine the effect of external monitoring on prediction errors associated with announcements of seasoned common stock issues. They find that the presence of bank debt and the use of prestigious investment banking firms have positive effects on the (negative) prediction errors associated with seasoned common stock issues.

D. Firm size

The hypothesized importance of firm size for bank debt announcements stems from arguments developed in the finance and accounting literatures regarding differential amounts of information collected for small versus large firms. Several important works from these literatures are discussed below.

Diamond (1985) and Fama (1985) in the finance literature emphasize the problems small firms face in external security issuance because of the lack of information available about small firms. The lack of information makes contracting costs for small firms relatively more expensive in public capital markets. Diamond argues that reputation, which small firms may lack, is important in public debt markets. Since banks are given access to and efficiently process private information, small firms find it beneficial to choose bank financing over public capital markets. Information collection by banks reduces information problems for small firms, which in turn, mitigates adverse selection and moral hazard problems associated with external financing. For large

firms with less severe information asymmetries or substantial reputation, problems are less serious.

Thus, small firms benefit most from bank monitoring services. Fama (1985) argues that the low priority of bank debt, combined with its relatively short maturity and inside nature position banks to credibly signal creditworthiness to other small firm claimholders. This avoids costly duplication of information gathering, thereby benefitting small firm claimholders.

Arbel and Strebel (1982) find a neglected firm effect separate from the well documented small firm effect. They detect the neglected firm effect by analyzing the number of security analysts following firms and note that security analysts spend more time collecting information about large firms. Also in the finance literature, Bajaj and Vijh (1990) find stronger price reactions and yield effects for dividend changes of low price stocks and small capitalization firms.

In the accounting literature, Atiase (1980) develops a model of differential information for small versus large firms. He argues that information collectors are less interested in small firms. Lower total equity values of small firms restrict potential rewards to information collection because positions taken by informed traders are necessarily smaller for smaller firms. Lower total equity values and fewer traders increase the likelihood of detection of informed trading, also reducing potential rewards to information collected. This results in lower precision of small firm share prices and thus, greater price adjustments when information is revealed. Atiase (1985), Freeman (1987), and

Collins, Kothari, and Rayburn (1987) find supporting evidence when examining reactions to earnings forecasts and announcements.

The firm size literature collectively predicts that less information is generated about small firms resulting in greater information asymmetries. Greater information asymmetries lead to greater moral hazard and adverse selection problems, both of which may be attenuated by efficient monitoring. Asset services models argue that banks are well positioned to provide monitoring services for small firms.

Chapter 3: Hypotheses

A. Theory and Background

Two major agency costs affecting shareholder wealth have been identified in the literature. One is identified by Jensen and Meckling (1976) who develop a model of agency costs that includes monitoring and bonding costs and residual losses associated with agency problems. A second is identified by Myers (1977) who examines the determinants of corporate borrowing. In Myer's model issuing risky debt creates the potential for suboptimal future investment strategies involving managers choosing to forego valuable investment opportunities (more detail in Literature Review). He argues that this suboptimal investment strategy is an agency cost of debt borne by firm shareholders. In principle, both agency costs can be reduced by effective monitoring. The relationship between agency cost savings and the hypotheses tests is developed below.

The underlying logic of the tests of the overall hypothesis and the series of individual hypotheses can be developed most straightforwardly in Jensen and Meckling's model since it incorporates monitoring. This logic is developed next followed by arguments for the same logic under the Myers model.

A.1. Jensen and Meckling

Jensen and Meckling consider a firm owned by insiders and outsiders. They assume that insiders have opportunity and incentive to

consume nonpecuniary items. With a positive proportion of outside ownership, insiders pay less than the full costs of any nonpecuniary items they consume. Thus, their incentive to consume nonpecuniary items is an increasing function of outside ownership. Costs of nonpecuniary consumption by insiders to the firm, net of any benefits generated, must be deducted when determining firm value. Moreover, if insiders are monitored or undertake bonding activities, monitoring and bonding costs must also be deducted. Optimally, monitors will be employed up to the point where marginal costs of monitoring equal marginal benefits of agency cost reductions.

They also identify other sources of agency costs for firms with separate ownership and control. Aside from nonpecuniary consumption, managers may not put forth effort consistent with maximizing shareholder wealth. The loss of value arising from this lack of or misguided effort is an agency cost. They also show that managers have opportunity and incentive to expropriate wealth from claimholders with fixed claims (bondholders). Since bondholders anticipate this, they pay less for bonds to reflect expected future expropriations and associated costs of monitoring. This also represents an agency cost borne by firm owners.

Assuming that outsiders may undertake a costly monitoring activity, firm value is:

$$V = V' - F(M,a) - M \qquad (1)$$

where:

V = firm value,

V' - firm value if insiders consume no non-pecuniary items,

F(M,a) - the net cost to the firm of providing nonpecuniary items to firm insiders

M - monitoring costs,

a - proportion of the firm owned by insiders.

We can generalize F(M,a) to include all sources of agency costs for the firm and V' to be firm value with no agency problems. Jensen and Meckling assume the following about F(M,a):

$$\partial F(M,a)/\partial M < 0 \qquad (2)$$

$$\partial^2 F(M,a)/\partial M^2 > 0 \qquad (3)$$

In words, they assume that monitoring decreases agency costs at a decreasing rate. They note that rational investors force insiders to bear the entire burden of monitoring and agency costs. Therefore, insiders have incentive to retain the services of monitors if doing so increases insiders' utility through a reduction in their burden. Insiders have this incentive when they do not prefer nonpecuniary consumption and/or their behavior is consistent with value maximization and wish to signal this fact to the asymmetrically informed capital market.

Value maximizing insiders will employ monitors if they generate marginal benefits greater or equal to their marginal costs; that is, monitors will be employed if $\partial V/\partial M$ is nonnegative. This can be seen by

maximizing equation (1) with respect to M yielding the first order condition:

$$\partial V/\partial M = -\partial F/\partial M - 1 = 0 \qquad (4)$$

or

$$-\partial F/\partial M = 1 \qquad (5)$$

The second order condition for a maximum is fulfilled by the assumption of $\partial^2 F/\partial M^2 > 0$. Additional monitors are employed up to the point where the marginal cost of monitoring equals the incremental dollar increase in firm value. Thus, we know that costly monitors will not be employed if doing so decreases firm value.

Now consider the value of a firm at two different levels of monitoring, M' and M", where M' < M", and with the assumption that $\partial V/\partial M'$ and $\partial V/\partial M"$ are nonnegative. Given the assumptions of $\partial F(M,a)/\partial M$ and $\partial^2 F(M,a)/\partial M^2$, if we examine increases in firm value resulting from increases in monitoring, we find that increases in value are greater the lesser is the current level of monitoring. Denote the value of the firm with M' level of monitoring V' and the value of the firm with M" level of monitoring V". Then, mathematically we have that $\partial V'/\partial M > \partial V"/\partial M$.

The partial derivatives provide us with an intuitively appealing result. Given the above model and assumptions, if changes in shareholder wealth upon announcement of bank loans result from decreased future agency costs, then wealth effects should be negatively related to the level of current monitoring. Ceteris paribus, shareholders of firms that are already well monitored (M is relatively high) should experience

smaller wealth changes because the increased monitoring is likely to yield smaller decreases in future agency costs.[1] Ceteris paribus, shareholders of firms that are poorly monitored (M is relatively low) should have larger wealth changes since the increased monitoring is likely to result in larger decreases in future agency costs.

For purposes of hypothesis testing, it is also important to note that the above relationship holds for the *return* to shareholders as well. This is true since:

$$\frac{\partial V'/\partial M}{V'} > \frac{\partial V''/\partial M}{V''} \qquad (6)$$

holds for all $\partial V/\partial M > 0$.

A.2. Myers

The existence of risky debt creates the potential for suboptimal future investment strategies in Myer's model. *Ex ante* this reduces firm value and shareholder wealth. Monitoring may ensure that an optimal investment policy is followed. Resulting monitoring costs reduce shareholder wealth but are offset by increased firm value arising from the change to an optimal investment strategy. Although Myers does not incorporate an agency cost function like Jensen and Meckling, we might also assume that the function in his model would be similar, i.e. $\partial F(M,a)/\partial M < 0$, $\partial^2 F(M,a)/\partial M^2 > 0$. This results in predictions identical to Jensen and Meckling's model.

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[1]Here, I implicitly assume similar F(a,i) across firms.

Following Easterbrook (1984), we assume that there is substitutability among different agency cost control (or monitoring) devices. Ceteris paribus, firms with high levels of control devices are assumed to be well monitored resulting in smaller increases in value upon addition of a (possibly new) monitor. Variables are chosen from several areas of literature; each area is noted with the discussion of the individual hypothesis. The abnormal return (prediction error) earned by shareholders upon announcement of the granting of a bank loan agreement should be negatively/positively related to a proxy variable that measures the current level of monitoring.

B. Individual Hypotheses

Evidence for or against the main hypothesis is provided by individual hypotheses tested using statistical procedures. Additionally, rejection of the hypothesis of identical cross-sectional behavior of prediction errors for bond announcements and bank debt announcements provides support for the main hypothesis. A number of variables are used as proxies for firms' current levels of monitoring. Individual hypotheses are summarized below followed by discussions of each.

B.1. Summary of Hypotheses

Prediction errors associated with announcements of bank debt are hypothesized to be:

1. Negatively related to firm size.
2. Negatively related to percentage of shares owned by insiders.

3. Negatively related to percentage of shares owned by institutional holders.

4. Negatively related to number of institutional investors.

5. Positively/Negatively related to the proportion of debt in the capital structure.

6. Positively/Negatively related to the proportion of bank debt currently in capital structure.

7. Negatively related to a dummy variable equal to one for firms with Big-Eight auditors and zero otherwise.

8. Negatively related to a dummy variable equal to one for firms that recently paid a dividend.

9. Cross-sectional behavior is expected to differ across bank debt and bond samples.

B.2. Discussion

1. Firm size

Consistent with the firm size literature we expect smaller firms to benefit more from bank debt than larger firms. Fama (1985) argues that small firms find a cost advantage in using inside (bank) debt because of lower contracting costs. Diamond (1985) argues that reputation is important in debt markets. Small firms may lack reputation which, combined with their greater asymmetric information problems, increases the possibility of moral hazard and adverse selection problems.

Similar to Fama, Atiase (1980) argues that little information is available about small firms because rewards for information collection

about these firms are limited for two reasons. First, total values are small suggesting a given size (percentage) price correction generates smaller profits. Second, low total values and few capital market participants increase the likelihood of detection of informed trading. Thus, small firm share prices are less precise and adjust by greater amounts upon announcement of economically significant news.

These arguments suggest that small firms benefit more from additional monitors than larger firms with greater amounts of low cost information available. Thus, we hypothesize a negative relationship between prediction errors and firm size.

2. Insider holdings

The proportion of the firm owned by insiders is considered by Jensen and Meckling (1976). The higher this proportion, the greater the cost borne by insiders of any nonpecuniary consumption. Additionally, as insider ownership increases, insiders have greater incentive to maximize firm value consistent with shareholders' goals. These two factors lead to reductions in the need for, and value of monitoring. This argument predicts a negative relationship between insider holdings and prediction errors.

Stulz (1988) argues that insider holdings may increase to a level that weakens discipline by the corporate control market resulting in more severe incentive problems. To adjust for this possible nonlinearity and the relative wide range of values for insider holdings, we use the natural log of insider holdings in regressions. Therefore,

the expected relationship between the prediction error and the log of the percentage of insider holdings is negative.

3,4. Outside blockholders

A related variable and hypothesis is concerned with the proportion of firms owned by large outside blockholders. Shleifer and Vishny (1986) develop a model in which a large shareholder monitors firm managers and initiates a takeover if firm value can be increased. The large shareholder's monitoring costs are covered by the return on his shares. Empirical evidence shows that large blockholders are more likely to vote and resist actions that may harm shareholders.[2] Monitoring activities of outside blockholders who have claims equal in priority to other outside shareholders benefit other outside shareholders.[3] Thus, a negative relationship is expected between prediction errors and percentage of firm owned by institutional holders. Additionally, a negative relationship is expected between prediction errors and the number of institutional holders.

5,6. Leverage

There are at least two alternative hypotheses about the relationship between existing leverage and announcement effects. The first hypothesis is a negative relationship resulting from the argument that highly levered firms are already well monitored by bond holders and

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[2]Brickley, Lease, and Smith (1988) and Agrawal and Mandelker (1990).

[3]Recent bankruptcy literature finds that priority rules are often violated in bankruptcy increasing the likelihood that monitoring by higher priority claimholders benefits lower priority claimholders.

do not benefit as much from marginal monitoring. There are two reasons debt may reduce the need for monitoring. First, bonds typically contain protective and restrictive covenants that limit the activities of insiders.[4] Second, Jensen (1986) argues that a high proportion of debt in capital structure reduces free cash flow since some cash flow must be used for debt service. This results in less free cash flow for use at managers' discretion. Both arguments predict that a higher percentage of debt in firms' capital structures lessens the discretion of insiders, and subsequently reduces the value of additional monitoring. This leads to an expected negative relationship between prediction errors and the proportion of debt in capital structure.

The second hypothesis, a positive relationship between leverage and announcement effects, derives from the argument that firms with higher leverage may have lower debt service capacity and thus will be monitored more intensely by marginal lenders. Similarly, firms with lower leverage may have higher debt service capacity and thus require less monitoring by marginal lenders. Ceteris paribus, the predicted different levels of monitoring could generate different levels of prediction errors.

The same two alternative hypotheses for leverage apply to the relative amounts of existing bank debt. There is empirical evidence that suggests banks monitor and reduce informational asymmetries associated with certain external financing events.[5] Firms with relatively larger amounts of bank debt are assumed to be better

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[4]See Smith and Warner (1979).

[5]Slovin, Sushka, and Hudson (1988) and (1990).

monitored so that addition of more bank debt results in smaller share price responses.

7. Auditors

Watts and Zimmerman (1978) and Titman and Trueman (1986) suggest that auditors serve as monitors for firms. Empirical evidence by DeAngelo (1981) and Dopuch and Simunic (1982) lends support to this suggestion. Specifically, differences have been found between reactions of firms employing Big-Eight accounting firms and firms employing non-Big-Eight accounting firms. The basic hypothesis is that Big-Eight accounting firms possess higher reputational capital implying that they are better monitors than are non-Big-Eight firms. Thus, prediction errors are expected to be smaller for firms with Big-Eight auditors.

8. Dividends

Rozeff (1982) and Easterbrook (1984) argue that dividends provide a proxy for how well a firm is currently monitored. Their basic argument is that firm managers that choose to pay dividends and simultaneously (subsequently) raise external capital might do so as a means of reducing agency costs. Opting to pay out cash flow and raise capital externally subjects firm insiders to more frequent review and monitoring by financial market participants. Thus, firms that paid recent dividends are expected to have smaller prediction errors than firms that did not.

9. Differences between share price responses of bonds and bank debt

Differences in capital market reactions to bond and bank debt announcements are hypothesized based upon differing information sets available and differing degrees of monitoring. The information sets and degree of monitoring associated with bank debt are discussed in Chapter 2. Briefly reviewing, recent models of the banking firm focus on an asset services view wherein banks specialize in private information collection and processing and act as delegated monitors of firms. Bank lending dominates public financing for firms with asymmetric information problems.

In contrast, theoretical arguments generally predict that bondholders will not find it cost efficient to monitor firms.[6] In practice, a trustee, typically a large commercial bank, is appointed who has fiduciary responsibilities to bondholders to monitor firms in exchange for a relatively small fee. Unlike commercial banks who lend money to (buy securities from) firms, trustees do not risk equity directly in the course of their duties. Like lending banks, however, they do risk reputational capital. Trustees who do not satisfactorily perform their duties not only risk legal actions, but also damage to reputational capital. Thus, bondholders employ monitors similar, in principle, to monitors employed with bank borrowing.

A major difference between the type of monitoring arises, however, when the different types of information collected by trustees and banks are considered. Trustees are charged with ensuring that bond covenants are met and initiating certain actions if they are not. Most bond

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[6]See for example, Berlin and Loeys (1988).

covenants are "boiler-plate," generally tightly written rules leaving little room for Trustee discretion. Furthermore, the information necessary to ensure compliance with bond covenants is generally non-private information.[7] For example, typical covenants include making payments when scheduled, limiting dividend payments, limiting merger and acquisition activity, and specifying default and cross-default provisions. Additionally, trustees may rely on compliance letters that firm managers are required to supply periodically.

In contrast, bank credit agreements typically contain a number of boiler-plate covenants as well as more loosely written rules giving bank monitors relatively more discretion. For example, it is quite common for credit agreements to have a "material adverse change" clause. Such a clause gives bank monitors broad rights upon an event they deem as materially adverse. Moreover, bank monitors typically require and are given access to private firm information that trustees do not require. The combination of this information with provisions for forcing change positions banks to serve as effective monitors of firm management.

Thus, cross-sectional behavior of prediction errors associated with bond and bank announcements are hypothesized to differ. Specifically, bank announcement prediction errors are hypothesized to vary systematically with monitoring variables. Bond announcements, in contrast, are hypothesized to be unrelated to monitoring variables.

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[7]Smith and Warner (1979) and Berlin and Loeys (1988) emphasize this.

C. A Competing Hypothesis

A competing hypothesis about differences between bank debt and bond debt is based on differing maturities between the two. Flannery (1986) argues that managers of firms with positive inside information choose to issue shorter term debt since the risk premium on shorter term debt is smaller. Later when the positive information is revealed, the debt is refinanced at a lower risk premium than possible before. Thus, issuance of short term debt may be interpreted by the market as a positive signal about unobservable information causing a positive revaluation. Conversely, issuance of longer term debt may be interpreted as a negative or neutral signal about the issuing firm. His argument does not involve differential amounts of monitoring in the short and long term debt markets.

Since bank debt is typically shorter in maturity than public or private debt, Flannery's "maturity hypothesis" has the potential to explain differing announcement effects between bank and nonbank debt. Therefore, maturity is included as an independent variable. James (1987) tests this hypothesis and finds no evidence to support it.

Chapter 4: Data and Methodology

This Chapter describes the data and methodology of this study. First we briefly summarize the steps in this study. Details of the data collection process are discussed in Part 1 followed by a discussion of the methodology in Part 2.

First, we collect a sample of firms that announce bank debt and a sample of firms that announce straight public bond issues. Both NYSE/AMEX and NASDAQ firms are included in the sample. Observations with inadequate CRSP return data or with information unrelated to the bank financing or bond issue are deleted from the final sample. We then collect firm specific "monitoring variables" for each remaining firm. Using event time methodology, we calculate market model prediction errors or abnormal returns and corresponding significance tests around each announcement.

To test hypotheses, we first disaggregate samples according to monitoring variable values. Group means tests are performed to test null hypotheses of equal group means. We then run weighted least squares regressions on each sample (bank and bond debt) independently. Prediction errors are dependent variables and monitoring and control variables are independent variables.

A. Sample

A.1. Bank Debt Announcements

The sample of firms announcing bank debt issues is constructed as follows. We search the Dow Jones News Retrieval database from January 1, 1980 to December 31, 1986 for entries including at least one of the following terms: credit agreement, line of credit, credit line, credit facility, and loan agreement. This database includes the full text of selected articles from the Wall Street Journal (WSJ) and the "Broadtape," or newswire, as well as other business publications. Entries not carried by the WSJ and/or not carried only on the newswire are filtered out using DJNR search procedures. These might include articles from Businessweek, Fortune, etc.

For 1984, 1985, and 1986, every event remaining after this filter is collected and remains in the overall sample. Details of announcements carried only on the newswire are taken from the Dow Jones News Retrieval database text. Details of WSJ announcements are taken from the actual WSJ articles. Even though the majority of these observations do not remain for the final clean sample, analyzing the character of these announcements yields insight into the processes by which information about bank debt is disseminated. Using the 1984-1986 sample for this analysis allows equal chance of representation of every type of bank debt announcement.

A striking finding from this breakdown is the number of announcements carried on the newswire only, i.e. never published in the WSJ. The sample of these "wire only" announcements represents 29.6% of the total sample for 1984-1986. This is an important finding because

prior studies of bank debt announcements have samples generated from searches of the Wall Street Journal Index. By omitting the newswire part of the sample, existing studies may be subject to selection bias created by WSJ editors. This proposition is investigated in Chapter 5.

For 1980-1983, DJNS search procedures are used to filter out observations that contain contaminating information indicated by the presence of at least one of the following terms: net earnings or losses, mergers or acquisitions, common stock, debentures, and downgrades. Also omitted are entries carried only on the newswire. The reason for the second omission is cost; information about these announcements must be downloaded from the DJNS database.

For inclusion, remaining observations must be cited in the Wall Street Journal Index and have an unambiguous announcement date. After these filters, 957 announcements remain for 1980-1983. Even though these announcements are prescreened for contaminating information, some contaminated announcements remain after these filters. These announcements are reclassified accordingly after reading the WSJ article.

Thus, the full sample for 1980-1986 contains 2763 observations, 2228 from the WSJ and 535 from the newswire. CRSP NYSE/AMEX and NASDAQ files are searched to identify firms with available return data. The names structure of the CRSP tapes is searched to allow for name changes. The sample for which prediction errors are available totals 1984 observations.

A.2. Bond Issue Announcements

The sample of firms announcing straight public bond issues is constructed as follows. The Registered Offering Statistics (ROS) tape is used to generate a list of companies filing straight public bond issues between 1977 and 1983. Filings identified on the ROS tape as shelf filings and offerings are omitted from the sample because they present problems beyond the scope of this study. Since the number of shelf offerings increased dramatically after 1982 when they were instituted, we search backwards to 1977 for observations. Additionally, joint filings of straight bonds and convertible bonds, common stock, warrants, or preferred stock are omitted.

Since the ROS tape is known to contain erroneous data, the following safeguards are followed to ensure data integrity. The Wall Street Journal Index is searched for announcements by these firms to verify announcement dates. The announcement date is assumed to be the WSJ article date, not the filing date indicated on the ROS tape. If the WSJ announcement occurs more than 2 days after the filing date on the ROS tape, it is not used. This presupposes that the majority of dates on the ROS tape are correct and avoids including announcements carried by the WSJ, but are already public information.

A.3. Clean Sample Screening Criteria

Observations from the two samples are omitted from the clean samples if they meet any one of the following criteria:

1. Contain information in the announcement unrelated to the financing arrangement (e.g. earnings or dividend announcements) or

have other announcements within a specified window as evidenced by citations in the Wall Street Journal Index. For bank debt announcements, this window is the announcement date (a newswire date) plus two business days. For bond debt announcements, the window is the announcement date (a WSJ date) plus and minus one business day.

2. Have inadequate (erroneous or missing) returns to estimate market model parameters.

3. Sources for monitoring variables cannot be found. Efforts are made to locate monitoring variables for firms not listed on Compustat.

Attributes of financing arrangements are collected when reported in the Wall Street Journal. These include type of agreement, collateral arrangements, maturity, dollar amount, and purpose. Also, bank credit agreements are classified as loan initiations, extensions, or expansions.

A.4. Monitoring Variables

This section describes how each of the monitoring variables is measured.

Firm size is measured as the total market value of outstanding common equity shares. The number of shares outstanding is multiplied by the market price per share on the last day of the estimation period. The number of shares outstanding is that reported on the CRSP tape for the most recent date prior to the last day of the estimation period.

Firms are classified as small (below CRSP median) or large (above CRSP median). The CRSP median value for each year is calculated using mid-year equity market values of all NYSE/AMEX CRSP firms.

The percentage of insider holdings is collected from Value Line. Value Line availability is limited to post-1979 so insider holdings could not be collected for 1977-1979 bond announcements. The percentage of institutional holdings and the number of institutional holders is collected from Standard & Poor's Security Owner's Stock Guide.

The proportion of debt in capital structure is measured as book value of long-term debt from Compustat divided by market value of common equity. Book value of debt for firms not on Compustat is taken from Standard & Poor's Security Owner's Stock Guide if available. Auditor name is determined from one of the following sources: Compustat, Moody's Industrial Manuals, Who Audits America, or individual company 10K reports. A firm is classified as having paid a dividend if CRSP indicates that a cash dividend has been paid in the 120 trading days prior to the event. Existing bank debt is measured as Compustat "debt in current liabilities" less "long term debt due in one year."

B. Methodology

B.1. Event Study Methodology

Event time methodology is used in this study for two reasons. First, the methodology is appropriate for this type of study since the changes in market value of firm equity are hypothesized to result from the announcements of interest. Second, using this particular event

study methodology ensures comparability with other studies of bank debt announcements.

The methodology can be summarized as follows (equations are listed below the text). Parameters of a return generating process (assumed here to be the market model) are estimated via an ordinary least squares regression (eqn. 1) over an interval usually close in calendar time to, but excluding a window around, the announcement date. Parameter estimates are then used to predict what a "normal" return would be on the days of interest conditional on corresponding market returns. Predicted returns are subtracted from actual returns resulting in prediction errors (PEs) (eqn. 2) or abnormal returns. PEs can be accumulated over time intervals to estimate the cummulative PEs (CPEs) and averaged across firms resulting in average PEs or CPEs (APEs or ACPEs) (eqns. 3,4).

Each PE is standardized by its *own* forecast error producing a standardized PE (SPE) (eqn. 5) which accounts for: noise in the time series returns used to estimate the parameters, bias in the estimates, and potential abnormality of corresponding market returns. The same magnitude PE can differ in statistical significance for different firms because different firms can have different levels of "normal" variation or noise in their returns. Noisier firms require larger PEs for statistical significance than do firms with smaller variability in their return streams. Standardized PEs (SPEs) can then be accumulated over various intervals and averaged across firms to conduct significance tests.

The test statistic for the null hypothesis of no abnormal return (i.e. H_0: mean CPE = 0) for a group of observations is constructed as follows. SPEs are accumulated over time intervals of interest to form standardized cummulative prediction errors (SCPEs) and then averaged across firms resulting in average SCPEs (ASCPEs) (eqn. 6). Since each SPE is assumed to be asymptotically distributed as unit normal, ASCPE can be multiplied by the square root of the number of observations and adjusted for the number of days in the interval to generate an asymptotically unit normal test statistic (Z) (eqn. 7) under the null hypothesis of no abnormal return.

$$R_i = a + b_i R_m + u_i \tag{1}$$

$$PE_{i,t} = R_{i,t} - a_i - B_i R_{m,t} \tag{2}$$

$$APE = (1/N)\sum_j PEjt \tag{3}$$

$$ACPE = (1/N)\sum_j \sum_t PEjt \tag{4}$$

$$SPE_{i,t} = PE_{i,t}/S_{i,t} \tag{5}$$

$$ASCPE_d = (1/N)\sum_t \sum_i SPE_i \; / \; (d)^{(1/2)} \tag{6}$$

$$Z = ASCPE \; (N)^{(1/2)} \tag{7}$$

where:

$PE_{i,t}$ - prediction error for security i on day t.

$R_{i,t}$ - return for security i on day t.

a_i - market model intercept for security i.

B_i - market model coefficient for security i.

$R_{m,t}$ - value weighted CRSP index return for day t.

$S_{i,t}$ - standard deviation of the forecast prediction error.

d - number of days in the interval.

Actual data used in the procedure are as follows. Firm returns (R_i) used for parameter estimation are CRSP daily returns including dividends. The CRSP value weighted index is used as a proxy for the market portfolio return (R_m).[8] The estimation period for the market model is from 170 days before the announcement to 21 days before the announcement. This is the same estimation period used by Mikkelson and Partch and Lummer and McConnell, ensuring that differences between this study and previous studies do not result from different estimation procedures.

Cumulative prediction errors are calculated for days 0 and +1 and used in group comparisons and regressions. This two-day prediction error is most frequently used because of its economic significance. The seemingly unusual window (days zero and *plus* one) is justified as follows. Most event studies define the announcement date as the date the announcement was published by the WSJ. Researchers consider that day and the preceding trading day in case the announcement was carried on newswire the day before its WSJ date. Since this study defines the event date as the newswire date, that date and the *next* date is used in case the announcement was made after trading hours.

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[8]Peterson (1989) notes that empirical evidence suggests that using a value-weighted market index is more conservative. Tests using equal-weighted indexes are more likely to detect abnormal performance.

Announcements carried on the newswire include the time stamp indicating the time of day of the announcement. Since we have the text of newswire announcements, event dates for these are more precise. If the announcement occurs after the close of trading, we define the event date as the next trading day. Additionally, if the time stamp reveals that an announcement was corrected some time after the original announcement, the first time stamp is used to define the event date.

B.2. Comparison of Group Means

Observations are grouped according to qualitative or quantitative monitoring variables. Qualitative grouping is straightforward based on the discreteness of the variable. Quantitative grouping is based on subdivisions by median values. Means tests are conducted as follows. Standardized prediction errors are OLS regressed on an intercept term and a dummy assuming unity for one group and zero for the other. The coefficient on the dummy represents the difference in means between the two group. The null hypothesis is that the dummy regression coefficient equals zero. If the coefficient is significantly different from zero, then the hypothesis of equal group means is rejected. This methodology yields results identical to single variable analysis of variance.

B.3. Multivariate Regressions

Weighted least square regressions are performed on each sample. The dependent variable is the two-day cumulative prediction error for days 0 and +1. Independent variables are the monitoring variables as defined in the Hypotheses Section. All variables are weighted by the respective inverses of the standard forecast errors of prediction errors

to adjust for hetereoscedasticity in stock returns. T-statistics are used to determine the significance of regression coefficients.

Chapter 5: Event Study Results for Bank Credit Agreement Announcements

Discussion of the empirical results for bank debt announcements comprises two main sections--event study and cross-sectional regression results. This chapter contains a discussion of event study results; Chapter 6 contains a discussion of regression results. This chapter is divided into four parts containing discussions of results for: (A) the full sample and the sample of initiations and renewals of bank debt, (B) contaminating events, (C) the source of the announcements, and (D) the sample of uncontaminated initiations and renewals of bank debt. Part D is further divided into two sections, event study results by firm attributes and by agreement attributes. Also analyzed are subsamples of various contaminating events, subsamples disaggregated by firm size for contaminated and uncontaminated announcements, and subsamples of various agreement characteristics for contaminated and uncontaminated announcements. Each of these groupings is further disaggregated by the source of the announcement: announcements from the WSJ and newswire combined, and announcements carried by the WSJ. Results providing evidence for or against hypotheses are discussed. Each section concludes with a summary of key results.

A. Full sample and sample of initiations and renewals

The search described in Chapter 4 for bank debt announcements yielded 2,763 announcements. After omitting observations for which CRSP

returns either could not be found or are insufficient in number to estimate market model parameters, 1,984 observations remained. This sample contains many different types of bank debt announcements including initiations and renewals of bank debt as well as other bank debt announcements that do not represent bank debt "issuances." With the exception of Lummer and McConnell (1989) who report results for bank debt reductions and cancellations, extant bank debt studies report results only for initiations and renewals of bank debt. No researchers report event study results for a comprehensive sample of all types of bank debt announcements. Thus, these results are presented in Tables 5-1 and 5-2 and discussed in detail.

The average two day prediction error (APE) for this sample is -0.83 % (z=-6.73), statistically significant at the 1% confidence level with 46.4% of the prediction errors positive. Of the 1,984 announcements, 890 observations (44.9% of the sample), represent announcements of the initiation or renewal of bank debt. This subsample generates a statistically positive APE of 0.58% (z=3.32). Thus, even with contaminating information, announcements of bank debt initiations and renewals, on average, sustain a positive reaction from the capital market.

Since APEs differ in sign and magnitude between the full sample of announcements and the sample of initiations and renewals, we investigate specific types of bank debt announcements that generate negative reactions. The negative average return for the full sample reflects the large number of negative announcements about bank debt. For example, observations may contain information about net losses, and technical or

payment defaults. Also reflected in the negative average are some relatively large negative returns. For example, some observations contain information concerning bankruptcy filings. Consequently, contaminated announcements are categorized with respect to type of contaminating information. Disaggregating by type of contamination yields insights into the processes by which information about bank debt is made public.

A contaminated announcement may contain several types of information. For example, an earnings announcement may report a technical default due to losses. Thus, contamination in a single announcement may fall into multiple categories.

B. Contaminating events

Bank debt announcements often contain accompanying negative information. Announcements containing information about earnings, dividends, or payment and technical defaults generate negative two day average prediction errors. Furthermore, the subsample of announcements containing contaminating information that does not fit into one of my categories has a negative two day average prediction error. The subset of observations in each group involving an initiation or renewal of bank debt have nonnegative average two day prediction errors. The results are consistent with a hypothesis that firm managers attempt to offset negative information by systematically arranging simultaneous announcements of bank debt initiations or renewals.

Some contaminated bank debt announcement subsamples have positive average two day prediction errors. These subsamples include default waivers, bidder firm merger news, and security repurchases.

B.1. Reductions, cancellations, and "searches for" for bank credit

Only 18 reductions or cancellations of bank credit agreements are reported suggesting that either they occur less frequently than initiations and renewals or they are systematically not reported by firm managers, banks, and the financial press. Whatever the reason, they induce statistically negative market reactions as evidenced by an APE of -8.84% (z=-4.84, n=18) with only 33.3% of the prediction errors positive. Reductions or cancellations of bank credit often result from other unfavorable events likely to reduce firm value.

Eleven firms that announce they "intend to complete" a bank credit agreement have APE of 2.65% (z=2.06), statistically significant. Twenty-seven firms that announce they are "seeking" a bank credit agreement have a statistically negative APE of -3.48% (z=-2.86). Announcements indicating that firms "seeking" bank credit are typically by firms in declining financial health.

B.2. Restructuring announcements

Bank debt restructurings represent about 12%, or 242 observations, of the full sample. Restructurings are defined as announcements that clearly indicate that firms are restructuring bank debt and announcements in which, although not called restructurings, terms of bank debt agreements are modified in ways different from a "normal" renewal. For example, a bank may extend the maturity of an agreement by one month while negotiations for a new agreement are completed. The full sample of restructurings generates a statistically significant APE of -0.63% (z=-4.29) with only 44.6 % of the prediction errors positive.

Fifty-three announcements involve simultaneous bank debt restructuring and renewal or initiation of other bank debt. These observations generate an APE of 0.94% (z=0.73), not significantly different from zero with 50.9% of the prediction errors positive. These results suggest that the market regards bank debt restructurings as a nonnegative event only if banks agree to renew and/or increase a firm's borrowing capacity. Restructurings of bank debt without a renewal of bank debt are typically the result of firms' inabilities to meet scheduled payments which may signal that firms' cash flows are lower than anticipated.

B.3. Acquisition announcements

Bank debt announcements containing information about pending acquisitions or takeover attempts/fights can be dichotimized by whether they involve bidder firm bank debt or target firm bank debt. There are 120 announcements about bidder firm bank debt; they generate a statistically positive APE of 0.97 % (z=3.31). The subsample of 66 announcements in which bidder firms initiate or renew bank debt has a lower APE of 0.51 % (z = 1.17), not statistically significant.

Target firm bank debt announcements typically involve news about target firms obtaining or possessing credit lines to fight unfriendly takeover attempts. These 32 announcements generate an APE of -0.71 % (z=-1.48), not significantly different from zero. The subset of 17 target firm initiations or renewals of bank debt has an APE of -0.87 % (z = -1.43), also not statistically significant.

B.4. Earning announcements

Earnings information contaminates bank debt announcements in two ways. First, earnings information may be announced within the text of a bank debt announcement in the WSJ. Second, earnings and bank debt information may be announced within newswire announcement text with only earnings numbers reported in the WSJ "Earnings Digest." No bank debt information is found by reading the WSJ index for these events because the index contains only the earnings numbers and lists the "Earnings Digest" page as the relevant article. Because the text of the latter type of announcements must be retrieved from the Dow Jones News Service database, this group of announcements is collected only for the years 1984-1986.

Bank debt announcements with earnings information that do not involve initiations or renewals are typically negative. Most announcements contain negative earnings and technical or payment defaults, restructurings, or some other nonpositive action concerning firm bank debt. The full sample of 366 earnings and bank debt announcements generates a statistically negative APE of -2.18 % (z=-9.19); only 40.2 % of the prediction errors are positive. The subsample of 86 initiation and renewal announcements has an APE of -0.61 % (z=-1.33), not statistically significant with 45.3% of the prediction errors positive.

In 36 announcements it is clear that earnings are reported or are forecasted to be below year-ago earnings. They have an insignificant APE of -0.18% (z=-0.70) and 41.7% of the returns are positive. Nineteen announcements in which it is clear that earnings are higher than year-

ago earnings have an APE of -0.95% (z=-0.97), also not statistically significant with 47.4% of the prediction errors positive.

Earnings announcements reported separately from bank debt announcements but appearing within the event window contaminate 54 announcements. The full sample of simultaneous but separate earnings and bank debt announcements generates a statistically negative APE of -2.89 % (z=-3.57). For announcements in which a firm initiates or renews bank debt (n=25) the APE is -0.00% (z=0.71), not statistically significant.

Although we do not control for expected versus unexpected components of earnings announcement effects, the above results suggest that firm managers may attempt to use bank debt as positive signals to offset negative earnings information. Initiations or renewals of bank debt announced with earnings information generate statistically insignificant APEs while announcements not involving initiations or renewals generate statistically significant negative APES. If the capital market regards banks as high quality monitors willing to signal positive approval of inside information by risking bank reputation and capital, even in the face of unexpectedly negative earnings, then simultaneous positive announcements of bank debt may mitigate effects of negative earnings.

B.5. Default announcements

Default announcements are categorized into the following groups: payment defaults, technical defaults, firm actions curing defaults, banks waiving defaults, and firms receiving prior approval for an action

that would otherwise cause default. Over 90%, or 191 observations, of default announcements do not involve initiations or renewals of bank debt.

Thirty-five payment default announcements generate a statistically negative APE of -10.41% (z=-8.50) with only 28.6% of the prediction errors positive. Seventy-two announcements of technical default, generally violations of net worth covenants resulting from charges against retained earnings, have an APE of -7.41% (z=-12.30), less negative than the payment default group APE, but still significantly negative with only 23.6% of the prediction errors positive.

There are 27 announcements in which firms' actions cured default. These generate an APE of -0.23% (z=-0.31), not statistically significant. For 54 cases in which a bank waives default, the APE is 2.48% (z=1.47). In 3 cases the firm obtains prior approval to pay a dividend that would otherwise cause technical default under the firm's credit agreement; the APE for these announcements is -2.90% (z=-1.59).

In 2 announcements a firm initiates or renews bank debt and reports a technical default; they have an APE of 2.94% (z=1.13). In 11 announcements a firm initiates or renews bank debt and cures default; they have an APE of -2.09% (z=-1.11). Banks waive defaults and initiate or renew debt in 8 announcements which generate an APE of 5.35% (z=2.06), statistically positive.

The analysis of default waivers and bank debt renewals is particularly interesting in light of recent findings reported in the bankruptcy literature. The incentives and strategic decisions of debtholders of firms in default are reflected in capital market

reactions to announcements of default. Thus, following is a discussion of important work in this area.

Franks and Torous (1989) analyze 27 firms in Chapter 11 bankruptcy and find priority rule violations in 21 cases. Weiss (1990) examines 37 cases of Chapter 11 filings by industrial firms and finds violation of priority rules in 29 cases. In both Weiss and Franks and Torous, secured creditors maintain priority status in most of the cases. Violations of priority occur primarily among unsecured creditors and between unsecured creditors and equityholders.

These results are consistent with arguments by Baird and Jackson (1988) that reorganizations allow senior creditors to renegotiate debt contracts and align with firm managers and equityholders to "freeze out" creditors with intermediate claims. Firm managers engage in this type of renegotiation to maximize shareholder wealth and to salvage their firm-specific human capital. Senior creditors have an incentive to renegotiate their debt contracts when allowing firm managers to continue operations maximizes firm value. Baird and Jackson argue that senior creditors have this right if firm value is less than the face value of their claims.

Differences in the contract structures between bank and bond debt may allow banks to more easily engage in the type of contract renegotiation suggested by Baird and Jackson. For example, a material adverse change clause, common in credit agreements, allows banks to force contract renegotiation when the bank believes such a change has occurred. Moreover, monitoring by banks increases the likelihood that bank debt renegotiation will occur earlier in a firm's financial

distress. Through contract renegotiation banks can increase their collateral interests so that in reorganization they receive greater portions of the proceeds. In other words, banks can raise their priority status from junior creditor to senior creditor.

This argument runs counter to Fama's (1985) suggestion that monitoring by banks with low priority claims benefits other outside claimholders by reducing their need to undertake costly and redundant monitoring. If banks have relatively low priority claims, we might expect bank monitoring to benefit shareholders. Indeed, this view provides a foundation for this study. If, however, banks have an option to increase their priority status to senior level when a firm faces financial distress, then banks may have *de facto* higher priority claims suggesting that their monitoring activities would not benefit shareholders, or even other debtholders.

Wruck (1990) also analyzes bankruptcy filings and argues that Chapter 11 filings represent not only costs (direct and indirect) but also potential benefits. She distinguishes between stock insolvency and flow insolvency, defining stock insolvency as negative *economic* net worth; flow insolvency as inability to meet current obligations. Creditors have power to force change only under flow insolvency. Claimholders must predict future cash flows for distressed firms to determine whether cash flows will resume to predistress levels sufficient to service debt or if a permanent reduction has occurred. If a permanent reduction has occurred, creditors have incentive to force a substantial reorganization or liquidation.

The above arguments suggest that the capital market response to a default waiver depends on whether or not a firm is in financial distress and, if in distress, whether firm equityholders can renegotiate debt contracts to their benefit. First, a bank waiver of default may signal that a firm is not actually in adverse financial health, but rather entered default as the result of a nonthreatening event. For example, a large writeoff may lower earnings or net worth to less than required by the bank but not affect cash flow, and thus ability to repay debt. Similarly a bank may believe a firm to be in adverse financial health, but assesses a reasonable probability of a return to financial health if the bank allows continued firm operations. In Wruck's terms, the firm is flow insolvent, but not stock insolvent. Under this interpretation, the capital market is expected to react in a relatively nonnegative manner.

Second, a bank may waive default because it assesses that a firm cannot generate sufficient funds to meet required payments and would be forced into bankruptcy. The bank may diagnose the firm's financial health as one of continuing decline (a permanent reduction in cash flows). In Wruck's terms, the firm is stock insolvent. If the bank's collateral interest in the firm is not sufficient (i.e. the bank is a junior creditor), it may be optimal to the bank to allow operation under default while perfecting its collateral interest. Once the bank has achieved perfect collateral interest, it has senior creditor status and can align with equityholders to freeze out junior claimholders. This behavior would be expected given the relatively priority violations for unsecured creditors documented by Franks and Torous (1989) and Weiss

(1990). This action results in less assets available for shareholders in the event of liquidation, but gives shareholders an option value they would otherwise not have. Thus, the expected market reaction is ambiguous.

Both of the subsamples of default waivers have significantly positive APEs. These results do not distinguish between the alternative explanations but are consistent with both. The two subsamples involving default and initiation/renewals of bank debt generate positive APEs. Since additional credit does not have super-priority status for firms not in Chapter 11, the market may interpret banks' willingness to extend additional credit as a signal that a permanent cash flow reduction has *not* occurred.

B.6. Dividend announcements

In 34 cases an announcement contains information about bank debt and dividends; they generate a statistically negative APE of -2.48% (z=-4.06). Eleven of these events involving an initiation or renewal of bank debt generate an APE of -.63% (z=-0.78), not statistically significant. In six of the eleven initiations or renewals it is clear that dividends are decreased or omitted. They have a statistically negative APE of -3.91% (z=-3.19) with 33.3% of the prediction errors positive. The same argument that applied to earnings announcements may apply here. Firm managers may attempt to offset negative dividend information by simultaneously announcing an initiation or renewal of bank debt.

B.7. Security issuance or repurchase announcements

Bank debt announcements may be contaminated by news of security issuances or repurchases in three ways. First, a firm may issue securities to repay bank debt. Second, a firm may announce that existing bank credit will be added to proceeds from a security issue to fund a project. Third, a firm may obtain bank debt to repurchase securities.

There are 163 announcements contaminated by news of security issuance with an APE of -.18% (z=-1.04). Fifty-two announcements involving bank debt initiation or renewal have an APE of -0.25% (z=-0.73), in effect normal returns. There are 28 announcements contaminated by news of security repurchases with an APE of 1.55% (z=2.96), statistically significant. Fourteen announcements involve an initiation or renewal of bank debt generating an APE of -0.03% (z=-0.18), not statistically significant.

Firms issued warrants to banks as part of compensation in three cases; they have an APE of 0.73% (z=0.54). Two cases in which a firm initiates or renews bank debt have an APE of 0.80% (z=0.62). One observation in each sample is negative.

B.8. Retiring bank debt

Although retiring bank debt is not contaminating news *per se*, in 61 cases firms retire bank debt and do not initiate or renew other bank debt; these generate an APE of 1.17% (z=1.58), not statistically significant. Eighteen announcements in which firms retire bank debt and

initiate or renew other bank debt have a statistically positive APE of 2.03% (z=2.10).

B.9. Other contaminating events

There are 489 announcements with contaminating information that does not fit into the above categories; they have an APE of -1.09% (z=-4.92), statistically negative. Approximately 26%, or 130, of these represent announcements in which a firm initiated or renewed bank debt generating an APE of 0.29% (z=-0.42), not statistically significant. These results suggest that either: (1) less negative news is announced with news of initiation or renewal of bank debt, or (2) news of initiation or renewal of bank debt mitigates simultaneously announced negative news. Unfortunately, there is no method to distinguish cleanly between the two.

Separate WSJ articles within the event window contaminate 411 announcements generating an APE of -0.56% (z=-1.98), statistically significant; the 179 of these involving an initiation or renewal of bank debt have an APE of 0.38% (z=1.03), not statistically significant. One hundred-twenty announcements are listed in the DJNS database as being in the WSJ but could not be found in the WSJ index. These announcements generate a statistically significant APE of -1.41% (z=-3.56) with 39.2% of the prediction errors positive. Only five of these are clearly initiations or renewals from the DJNS headline; they have an APE of 1.54% (z=1.04).

For 80 events, it was apparent from the text of the article or from the WSJ index that the bank debt information had been previously

announced; this group has a statistically insignificant APE of 0.27% (z=-0.36). Thirty-eight announcements in which firms initiate or renew bank debt generate an APE of 1.12% (z=0.75), also not statistically significant.

Seventy-two announcements are omitted from the final uncontaminated sample because they are by a financial company or a utility. They generate an APE of -1.08% (z=-2.92), statistically significant. In 48 of these a firm initiated or renewed bank debt generating an APE of -0.57% (z=-1.76), not statistically significant.

C. Source of Announcement

A unique aspect of this study of bank debt is the inclusion of announcements carried only on the newswire, or Broadtape. As news becomes available during each day, reporters enter the information onto the newswire. The newswire is essentially an electronic newspaper available to subscribers desiring earlier access to economically significant news; the newswire runs throughout the day carrying news stories as they are announced. Once news is carried on the newswire, it may or may not be published by the WSJ on the following day, or even two or three days later. Little evidence exists on how the WSJ chooses which news stories it will publish from among all of the news stories generated each day.

Barclay and Litzenberger (1988), using intra-day price data, find that share price responses to newswire announcements of debt or equity issues occur immediately before (possibly due to insider trading) and after announcement times, but *within* the trading day. Statistically

significant excess returns cease within two hours after the announcement. Market responses appear to result from newswire announcements, not subsequent WSJ announcements. Moreover, Thompson, Olsen, and Dietrich (1987) find that many firm specific newswire announcements are not carried by the WSJ. Thus, it is important to consider announcements carried on the newswire but not published by the WSJ.

Announcements carried only on the newswire comprise 17.8%, or 353 observations, of the full sample. These announcements are collected, however, only for the years 1984-1986. They represent 37.6% of the total observations for that time period. Restricting the sample to initiations or renewals of bank debt, newswire only announcements represent 24.0% of the full sample and 42.3% of the 1984-1986 sample. Further restricting the 1984-1986 sample to uncontaminated announcements, newswire only announcements represent 55.2%.

If we define the population of bank debt initiations and renewals as those carried either by the WSJ or the newswire, then WSJ announcements represent less than 60% of the population. If the WSJ does not intrcduce selection bias in choosing which bank debt stories to carry, this can safely be ignored. Results from this study, however, suggest otherwise.

To investigate the possibility of selection bias introduced by WSJ editors, samples are dichotimized into WSJ and newswire only announcements. The full WSJ sample generates an APE of -0.85% (z=-6.32, n=1,631); the comparable newswire only sample generates an APE of -0.74% (z=-2.26, n=353). The APEs are not statistically different from each

other as evidenced by a means test t-statistic of 0.291. Restricting the sample to initiations and renewals yields APEs of 0.69% (z=4.23, n=676) and 0.20% (z=-0.75, n=214), for the WSJ and wire only samples, respectively. A difference in means test between newswire and WSJ initiations and renewals allows rejection of the null hypothesis of equal group means with a t = 2.03.

The uncontaminated WSJ sample has a statistically significant APE of 1.25% (z=4.93, n=277); the comparable wire only sample has an insignificant APE of -0.18% (z=-0.35, n=96). A difference in means tests implies a difference in equal group means at the .05 level with a t-statistic of 2.28. Thus, for uncontaminated initiations and renewals and combined contaminated and uncontaminated initiations and renewals, the APE for the WSJ sample is larger and more positive than the APE for the newswire only sample. These results suggest that the WSJ may introduce selection bias in systematically choosing to carry news stories that induce greater price changes. Provided below is an explanation for why this may occur.

Intuitively, we might expect that the population of bank credit lines would contain proportionately more announcements of a positive or zero nature. That is, if banks accurately assess borrower credit quality initially, and if borrower quality does not vary significantly over time, then most announcements should be renewals or expansions rather than cancellations or reductions. Additionally, there may be a preference by firm managers to avoid negative bank debt announcements whenever possible, i.e. whenever immateriality can be argued.

Thus, we might expect a distribution of positives, zeros, and negatives with positives and zeros representing a proportionately larger part of the distribution. WSJ editors may regard announcements that move price significantly as economically important news. If they choose to carry announcements the market deems important, they will draw proportionately more larger positives (because there are proportionately less larger negatives). This could bias results from WSJ only samples.

Since wire announcements are collected only for 1984-1986, the sample restricted to these years represents the population of WSJ and wire bank debt announcements. Analyzing the sample of 173 uncontaminated combined WSJ and newswire announcements for the years 1984-1986 indicates that, while the average prediction error is smaller than for the full sample (0.49%) and still positive, it is statistically significant (z=1.77) at much weaker significance levels. The sample of 77 uncontaminated WSJ announcements for 1984-1986 generates an APE of 1.33% (z=3.05) while the comparable sample of 95 uncontaminated newswire announcements generates an APE of -0.18% (z=-0.35). A difference in means test rejects the null hypothesis of equal group means across these samples at the .05 level with t = 2.02.

In summary, all samples of initiations and renewals display a similar pattern. WSJ announcements are larger and more positive than newswire announcements indicating that samples drawn exclusively from the WSJ may be biased. Moreover, the means are statistically different within firm size groups--small and large firms. Thus, results are presented for the combined newswire and WSJ sample, and, for comparability with other studies, for the WSJ sample.

D. Initiations and Renewals

There are 373 uncontaminated initiations and renewals which generate an APE of 0.88% (z=4.07), statistically significant at the 1% level with 53.8% of the prediction errors positive. This compares to the APE of 0.58% (z=3.23, 51.0% positive) for the sample of combined uncontaminated and contaminated initiations and renewals. These results are broadly consistent with results of other published and unpublished studies analyzing announcement effects of bank credit agreements. The APE of 0.88% for the uncontaminated sample in this study is larger than the comparable APEs in Lummer and McConnell (1989), and Wansley, Elayan, and Collins (1991), and smaller than the APEs in James (1987) and Preece and Mullineaux (1991). Of these studies, only Preece and Mullineaux includes NASDAQ firms. Their sample, limited to WSJ announcements, has an APE of 1.00%. The uncontaminated sample of WSJ announcements in this study generates an APE of 1.25%, higher than that of Preece and Mullineaux.

The sample of 518 contaminated initiations and renewals (uncontaminated observations omitted) generates an APE of 0.36% (z=0.91). This APE is statistically different from the uncontaminated sample APE at the .10 level with a means test t=1.88. Taken together, these results suggest that the contamination criteria screen out more less positive observations. If good and bad contaminating news is announced randomly with bank debt news, then the contaminating news

should average to zero and not change the mean significantly from the contaminated sample to the uncontaminated sample.

D.1. Descriptive statistics for uncontaminated sample

Presented in Table 5-3 are descriptive statistics for the uncontaminated sample of firms announcing bank debt agreements. In Table 5-4 are the same statistics disaggregated by firm size. Small firms are below CRSP median in market value of equity; large firms are above median.

Agreements ranged from $1 million to $4000 million in size, with a median agreement size of $30 million. As percentages of market value of equity, they ranged from .0402 to 52.82, with a median relative size of .4731. Thus, bank debt agreements represent significant external financing for corporations. As discussed in Chapter 7, they represent relatively larger external financing than straight bond issues.

Market value of equity ranged from $1.86 million to $5170.46 million, with a median value of $63.51 million. Median small firm size is 34.21 million; median large firm size is 333.07, approximately 10 times as large. Thus, there is great disparity among the sizes of firms obtaining bank credit. Moreover, median relative agreement size was approximately twice as large for small firms, .5908, than for large firms, .3146.

Credit agreements are typically much shorter in maturity than straight bonds. Median maturity is six years, with a minimum of one year, a maximum of fifteen. There is little difference in agreement

maturities across firm sizes; median values are five and seven years for small and large firms respectively.

Small firms are more highly levered than large firms. Median long term leverage, defined as book value of long term debt divided by market value of equity, is .4303 for the full sample, .6304 for small firms, and .2997 for large firms. Furthermore, small firms use proportionately greater amounts of bank debt in capital structure. Bank debt is defined as Compustat "debt in current liabilities" less "long term debt due in one year." As a percentage of market value of equity, small firms' median value is .1179, large firms' median is approximately one-fourth as large, .0397.

Other interesting differences between median values for small and large firms include: insider holdings--17% for small firms, 8% for large firms; institutional holdings--8.77 for small firms, 29.90 for large firms; and number of institutional investors--8 for small firms, 54 for large firms. These differences are hypothesized to have significant implications for capital market interpretation of firms obtaining additional bank debt.

We next investigate event study results partitioned by characteristics of the client firms and characteristics of the credit agreements. Results are presented in Tables 5-5 through 5-8.

D.2. Event Study Results Disaggregated by Firm Attributes

Event study results by firm size

Hypotheses developed about firm size each predict a negative relationship between the magnitude of prediction errors and firm size. The market value of equity for each firm is calculated as the number of shares outstanding multiplied by the price per share at the end of the estimation period (21 days before the event date). For classification purposes, each firm is identified as above or below median firm size according to the following criterion. The market value of equity is calculated for all CRSP firms for each year in the sample, 1980-1986, for the trading date closest to July 1. From this sample of market values, the median value of firm size is established for each year. A firm in the sample is classified as being above or below the CRSP median according to the median market value for the year of the announcement. Below median sized firms are hereafter denoted as small firms; above median firms are denoted as large firms.

For the combined sample of uncontaminated and contaminated initiations and renewals, 42%, or 374, of the firms are large and 516 firms are small. APEs for the two groups are 0.09% (z=0.43) and 0.93% (z=4.00), respectively. For the uncontaminated sample, 35.8% or 133 of the firms are large firms and 239 firms are small firms. The two samples generate APEs of 0.24% (z=0.82) and 1.24% (z=4.47), respectively. Moreover, 57.1% of small firm prediction errors are positive; 48.1% of large firm prediction errors are positive. A difference in means tests between small and large firms, however, fails

to reject the null hypothesis of equal group means with a t=1.63 unless a one-sided test is used.

Thus, event study results provide support for the firm size hypotheses. Furthermore, bank debt announcements generate statistically positive market responses only for small capitalization firms. These firms are hypothesized to benefit most from bank asset services because participants in the capital market have less incentive to collect information about these firms. Thus, as Atiase hypothesizes, small capitalization firms' share prices may be less precise. Alternatively, large firms that are well monitored and/or have substantial reputation gain little from bank debt. Initiation or renewal of bank debt signals the capital market that unobservable (or unattainable at reasonable net cost) information for small firms is nonnegative. Because small firm prices are relatively imprecise, share price responses are larger.

The full sample of announcements has qualitatively similar results. The subsample of small firms generates an APE of -1.14% (z=-7.26); the subsample of large firms generates an APE of -0.34% (z=-1.69). These results suggest that small capitalization firms' prices also adjust by a greater percentage to negative information than do large firms' prices. There may also be a bias created by the fact that firms in declining financial health have relatively smaller market values, and thus, are likely to be classified as small firms.

Since firm size is a significant factor in capital market responses to bank credit agreement announcements, hereafter each category is also dichotimized by firm size.

Event study results by source of announcement and firm size

Firm size effects may account for previously noted differences between announcement sources, though *a priori*, intuition suggests the opposite. That is, results reported above suggest that only small firms have positive average prediction errors for bank debt announcements, yet as reported below, newswire only announcements are more likely to be about small firms. The number of WSJ index citations is much greater for larger firms than smaller firms. For example, citations for General Motors occupy several pages annually in the WSJ index. Many small firms have little more than three or four WSJ citations, if any, annually. Partitioning the sample by source of announcement and firm size yields insights into how information is disseminated for small versus large firms.

Of all newswire announcements (including contaminated) of initiations and renewals, 80.0% or 173 are about small firms. The remaining 41 newswire announcements are about large firms. The comparable sample of WSJ announcements contained 343 or 50.7% announcements about small firms, 333 announcements about large firms. Sample sizes suggest that bank debt announcements carried only on the newswire are much more likely to be about small firms than large firms. These firms get little WSJ coverage and are too small to interest information collectors. These firms are expected to benefit more from obtaining or renewing bank debt, as reflected in larger APEs. Nevertheless, an analysis of APEs indicates that this is *not* the case.

The combined clean and contaminated sample of initiations and renewals classified by firm size and source of announcement reveals that

small firms with announcements carried by the WSJ generate a statistically significant positive APE of 1.17% (z=5.01, n=343); small firms with announcements on the newswire generate an APE of 0.45% (z=-0.15, n=174), not statistically significant. The APEs for the WSJ and newswire samples are statistically different with a t = 2.18. Large firms with announcements carried by the WSJ generate an APE of 0.21% (z=0.95, n=333); large firms with announcements carried on the newswire generate an APE of -0.85% (z=-1.40, n=41). A means test fails to reject the null of equal group means for WSJ and newswire large firm samples.

Clean samples of initiations and renewals yield qualitatively similar results. The clean sample of small firm WSJ announcements has a statistically significant APE of 1.87% (z=5.22, n=158); the corresponding small firm newswire sample has an APE of 0.02% (z=0.41, n=82), not statistically significant. The large firm WSJ sample has an APE of 0.43 (z=1.52, n=119); the corresponding large firm newswire sample has an APE of -1.36% (z=-1.90, n=14). The statistically significant negative APE for large firms with announcements carried only the newswire is also puzzling. With only two positive prediction errors of the 14 observations in that sample, the statistically negative average may persist with a larger sample size.

Event study results by prior share price runup

Given the importance of firm size and the lack of coverage by financial press of many small firms, we examine the importance of previous share price runups regarding market response to bank debt announcements. Statistically negative share price runups for firms may

indicate capital market concern of financial health. Thus, we calculate share price runups for days -30 to -11. The runup is terminated at day -11 to avoid effects of possible leakage of news regarding bank debt. Results are reported in Table 5-6.

Twenty-nine firms in the clean sample have statistically negative (at the .10 level) share price runups. They have an APE of 2.40% (z=3.40) with 58.6% of the prediction errors positive. Firms without negative share price runups have an APE of 0.75% (z=3.26) with 53.5% positive prediction errors. Thus, the capital market interprets bank debt issues as positive signals even if firms do not display negative prior stock returns. The result suggests that bank debt is valuable for financially healthy firms, but more valuable for firms in declining financial health. Moral hazard problems are more likely to be severe for these firms implying that additional monitoring may be more valuable.

It is further interesting to investigate the different reactions to initiations and renewals disaggregated by prior share price performance. Firms with negative share price runups that initiated bank debt (n=17) have an APE of -0.17% (z=0.20), not statistically significant. Firms with normal prior share price performance that initiated bank debt (n=203) have an APE of 0.64% (z=2.09), statistically significant. Firms with negative share price runups that renewed bank debt (n=12) have an APE of 6.05% (z=5.06), statistically significant. Firms with normal prior share price performance that renewed bank debt (n=141) have an APE of 0.91% (z=2.58), statistically significant.

Event study results by dividend history and firm size

Hypotheses developed concerning a firm's dividend payment history predict that firms which pay regular dividends may be forced to enter capital markets periodically subjecting them to periodic monitoring and review. These firms are hypothesized to be better monitored than firms that do not pay regular dividends and consequently, do not enter capital markets as often. Thus, firms that paid recent dividends are hypothesized to generate relatively smaller APEs than firms that have not paid recent dividends.

The uncontaminated sample of 137 firms that paid dividends in the six months (120 trading days) prior to the bank debt announcement generate an APE of 0.47% (z=1.47). The comparable sample of 235 firms that did not pay dividends within the prior 6 months generates an APE of 1.13% (z=4.03). A difference in means test cannot reject the null of equal group means (t=1.031). Although not statistically different, the pattern is consistent with the hypothesis of larger announcement effects for firms that do not pay dividends.

Given the previous results about firm size, however, it is prudent to control at least partially for firm size. The uncontaminated sample of 198 small firms that did not pay a recent dividend has an APE of 1.41% (z=4.60); the comparable sample of 42 small firms that paid a recent dividend generate an APE of 0.45% (z=0.70). Thus, the pattern of results remains consistent with the dividend hypothesis even when the sample is restricted to small firms. Eighty-nine large firms that paid a recent dividend have an APE of 0.30% (z=1.10). Forty-four large firms that did not pay a recent dividend have an APE of 1.08% (z=-0.14).

Large firms do not generate statistically significant announcement effects regardless of whether or not they paid a recent dividend.

Event study results by auditor quality and firm size

The hypothesis concerning auditor quality predicts larger APEs for firms that have non-Big Eight auditors since the accounting literature provides evidence that Big Eight auditors provide higher quality auditing, and thus higher quality monitoring services.

The auditor name could not be found for seven firms which generate an APE of 1.36% (z=1.60). Fifty-one firms employing non-Big Eight auditors have an APE of 0.61% (z=1.04). The remaining 314 firms employed Big Eight auditors producing an APE of 0.92% (z=3.77). None of the APEs are significantly different from each other. Thus, these results do not provide support for the auditor hypothesis.

No additional support is provided with disaggregation by firm size. Small firms with Big-Eight auditors (n=188) have an APE of 1.37% (z=4.19); 47 comparable small firms with non-Big-Eight auditors have an APE of 0.59% (z=1.03). Large firms with Big-Eight auditors (n=127) have an APE of 0.24% (z=0.85); four large firms with non-Big-Eight auditors have an APE of 0.84% (z=0.19). Thus, bank debt announcement effects appear to be unrelated to auditor status.

Event study results by leverage and firm size

There are alternative hypotheses about the expected effect of leverage on share price responses. One explanation predicts that relatively highly levered firms will have smaller announcement effects

because they are already well monitored by bondholders. Another explanation predicts that relatively highly levered firms will have larger announcement effects because monitoring intensity is an increasing function of leverage.

The results support neither hypothesis even when controlling for firm size. There are 324 firms with data available for long term debt. Leverage is defined as the ratio of book value of long term debt to market value of equity. The median is calculated from the sample of 324 firms. The sample of firms with below median leverage produces an APE of 0.84% (z=2.48); the corresponding above median leverage sample produces an APE of 1.32% (z=3.47). Small firms with below median leverage (n=81) produce an APE of 1.26% (z=2.19); corresponding above median leverage small firms (n=113) produce an APE of 1.87% (z=4.28). A difference in means test cannot reject the null at the .10 level. Large firms with below median leverage (n=80) produce an APE of 0.38% (z=1.19); corresponding above median leverage large firms (n=50) produce an APE of 0.12% (z=-0.01). Thus, capital market responses to bank debt announcements appear to be unrelated to existing leverage.

Event study results by relative existing bank debt and firm size

Alternative hypotheses regarding existing bank debt are similar to leverage hypotheses. Monitoring intensity may increase with relatively higher amounts of debt leading to larger prediction errors. Alternatively, relatively higher amounts of existing bank debt may indicate higher current monitoring levels leading to smaller share price responses.

Bank debt is defined as Compustat "debt in current liabilities" less "long term debt due in one year." This data is available and nonzero for 124 firms. Relative bank debt is bank debt divided by market value of equity. Sixty-two firms with below median bank debt have an APE of 0.81 (z=1.80), statistically significant at the .10 level. Corresponding above median bank debt firms have an APE of 0.54 (z=0.77). A differences in means test fails to reject the null with a t = 0.611. Thus, the relative bank debt hypothesis is not supported by the full clean sample.

Disaggregating by firm size, however, reveals interesting results. Small firms with below median bank debt (n=22) have an APE of 0.57 (z=0.30), not statistically significant. Corresponding small firms with above median bank debt (n=41) have an APE of 1.37 (z=1.96). A difference in means test fails to reject the null with a t = 0.727.

Below median bank debt large firms (n=40) have an APE of 0.94% (z=2.02), statistically significant with 57.5% of the prediction errors positive. Above median bank debt large firms (n=21) have an APE of -1.08% (z=-1.42), not statistically significant with 38.1% of the prediction errors positive. A difference in means test rejects the null of equal means with a t = 2.114. Thus, there is a bank debt effect within the large firm sample. Large firms with below median bank debt have a statistically significant positive APE. This is a departure from the majority of other large firm classifications which have statistically zero APEs.

The result suggests that large firms benefit from additional bank debt only if they have relatively smaller amounts of existing bank debt.

This is consistent with a monitoring hypothesis that firms with relatively smaller amounts of existing bank debt benefit more from additional monitoring provided by new bank debt.

Event study results by insider holdings and firm size

Hypotheses regarding insider holdings predict that firms with higher insider holdings should experience smaller announcement effects than firms with lower insider holdings because firm insiders that hold larger portions of firm equity are expected to exhibit behavior consistent with shareholder wealth maximization.

Only 147 firms in the sample have insider holdings reported in Value Line. Median insider holdings are calculated from this sample. Seventy-two firms with below median insider holdings generate an APE of 0.81% (z=2.05); the comparable above median insider sample produces an APE of -0.03% (z=0.48), not statistically significant. The pattern of results is consistent with the developed hypothesis, although the means are not statistically different.

It is reasonable to expect that larger firms have smaller insider holdings. Thus, the sample is further subdivided by firm size. Small firms with below median insider holdings (n=14) produce an APE of 2.07% (z=1.77); small firms with above median insider holdings (n=41) have an APE of 0.59% (z=0.87). Large firms with below median insider holdings (n=41) produce an APE of 0.53% (z=1.33); above median insider holding large firms (n=51) have an APE of -0.37% (z=-1.04).

Thus, even when controlling for firm size, the pattern of event study results is consistent with the hypothesis for insider holdings.

Large firms do not have statistically significant APEs regardless of insider holdings status.

Event study results by institutional holdings and firm size

The percentage of common equity held by institutions is collected from Standard and Poor's Security Owners Guide. It proxies for the degree of monitoring provided by large blockholders. Hypotheses predict that excess returns are smaller for firms with relatively large institutional holdings because these firms are assumed to be better monitored.

Institutional holdings are available for 302 clean observations. Firms with below median institutional holdings have a statistically significant APE of 1.23% (z=3.44). In contrast, firms with above median institutional holdings have an insignificant APE of 0.02% (z=0.33). Thus, event study results are consistent with institutional monitoring hypotheses. Moreover, APEs across the two samples are statistically different with a t=1.988.

As expected, though, firm size and institutional holdings are positively correlated. Thus, we disaggregate by firm size to further analyze the importance of institutional holdings. The institutional monitoring hypothesis is supported within the small firm group. Results are weaker and not statistically significant for large firms. Small firms with below median institutional holdings have an APE of 1.37% (z=3.62, n=117); comparable above median institutional holding small firms have an APE of 0.04% (z=-0.02, n=59), not statistically significant. A difference in means test has a t=1.842. Large firms

with below median institutional holdings have a statistically insignificant APE of 0.73% (z=0.56, n=34); comparable above median institutional holding large firms have an insignificant APE of -0.00% (z=0.43 n=92), also not statistically significant. The APEs for large firms are not statistically different at the .10 level with a t=0.236.

Thus, the institutional monitoring hypothesis receives support within the small firm sample. The main result is that bank monitoring is valuable only for small firms that have relatively small institutional holdings. It is important to note that the results do not provide clear evidence that institutions monitor. The ambiguity arises because the results do not tell whether institutions actually monitor or whether their number serves as a measure of how well firms are currently monitored. We might expect institutional investors to avoid firms about which they know little--firms that are not well monitored, leaving the ones they choose as better monitored firms.

Event study results by number of institutional investors and firm size

We also investigate the importance of the number of institutional investors to announcement effects of bank debt. The number of institutional investors may contain different information from the percentage of institutional holdings. For example, a large number of institutional investors may indicate a large number of security analysts following a firm; the number of security analysts does not necessarily increase with the percentage of institutional holdings. Median number of institutional investors is calculated from the clean sample of firms with available data.

APEs are statistically significant only for firms with below median number of institutional investors, even when controlling for firm size. All size firms with below median number of institutional investors have an APE of 1.38% (z=3.94); firms with above median number of institutional investors have an APE of -0.18% (z=-0.22), not statistically significant.

Disaggregating by firm size, the main results hold. The sample of 134 small firms with below median number of institutional investors generate an APE of 1.29% (z=3.46); the comparable sample of 42 above median small firms generate an APE of -0.24% (z=-0.17). A means test between the APEs has a t=1.604. The sample of 21 large firms with below median number of institutional investors generates a statistically significant APE of 1.94% (z=1.96); the comparable sample of 105 above median large firms generates an APE of -0.15% (z=-0.15). The APEs are statistically different at the .10 level with a t=1.762.

Large firms and small firms alike only benefit from bank monitoring if they have relatively few institutional investors.

Event study results by renewal status

We next analyze event study results for samples grouped by renewal status of agreement. Lummer and McConnell (1989) find positive APEs for renewals and statistically zero APEs for new credit agreements, results that present an anomaly. Since all but five firms in LM's sample of loan initiations had some prior bank financing, we also investigate whether there is a relationship between prior bank debt and announcement effects of new bank debt. Presented in Tables 5-9, 5-10, 5-11 are

results for renewals and initiations using LM's classifications and my criterion. We then disaggregate by status of prior bank debt, i.e. did firms securing apparently new credit agreements have prior bank borrowing.

Lummer and McConnell criteria

Lummer and McConnell classify a bank debt announcement as new if it is not a renewal, replacement, extension, or expansion of another credit agreement; all other agreements are classified as renewals. Announcements by firms securing a new credit agreement with one bank to replace a credit agreement at another bank are categorized as initiations. Whether or not these are initiations or renewals is debatable. Therefore, we present results based on these criteria and results with new agreements with new banks reclassified as renewals.

Using the LM criteria for new versus renewal agreements, there are 571 clean and contaminated new agreements with an APE of 0.14% (z=0.46), not statistically significant; 319 renewals have an APE of 1.36% (z=4.94). Restricting samples to clean announcements yields different results. For the uncontaminated sample, 220 new agreements generate an APE of 0.58% (z=2.06), statistically significant, and 164 clean renewal agreements have an APE of 1.41% (z=4.09).

This is strikingly different from LM's finding of statistical *insignificance* for all classifications of new agreements. Moreover, the subsample of this study most comparable to LM's, the sample of WSJ initiations by NYSE/AMEX firms generates an APE of 0.78% (z=2.02), statistically significant at the .05 level. Thus, we cannot attribute

differences in significance solely to the richer sample of small firms in my study. My sample differs from LM by including NASDAQ firms, typically much smaller than listed firms. LM's sample of initiations has 176 observations between the years 1984-1986, the years covered by my sample. My comparable sample (WSJ NYSE/AMEX announcements only) has only 104 observations, suggesting that my screening criteria classified more observations as contaminated.

The finding of significance for initiations is especially important since Lummer and McConnell's result presents an anomaly. Initiations of credit agreements in their sample generate insignificant average share price responses, while revisions generate statistically significant average share price responses. This result is inconsistent with financial theory which predicts that rational investors would anticipate the wealth increases generated from revisions and capitalize these upon initiation of credit agreements.

LM criterion and firm size

Results reported above suggest that firm size and source of the announcement are important. The sample for this study differs in these key characteristics from Lummer and McConnell. First, this study's sample includes NASDAQ firms, typically much smaller in market value of equity than NYSE/AMEX firms. Second, it includes announcements carried exclusively on the newswire.

The clean sample of small (below CRSP median size) firms announcing new credit agreements has an APE of 0.75% (z=2.22), statistically significant and the large firm sample has an APE of 0.17%

(z=0.36), not statistically significant. The clean sample of small firms announcing renewals generates a statistically significant APE of 2.25% (z=4.73), and large firms have an APE of 0.39% (z=0.87), not statistically significant. Thus, the previous pattern of firm size results holds when events are classified by renewal status: APEs are larger for small firms than large firms.

There are 149 announcements of new credit agreements carried by the WSJ which generate a statistically significant APE of 1.09% (z=3.08). The 124 small firm renewal announcements carried by the WSJ have an APE of 1.55% (z=4.16), statistically significant.

Newswire only announcements generate insignificant announcement effects regardless of renewal status: 71 new credit agreements have an APE of -0.50% (z=-0.84); 25 renewal announcements have an APE of 0.71% (z=0.74).

Disaggregating the WSJ samples of new agreements and renewals by firm size reveals that the firm size effect persists. Ninety-five small firms with new loan agreements reported in the WSJ have a statistically significant APE of 1.50 (z=3.13); the comparable sample of 54 large firms has an APE of 0.37% (z=0.97), not statistically significant. Sixty-three small firms with renewals carried by the WSJ have an APE of 2.43% (z=4.42); the corresponding 65 large firms have an APE of 0.47% (z=1.16).

Newswire announcements have statistically zero APEs throughout similar groupings, but the general relationship between firm size and APE remains.

Thus, the result that announcements of renewed credit agreements generate larger responses from the capital market than announcements of new agreements persists. Following is a possible explanation. Banks initially assess firm quality, screen out a number of low quality firms, and grant initial credit lines to remaining firms. This signals that these firms are of relatively higher quality and induces a positive market reaction for firms about which the market knows little. Over time banks gain additional information so that at maturity a further screening of firms occurs. Extensions or expansions of agreements by banks increase the precision of the capital market's assessment of firms' quality. The symmetric response for poor quality firms is a negative market response to cancellations and reductions of credit agreements documented by LM and this study.

The major result from this analysis is a statistically significant positive APE for the sample of new credit agreements. The lack of significance for this group in Lummer and McConnell presented an anomaly and suggests that their sample may reflect selection bias. The APE for initiations is statistically positive in this study only for the small firm sample. Since the result depends upon firm size, it is likely that LM's sample of NYSE/AMEX firms did not contain a sufficient number of small firms to generate a statistically significant APE. Furthermore, LM's sample sizes for comparable time periods are larger suggesting that my screening criteria classified more observations as contaminated.

Event study results by status of prior bank debt

To refine the concept of a new and renewed credit agreement, firms' 10K reports and Moody's Industrial Manuals are searched for evidence of bank borrowings prior to announcement of "new" agreements. In question is whether the market reaction to a new credit agreement depends upon whether a new credit agreement supplements existing bank borrowings or is new in the sense that a firm did not have prior bank borrowings. Results are reported in Tables 5-12 and 5-13.

For 75 firms that had no prior bank borrowings under a credit agreement, the average prediction error is -0.12% (z=-0.00), not significantly different from zero. These are firms for which a new bank debt agreement represents *new* bank debt. In terms of monitoring these firms did not employ bank monitors before the announcement of interest.

For 100 announcements in which the agreement is *not* identified as being a renewal, replacement, or expansion, but in which firms had prior bank borrowings under a credit agreement (as evidenced by notes payable under a credit agreement listed in Moody's Industrial Manual or 10K report) the APE is a statistically significant 0.86% (z=2.21). This result is different from LM and may be attributable to the richer sample of small firms included in this study.

Twenty-six firms secured new agreements but apparently already had *open* lines of credit. They generated an APE of -0.10 (z=-0.27), not statistically significant. Six firms had "bank loans" listed on their balance sheets in Moody's and have an APE of -0.36 (z=-0.24), also not statistically significant.

The analysis of renewals in this study is unique in that dollar expansions are analyzed separately from maturity extensions. LM combine these with other favorable revisions. Wansley, Elayan, and Collins (1991) create ambiguity by using the term "renewal" in some places and "expansion" in other places in referring to apparently the same group. It is not clear whether maturity extensions are in their final sample.

The sample of 141 dollar expansion announcements generates a statistically positive APE of 1.49% (z=3.82) with 59.6% of the prediction errors positive. Twelve maturity extensions produce an APE of 3.45% (z=2.79) with five of the prediction errors positive. Nine credit agreements are renewed on more favorable terms than before (e.g. lower interest rates or less collateral, but not an increased borrowing limit) generating an APE of 1.58% (z=1.80). Two bank credit agreements are renewed on less favorable terms than before (e.g. higher interest rates, more collateral, or tighter covenants) and have an APE of -4.20% (z=-1.19); neither of the observations are positive. It is not clear from the evidence whether it is the renewal nature of bank debt agreements that is more positive or if it is the combination of more money being committed with a renewal.

Given the different results between WSJ and newswire announcements and between new and renewed credit agreements, it is interesting to note the relative number of dollar expansion announcements in the WSJ and wire samples, respectively. There are 25 dollar expansion announcements for the newswire only sample representing 26.88% of that sample. There are 116 dollar expansion announcements for the WSJ announcement sample representing 43.28% of that sample. Since dollar expansion

announcements are significantly positive, the different proportions of new and renewal announcements from each source could help explain the lack of statistical significance for the wire sample.

Dollar expansion agreements are further categorized by firm size. For dollar expansions, the firm size effect persists with average prediction errors of 2.05% (z=3.83, n=83) and 0.69% (z=1.38, n=58) for small firms and large firms, respectively.

The only sub-group of "new" agreements to generate statistically significant APEs is the sample in which firms had prior bank borrowings under a credit agreement. Dichotimizing this sample by firm size reveals that the announcement effect is statistically significant only for small firms. The small firm sample has an APE of 1.11% (z=2.21, n=68); large firms have an APE of 0.33% (z=0.67, n=32).

In summary, these results suggest that firms only benefit from additional bank monitoring if they are relatively small and currently have borrowing under a credit agreement. Initiations of credit agreements by firms with existing bank borrowings may be considered to have a renewal component. Thus, the capital market regards the renewal component in a firm-bank relationship as important.

Event study results by nature of previous relationship with bank

It has been argued in other studies that perhaps banks gain an informational advantage relative to the capital market over time and do not possess an advantage at the outset of a bank debt agreement. Continuing the argument, banks do not necessarily possess superior information processing technology, but rather are given access to

private information over time and thereby develop a comparative advantage relative to the capital market. This argument may appear to explain the difference between new and renewal announcement effects but does not solve the anomaly regarding this difference. If renewals create value because banks gain informational advantages over time, rational investors who form unbiased expectations should anticipate renewals and capitalize any value creation upon announcements of new agreements.

Thus, it is particularly interesting to investigate agreements in which one (or a group) of financial institutions replaced another group as a firm's lender. The former lender (monitor) that may have an informational advantage is replaced with a new lender (monitor) that has not had opportunity to establish an informational advantage. The central question is whether bank relationships create value because banks accumulate private information over time or because banks have a comparative advantage in private information collection and processing.

As shown in Table 5-14, in 41 clean announcements it is apparent that the agreement is with firms' previous banks generating an APE of 2.05% (z=2.88), statistically significant. It is apparent from the article for 18 announcements that a new agreement is with banks different from firms' previous banks, generating an APE of 2.67% (z=2.21), statistically significant with 13 of the prediction errors positive. All 18 firms in this sample are small firms. Thus, it cannot be argued that bank debt only sends positive signals about firm value if banks have gained an informational advantage about a firm *over time*.

To further analyze this result, the change-bank group and same-bank group are further restricted to dollar expansion announcements. Lummer and McConnell classify agreements as new if they are with new banks and replaced other agreements at different banks. The APE for expansion announcements with previous banks is 1.70% (z=2.60), statistically significant. The APE for 14 expansion announcements with a new banks is 3.79% (z=2.66), statistically significant. The combination change bank-dollar expansion announcements represent 14 of the total 18 uncontaminated announcements in which firms changed banks.

These results suggest that the action by a lender to commit more money to a borrower sends a positive signal, not just the renewal action by a bank that may have an information advantage. New relationships that replace other banking relationships are "renewals" in one sense of the term. This evidence, combined with results reported above suggesting that bank credit agreements are valuable only for firms with existing bank debt, indicate that the "renewal" nature of bank debt is valuable. This is consistent with Fama's (1985) argument that the short term nature of bank debt and the periodic review and monitoring it entails lowers agency costs for firms.

Event study results by exchange listing and firm size

Since this study differs from other published studies by including NASDAQ firms in the sample, it is interesting to investigate differences between average prediction errors for exchange listed firms and non-exchange listed firms. It can be argued that the organized exchanges, NYSE and AMEX, provide monitoring and certification services to their

listed firms. This argument predicts that additional monitoring will be more valuable for non-listed firms than for listed firms. Event study results disaggregated by exchange listing status are shown in Table 5-15.

The average prediction error for the sample of 236 NYSE/AMEX firms is 0.67% (z=2.44), statistically significant. The average prediction error for 136 NASDAQ firms is 1.26% (z=3.52), also statistically significant. Thus, the general relationship is as expected although a difference in means test implies that equality cannot be rejected. Since NASDAQ firms are typically much smaller than exchange listed firms, it is important to control for firm size. The sample of 123 small NYSE/AMEX firms generates an APE of 1.21% (z=2.87); the corresponding sample of 117 small NASDAQ firms generates an APE of 1.27% (z=3.46). The sample of 113 large NYSE/AMEX firms generates an APE of 0.08% (z=0.53); the corresponding sample of 20 large NASDAQ firms generates an APE of 1.14% (z=0.85). Thus, it appears that differences between announcement effects of exchange listed firms and non-exchange listed firms are attributable primarily to differences in firm size.

Summary of event study results by firm attributes

The most important determinant of share price response to bank debt announcement among firm attributes is firm size. Average two day prediction errors are positive and statistically significant only for small firms. Moreover, virtually all subclassifications of small firms have statistically significant average two day prediction errors. The

sample of uncontaminated large firm observations, and virtually all subclassification, have insignificant average two day prediction errors.

Another important determinant of share price response is the number of institutional investors holding equity of a firm. Firms with below median number of institutional investors have a statistically significant two day average prediction error; corresponding above median firms have an insignificant two day APE. Furthermore, the APEs are statistically different at the .01 level. Similar results obtain using the percentage of common equity held by institutional investors.

The institutional investor results hold even when comparisons are made within small and large firm samples. The percentage of institutional holdings is important within the small firm sample. The number of institutional investors is important within the large firm sample. In all cases, firms with above median institutional holdings have statistically insignificant APEs.

D.3. Event study results disaggregated by agreement attributes

event study results by type of agreement

Different types of bank debt agreements define the structure of agreements between banks and firms. Four specific categories are employed in this study; a fifth category includes agreements not otherwise classifiable. The first category includes agreements identified as "revolving." It includes revolving credit agreements, revolving credit facilities, revolving loan agreements, etc. The second category includes agreements identified as credit lines, lines of credit, straight lines of credit, etc. The third category includes

agreements identified as term loans. The fourth category includes agreements combining one type from the first or second categories with a term loan. Agreements in this category include credit agreements with immediate term loan borrowing and agreements with a delayed conversion to term loan features. The fifth category includes agreements identified as loan agreements, credit agreements, credit facilities, etc. that could not be categorized into the previous categories.

Disaggregating by type is important because different agreements may have important implications for how banks monitor firms. Revolving agreements are usually more formalized agreements that allow firms to draw down and repay funds repeatedly up to a certain dollar limit within a certain time period. Straight lines of credit allow firms to borrow up to a certain limit and then repay funds at maturity. Term loans allow firms to borrow a certain dollar amount and repay funds at the end of a certain term.

Results are presented in Tables 5-16 and 5-17. Average prediction errors are significantly positive only for revolving credit agreements and straight lines of credit. The uncontaminated sample of 123 revolving agreement announcements has an APE of 0.98% (z=2.39). Eighty-four uncontaminated straight line of credit announcements have an APE of 1.57% (z=3.65). Though the APE is larger for straight lines of credit, it is not significantly different from the APE for revolving credit agreements. Moreover, omitting one observation with a 45.4% prediction error (the highest PE from the entire sample) from the sample of straight lines of credit causes the APE for that sample to fall to 1.04%, close to the APE for revolving agreements. Thus, there is

virtually no difference between the two categories of types of agreements that generate statistically positive APEs.

Although technically revolving credit agreements are structured differently from straight lines of credit, from reading the articles it appeared that some WSJ reporters and/or some firm representatives use the two terms somewhat interchangeably. Straight lines of credit are not called revolving if they are not, but many revolving credit agreements are referred to elsewhere in their respective articles as "lines of credit" or "credit lines" without the "revolving" modifier. Straight lines of credit are referred to using similar terms. Thus, the empirical distinction between these two types of agreements is not clear.

Seven uncontaminated announcements of term loan agreements have an APE of 0.14% (z=-0.11); three prediction errors are positive. Although the sample size is small, this suggests that "bond" type loans similar to straight public bonds do not affect shareholder wealth.

There are 115 announcements of combination credit agreements. The APE of this sample is 0.54% (z=1.49), not statistically significant. If a higher level of monitoring results under both types of line of credit agreements than term loans, then similar monitoring should take place in the early years of a combination agreement.

The "other" category contains announcements of agreements identified as "credit agreements," "loan agreements," and "credit facilities." These agreements are often times similar in nature to combination agreements. The uncontaminated sample of these contains 43

observations and generates an APE of 0.28% (z=0.42), not significantly different from zero.

We disaggregate the above results by firm size to investigate whether certain types of agreements are more valuable for smaller or larger firms. The uncontaminated sample of 44 large firms announcing revolving agreements has a statistically significant APE of 1.27% (z=2.14). This result is striking in that it is one of the very few categorizations of large firms that generate statistically positive APEs. Samples of other types of agreements for large firms, albeit small sample sizes in most cases, do not generate statistically significant APEs. Large firm announcements of "other" types of agreements have an APE of -1.16% (z=-1.56, n=13). Straight lines of credit for large firms generate an APE of 0.90% (z=1.38, n=15). Term loan announcements for large firms generate an APE of -0.42% (z=-0.54, n=4). Fifty-seven combination agreements by large firms have an APE of -0.37% (z=-0.45). Results for large firms are roughly consistent with results for the sample not partitioned by firm size.

Small firm samples produce statistically positive APEs only for straight lines of credit and combination agreements. Thirty small firms enter into "other" types of agreements generating an APE of 0.90% (z=30). Seventy-nine small firms that enter into revolving agreements have an APE of 0.83% (z=1.39). Sixty-nine small firms announce straight lines of credit generating an APE of 1.72% (z=3.39). Three announcements of term loans by small firms generate an APE of 0.88% (z=0.46). Fifty-eight small firms enter into combination agreements generating a statistically significant APE of 1.43% (z=2.55).

In summary, results suggest that only bank debt structured as credit lines, revolving or not, generates benefits for firm shareholders.

Event study results by collateral arrangement of agreement

For a small set of announcements, information about collateral is provided. It can be argued that if a bank is given greater collateral in an agreement then the monitoring of certain actions of the firm would be reduced. Under secured agreements banks may rely on collateral liquidation for at least partial repayment of borrowings under an agreement. Thus, banks with secured agreements are more likely to be concerned with monitoring the value and status of the collateral. Monitoring one specific asset or group of assets reduces the possibility of other agents benefitting from that specific monitoring. If banks perfectly monitor and respond to the value of their collateral, firm management's ability to transfer wealth from debt holders to shareholders is reduced.

In contrast, under an unsecured agreement banks might be expected to monitor the actions of firm management that directly affect the cash flow and debt service capability of the firm. This is more likely to benefit other claimants of the firm, but again, management's ability to expropriate bondholder wealth is reduced.

If these two concerns of monitoring could be neatly dichotimized, it could be argued that the first monitoring concern, that of monitoring collateral value, would benefit shareholders less than the other monitoring activity. The resulting expectation about relative size of

APEs is that secured agreements would generate smaller APEs than unsecured agreements.

An alternative argument concerning the importance of collateral is that of a sorting or selection process when bank debt agreements are made. It can be argued that a firm for which banks require collateral in an agreement is more likely to have questionable financial health. These types of firms could benefit more from additional monitoring than firms in better financial health. This same selection process, however, may signal new information that a firm is in questionable financial health inducing negative share price responses. Thus, there is no unambiguous prediction by the sorting or selection process argument. The question is an empirical one. The results are shown in Table 5-18.

There are 43 announcements of secured agreements which generate a statistically significant average prediction error of 1.54% (z=2.08). Fifty-seven announcements of unsecured agreements generate an APE of 0.82% (z=1.16), not significantly different from zero. Information about the collateral arrangement is not provided in 272 announcements producing an APE of 0.79% (z=3.40), statistically significant.

Omitting distressed firms, the difference between secured and unsecured agreements disappears. The average prediction error for secured agreements falls to 0.65% (from 1.85%) with the omission of four distressed firms. Thus, it is clear that shareholders of distressed firms that get bank debt, even if it is secured, benefit significantly.

Given the importance of distressed firms to this issue, it is especially important to control for firm size. Six large firms announcing secured bank debt agreements have an APE of -1.51% (z=-0.78),

not statistically significant. Large firms announcing unsecured agreements have an APE of 0.30% (z=0.33), also not statistically significant. Thirty-seven small firms announcing secured agreements have an APE of 2.04% (z=2.55), statistically significant. Small firms announcing unsecured agreements generated an APE of 1.14% (z=1.21) with a sample size of 35.

Announcements of unsecured credit agreements carried only on the newswire have an average prediction error of 2.64% (z=2.10) with a sample of 11. This represents a departure from all other categories of newswire announcements which have statistically zero APEs.

In summary, the results suggest that collateral is relatively unimportant in the capital market reaction's to bank debt announcements.

Event study results by purpose of agreement

Firm managers wishing to signal certain information by announcing bank debt may affect interpretation of an announcement by giving or withholding additional information regarding the purpose of the bank debt. Thus, observations in the sample are categorized by the stated purpose of the bank debt. Tables 5-19 and 5-20 contain results disaggregated by purpose.

The purpose was not provided in the text of 150 of the 372 uncontaminated announcements. The capital market responds favorably to these announcements as evidenced by an APE of 0.74 (z=2.16), statistically significant. Thus, the positive announcement effects of bank debt announcements do not rely on additional information provided about intended uses of the funds. A specific purpose was given in 223

announcements generating an APE of 0.98% (z=3.50). Although this sample has a slightly higher mean, a difference in means test between the no purpose APE and the specific purpose APE fails to reject the null of equal means at the .10 level with a t = 0.45.

APEs are significantly positive for two of the groups of announcements providing a specific purpose. Forty-eight uncontaminated announcements of bank debt agreements to repay other debt induce a statistically significant APE 1.16% (z=1.92). This result is noteworthy because these bank debt issues do not represent a leverage increase for these firms. Thus, tax related leverage arguments cannot solely explain positive share price responses. The general purpose/working capital category has a statistically significant positive APE of 1.04% (z=3.05).

Forty-three firms state capital expenditure as the purpose and generate an APE of 0.28% (z=0.43), not statistically significant. Ten agreements to be used for unspecified acquisitions have an APE of 3.15% (z=1.56). Four agreements that backup commercial paper have an APE of 0.95% (z=0.99).

APEs are not statistically different from zero in any of the "purpose" categories for large firms. For small firms, only the "capital expenditure" group and the "commercial paper backup" group lack statistical significance.

Results categorized by stated purpose are interesting because they provide evidence about alternative hypotheses of the positive announcement effects generated by bank debt announcements. Wansley, Elayan, and Collins (1991) hypothesize that an initiation or renewal of bank debt signals positive information about a firm's "investment

opportunity set." Though the argument is not developed rigorously, the resulting prediction is that firms with greater investment opportunity sets experience larger abnormal returns upon bank debt announcements. That firms also experience positive average prediction errors when they secure bank debt used to repay other debt suggests that the investment opportunity set hypothesis cannot fully explain the average positive prediction errors. This is because in these cases the funds are not used to develop or fund new investment projects.

Furthermore if announcements of bank debt send signals about future investment opportunities, firm managers wishing to clarify this signal could state the purpose as future investment projects and/or capital expenditures. Yet only for the subsample of 26 WSJ announcements is the APE for announcements with capital expenditure as the stated purpose even weakly significantly different from zero. This average prediction error of 1.26% (z=1.68) is not significantly different from the APEs for the repay debt group or the general purpose/working capital group.

Another interesting result from the analysis of APEs grouped by purpose is the APE of 3.15% the unspecified acquisitions group. Though this average is not significantly different from zero, it is larger in magnitude than the average for any other group. This suggests that some bidder firm returns may occur well before the initiation of a specific acquisition.

Results for samples further subdivided by firm size can be summarized as follows. No sample based on purpose for large firms generates a statistically significant APE, positive or negative. For

small firms, all samples based on purpose generate statistically positive APEs with the exceptions of the "commercial paper backup" group which has only 1 observation, and the "capital expenditure" group which generates an APE of -0.33% (z=-0.43) with 28 observations.

Event study results by type of lender

Not all "bank" debt agreements are with *commercial banks* in the legal sense of the term. Commercial banks are subject to certain regulations that many other firms are not. For example, the liabilities (deposits) of commercial banks are insured. Since commercial banks must hold certain amounts of equity capital, their capital structures are largely fixed.

Given these differences, we consider event study results grouped by type of lender in Table 5-21. For the uncontaminated sample of 347 agreements with commercial banks the APE is a significantly positive 0.90% (z=3.92). The APE for the uncontaminated sample of 24 agreements with nonbanks is 0.77% (z=1.09), not statistically significant with 58.3% of the prediction errors positive. The APEs are not statistically different as evidenced by a difference in means test t=0.046. Thus, we cannot conclude that it is only agreements with commercial banks, in the legal sense of the term, that generate positive responses.

Summary of event study results by agreement attributes

Event study results suggest that client firm shareholders benefit most from bank debt agreements structured as lines of credits. Samples of both revolving and straight lines of credit have statistically

positive average two day prediction errors. Term loan agreements, similar to bonds in structure, do not generate significant share price responses. The sample of observations that did not report the agreement purpose have a significantly positive average prediction error. This suggests that it is not solely accompanying information regarding credit agreements that the capital market interprets as positive. Agreements obtained for the purposes of unspecified acquisitions and general purpose/working capital generate significantly positive market reactions. Bank credit agreements for capital expenditures and commercial paper backup, on average, generate normal returns. Average prediction errors do not appear to depend on collateral arrangements or type of lender.

Table 5-1: Average two-day prediction errors for full sample (includes initiations/renewals and other news--e.g. default announcements)

	%APE(0,+1)	Z-stat	N	%positive
Full sample:	-0.83**	-6.73	1984	46.4
Nature of announcement:				
Reduce or cancel bank debt	-8.84**	-4.84	18	33.3
Initiate or renew bank debt	0.58**	3.33	891	51.1
Intend to complete bank debt agreement	2.65*	2.06	11	63.6
Seeking a bank debt agreement	-3.48**	-2.86	27	33.3
Other news about bank debt	-1.88**	-11.49	1038	42.8
Restructuring bank debt:				
Restructuring announcements	-0.63**	-4.29	242	44.6
Merger related announcements:				
Bidder firms	0.97**	3.31	120	49.2
Target firms	-0.71	-1.48	32	46.9
Default announcements:				
Payment defaults	-10.41**	-8.50	35	28.6
Technical defaults	-7.41**	-12.30	72	23.6
Ending default	0.23	-0.31	27	44.4
Default waivers	2.48	1.47	54	63.0
Waiver before action	-2.90	-1.59	3	33.3
Earnings/Dividend related announcements:				
Earnings announcements or forecasts	-2.18**	-9.19	366	40.2
Dividend announcements	-2.48**	-4.06	34	32.4
Separate earnings announcement within window	-2.89**	-3.57	54	38.9

(continued)

Table 5-1 (continued): Average two-day prediction errors for full sample

	%APE(0,+1)	Z-stat	N	%positive
Security Related announcements:				
Warrants to banks	0.73	0.54	3	66.7
Other securities	-0.18	-1.04	163	42.3
Repurchase securities	1.55**	2.96	28	67.9
General contaminated announcements:				
Other news in same announcement	-1.09**	-4.92	489	44.6
Other announcement within event window	-0.56*	-1.98	411	46.5
Previously announced announcements	0.27	-0.36	80	47.5
Not found in WSJ	-1.41**	-3.56	120	39.2
Retiring bank debt:	1.38**	2.58	79	49.4
Source of announcement:				
Wall Street Journal	-0.85**a	-6.32	1631	45.9
Newswire	-0.75*a	-2.36	353	48.7

*Means test t = 0.291

Table 5-2: Average two-day prediction errors for contaminated and clean initiations or renewals of bank debt

	%APE(0,+1)	Z-stat	N	%positive
Full sample:	0.58***	3.33	891	51.1
Uncontaminated sample:	0.88***	4.07	373	53.8
Contaminated sample:	0.36*	0.91	518	49.0
Type of agreement:				
Revolving credit	0.70**	2.26	257	51.8
Straight line of credit	1.26***	3.48	188	57.4
Term loan	-0.17	0.52	19	31.6
Combination	0.26	0.79	202	50.5
Other	0.22	0.10	224	46.9
Nature of collateral arrangement:				
Secured	1.45***	2.54	88	56.8
Unsecured	0.79	1.31	80	53.8
Unknown	0.45***	2.37	722	50.0
Restructuring bank debt:				
Restructuring announcements	0.94	0.73	53	50.9
Purpose of bank debt:				
Not stated	0.31	1.13	505	50.1
Repay debt	0.94	1.49	101	46.5
Unspecified acquisitions	1.99**	2.32	22	59.1
Capital expenditures	0.21	0.12	73	56.2
General purpose/Working capital	1.16***	3.65	177	53.7
Commercial paper support	-0.18	-0.51	12	41.7
Merger related announcements:				
Bidder firms	0.51	1.17	66	47.0
Target firms	-0.87	-1.43	17	47.1

(continued)

Table 5-2 (continued): Average two-day prediction errors for contaminated and clean initiations or renewals of bank debt

	%APE(0,+1)	Z-stat	N	%positive
Default announcements:				
Payment defaults				
Technical defaults	2.94	1.13	2	50.0
Ending default	-2.09	-1.11	11	36.4
Default waivers	5.35*	2.06	8	75.0
Earnings/Dividend related announcements:				
Earnings announcements or forecasts	-0.61	-1.33	86	45.3
Dividend announcements	-0.63	-0.78	11	54.5
Separate earnings announcement within window	0.00	0.71	25	40.0
Security Issue announcements:				
Warrants to banks	0.80	0.62	2	50.0
Other securities	-0.25	-0.73	52	42.3
Security repurchases	-0.03	-0.18	14	57.1
General contaminated announcements:				
Other news in same announcement	0.29	-0.42	130	49.2
Other announcement within event window	0.38	1.03	179	52.5
Previously announced announcements	1.12	0.75	38	44.7
Non-industrial companies	-1.08**	-2.92	48	43.8
Retiring bank debt:	2.03*	2.10	18	66.7
Renewal status:				
Initiation	1.54	0.52	566	48.2
Favorable renewal	1.34**	4.80	311	56.3
Less favorable terms than before	1.90	1.24	8	62.5
Reduction	-1.35	-0.64	5	20.0

(continued)

Table 5-2 (continued): Average two-day prediction errors for contaminated and clean initiations or renewals of bank debt

	%APE(0,+1)	Z-stat	N	%positive
Source of announcement:				
Wall Street Journal	0.69[a]	4.23	676	50.7
Wire only	0.20[b]	-0.75	214	51.9

[a]Means test t = 1.88
[b]Means test t = 2.03

Table 5-3: Descriptive statistics for firm and security specific characteristics for 373 firms announcing bank debt issues

Variable	Mean	Median	Minimum	Maximum	N^-0
Agreement amount ($millions)	94.38	30.00	1.00	4000.00	370
Agreement amount/ mkt. value of eq.	.8458	.4731	.0402	52.82	369
Mkt. value of eq. ($millions)	252.19	63.51	1.86	5170.46	369
Maturity (yrs)	5 58	6	1	15	172
Long term debt/ mkt. value of eq.	1.001	.4303	.0008	28.24	320
Insider hlgs (%)	17.74	12	0.5	62	147
Instit. hldgs (%)	19.03	13.13	.042	66.72	298
# institutional investors	40.85	16	1	482	298
Relative bank debt	.2248	.075	.0009	4.35	124

Table 5-4: Descriptive statistics for firm and security specific characteristics for 373 firms announcing bank debt issues by firm size

Variable	Mean	Median	Minimum	Maximum	N^=0
		Small firms:			
Agreement amount ($millions)	32.07	17	1	425	238
Agreement amount/ mkt. value of eq.	1.09	.5908	.04838	52.82	238
Mkt. value of eq. ($millions)	41.57	34.21	1.86	151.10	238
Maturity (yrs)	4.96	5	1	15	101
Long term debt/ mkt. value of eq.	1.24	.6304	.0008	28.24	192
Insider hlgs (%)	21.21	17	1	60	55
Institut. hldgs (%)	11.78	8.77	.0418	66.72	174
# institutions	12.52	8	1	192	11
Relative bank debt	.2879	.1179	.0029	4.35	63
		Large firms:			
Agreement amount ($millions)	206.72	100	10	4000	132
Agreement amount/ mkt. value of eq.	.4044	.3146	.0402	2.42	11
Mkt. value of eq. ($millions)	634.8	333.07	84.24	5170.46	131
Maturity (yrs)	6.45	7	1	15	71
Long term debt/ mkt. value of eq.	.6356	.2997	.0023	7.817	128
Insider hlgs (%)	15.67	8	0.5	66.5	92
Institut. hldgs (%)	29.21	29.90	.387	66.5	124
# institutions	80.60	54	1	482	124
Rel. bank debt	.1595	.0397	.0008	2.25	61

Table 5-5: Two day average prediction errors grouped by source of announcement and firm size

Group	%APE(0,+1)	Z-stat	N	% Positive
All observations:				
Small firms:				
Wall Street Journal	-1.12**	-6.72	930	45.8
Newswire	-0.95**	-2.83	283	50.9
Large firms:				
Wall Street Journal	-0.39	-1.90	701	45.9
Newswire	0.10	0.42	71	40.8
Initiations and Renewals:				
Small firms:				
Wall Street Journal	1.17**	5.01	343	51.3
Newswire	0.45	-0.13	174	57.5
Large firms:				
Wall Street Journal	0.21	0.95	333	50.2
Newswire	-0.85	-1.40	41	29.3
Clean Initiations and Renewals:				
Wall Street Journal	1.25**[a]	4.93	277	54.2
Newswire	-0.18[a]	-0.35	96	53.1
Small firms:				
Wall Street Journal	1.87**[b]	5.22	158	55.7
Newswire	0.02[b]	0.41	82	59.8
Large firms:				
Wall Street Journal	0.43[c]	1.52	119	52.1
Newswire	-1.36[c]	-1.90	14	14.3

[a] Means test t = 2.276
[b] Means test t = 2.065
[c] Means test t = 2.204

Table 5-6: Two day average prediction errors for clean sample of bank debt announcements grouped by previous share price runup and firm size

Group	%APE(0,+1)	Z-stat	N	% Positive
All firms:				
Negative share price runup	2.40**	3.40	29	58.6
Other firms	0.75**	3.26	344	53.5
Small firms:				
Negative share price runup	2.66**	2.85	18	55.6
Other firms	1.12**	3.84	222	57.2
Large firms:				
Negative share price runup	1.97	1.88	11	63.6
Other firms	0.08	0.29	122	46.7

Table 5-7: Two day average prediction errors for clean bank announcements grouped by monitoring variables

Group	%APE(0,+1)	Z-stat	N	% Positive
By firm size:				
Small firms	1.24[a,***]	4.47	240	57.1
Large firms	0.24[a]	0.82	133	48.1
By dividend history:				
Paid recent dividend	0.47[b]	1.47	137	53.3
Not paid dividend	1.13[b,***]	4.04	235	54.5
By auditor quality:				
Big-Eight auditor	0.91[c,***]	3.78	315	53.0
Non-Big-Eight auditor	0.61[c]	1.04	51	58.8
Unknown auditor	1.36	1.60	7	57.1
By institutional holdings:				
< median inst. hldgs	1.23[d,***]	3.44	151	55.6
> median inst. hldgs	0.02[d]	0.33	151	49.7
Unknown inst. hldgs	1.99***	3.83	71	59.2
By insider holdings:				
< med. insider hldgs	0.81[e,*]	2.05	72	58.3
> med. insider hldgs	-0.03[e]	-0.48	75	53.3
Unknown insider hldg	1.27***	4.52	226	53.2
By number of institutional holders:				
< med. # inst. hldrs	1.38[f,***]	3.94	155	59.4
> med. # inst. hldrs	-0.18[f]	-0.22	147	45.6
Unknown # inst. hldrs	1.99***	3.83	71	59.2
By leverage:				
< med. leverage	0.84[g,*]	2.48	162	53.7
> med. leverage	1.32[g,***]	3.47	162	54.9
Unknown leverage	-0.43	0.42	49	51.0
By existing bank debt:				
< med. bank debt	0.81[h]	1.80	62	54.8
> med. bank debt	0.54[h]	0.77	62	51.6
Unknown bank debt	0.98***	3.71	249	54.2

[a]Means test t = 1.631
[b]Means test t = 1.031
[c]Means test t = 0.356
[d]Means test t = 1.988
[e]Means test t = 1.561
[f]Means test t = 2.631
[g]Means test t = 0.552
[h]Means test t = 0.611

Table 5-8: Two day average prediction errors for clean bank announcements grouped by firm size and monitoring variables

Group	%APE(0,+1)	Z-stat	N	% Positive
By institutional holdings:				
Small firms:				
< median inst. hldgs	1.37[a,b]	3.62	117	56.4
> median inst. hldgs	0.04[a]	-0.02	59	52.5
Unknown inst. hldgs	2.09[b]	3.79	64	62.5
Large firms:				
< median inst. hldgs	0.73[b]	0.56	34	52.9
> median inst. hldgs	-0.00[b]	0.43	92	47.8
Unknown inst. hldgs	0.99	0.78	7	28.6
By number of institutional holders:				
Small firms:				
< med. # inst. hldrs	1.29[b,c]	3.46	134	58.2
> med. # inst. hldrs	-0.24[c]	-0.17	42	45.2
Unknown # inst. hldrs	2.09[b]	3.79	64	62.5
Large firms:				
< med. # inst. hldrs	1.94[d]	1.96	21	66.7
> med. # inst. hldrs	-0.15[d]	-0.15	105	45.7
Unknown # inst. hldrs	0.99	0.76	7	28.5
By insider holdings:				
Small firms:				
< med. # insid hlgs	2.07[a]	1.77	14	71.4
> med. # insid hlgs	0.59[a]	0.87	41	63.4
Unknown # insid hlgs	1.36[b]	4.31	183	55.2
Large firms:				
< med. # insid hlgs	0.53[f]	1.33	41	53.7
> med. # insid hlgs	-0.37[f]	-1.04	51	47.1
Unknown # insid hlgs	0.88	1.44	39	43.6
By dividend history:				
Small firms:				
Paid recent dividend	0.45[g]	0.70	42	52.4
Not paid dividend	1.41[a,g]	4.60	198	58.1
Large firms:				
Paid recent dividend	0.30[h]	1.10	89	51.7
Not paid dividend	1.08[h]	-0.14	44	40.9

[a]Means test t = 1.842
[b]Means test t = 0.893
[c]Means test t = 0.236
[d]Means test t = 1.620
[e]Means test t = 1.604
[f]Means test t = 0.971
[g]Means test t = 1.762
[h]Means test t = 0.706

Table 5-8 Cont'd: Two day average prediction errors for clean bank announcements grouped by firm size and monitoring variables

Group	%APE(0,+1)	Z-stat	N	% Positive
By auditor quality:				
Small firms:				
Big-Eight auditor	1.37[a]	4.19	188	56.4
Non-Big-Eight auditor	0.59[a]	1.03	47	57.4
Unknown auditor	2.42[a]	2.13	5	80.0
Large firms:				
Big-Eight auditor	0.24[b]	0.85	127	48.0
Non-Big-Eight auditor	0.84[b]	0.19	4	75.0
Unknown auditor	-1.31	-0.37	2	0.0
By leverage:				
Small firms:				
< med. leverage	1.26[c]	2.19	81	54.3
> med. leverage	1.87[c]	4.28	113	60.2
Unknown leverage	-0.36	0.60	46	54.3
Large firms:				
< med. leverage	0.38[d]	1.19	80	52.5
> med. leverage	0.12[d]	-0.01	50	44.0
Unknown leverage	-0.02	-0.63	3	0.0
By existing bank debt:				
Small firms:				
< med. bank debt	0.57[e]	0.30	22	50.0
> med. bank debt	1.37[e]	1.96	41	58.5
Unknown bank debt	1.29[f]	4.15	177	57.6
Large firms:				
< med. bank debt	0.94[f]	2.02	40	57.5
> med. bank debt	-1.08[f]	-1.42	21	38.1
Unknown bank debt	0.23	0.37	72	45.8

[a]Means test t = 0.717
[b]Means test t = 0.036
[c]Means test t = 0.786
[d]Means test t = 0.700
[e]Means test t = 0.727
[f]Means test t = 2.114

Table 5-9: Two day average prediction errors grouped by renewal status

Group	%APE(0,+1)	Z-stat	N	% Positive
A: Agreement with new bank is a renewal (My criterion)				
A.1: Full clean sample				
Initiation	0.35*	1.39	207	50.7
Favorable Renewal	1.64**	4.75	162	58.6
Unfavorable Renewal	-4.20	-1.19	2	0.0
Reduction	-0.36	-0.12	2	50.0
A.2: Clean WSJ sample				
Initiation	0.79*	2.33	139	50.4
Favorable Renewal	1.84**	4.88	134	60.0
Unfavorable Renewal	-4.20	-1.19	2	0.0
Reduction	-0.36	-0.12	2	50.0
B: Agreement with new bank is new agreement (LM criterion)				
B.1: Full Clean Sample				
Initiation	0.58**	2.06	220	52.7
Favorable renewal	1.41**	4.09	149	56.4
B.2: Clean WSJ sample				
Initiation	1.09**	3.08	149	53.0
Favorable renewal	1.55**	4.16	124	56.5

*Means test t = 2.132 **Means test t = 1.492

Table 5-10: Two day average prediction errors grouped by renewal status and firm size--full clean sample

Group	*APE(0,+1)	Z-stat	N	% Positive
Agreement with new bank is a renewal (My criterion)				
Small firms:				
Initiation	0.43[a]	1.44	143	53.1
Favorable Renewal	2.52[a,b]	5.47	95	64.2
Unfavorable Renewal	-3.10	-1.05	1	0.0
Reduction	-0.79	-0.20	1	0.0
Large firms:				
Initiation	0.17	0.36	64	45.3
Favorable Renewal	0.39	0.87	67	50.7
Unfavorable Renewal	-5.31	-0.63	1	0.0
Reduction	0.08	0.03	1	100.0
Agreement with new bank is a new agreement (LM criterion)				
Small firms:				
Initiation	0.75[a,b]	2.22	156	55.8
Favorable Renewal	2.25[a,b]	4.73	82	61.0
Large firms:				
Initiation	0.17	0.36	64	45.3
Favorable Renewal	0.39	0.87	67	50.7

[a]Means test t = 2.539 [b]Means test t = 1.912

Table 5-11: Two day average prediction errors grouped by renewal status and firm size--clean WSJ sample

Group	%APE(0,+1)	Z-stat	N	% Positive
Agreement with new bank is a renewal (my criterion)				
Small firms:				
Initiation	1.05*	2.21	85	50.6
Favorable Renewal	2.96**	5.52	71	63.4
Large firms:				
Initiation	0.37	0.97	54	45.0
Favorable Renewal	0.57	1.26	63	54.0
Agreement with new bank is a new agreement (LM criterion)				
Small firms:				
Initiation	1.50**	3.13	95	54.7
Favorable Renewal	2.58**	4.65	61	59.0
Large firms:				
Initiation	0.37	0.97	54	50.0
Favorable Renewal	0.57	1.26	63	54.0

Table 5-12: Two day average prediction errors grouped by prior bank debt

Group	%APE(0,+1)	Z-stat	N	% Positive
		Full Clean sample:		
No prior ST bank debt	-0.12	-0.00	75	45.3
Existing ST borrowings[1]	0.86*	2.21	100	56.0
Expansion	1.49**	3.82	141	59.6
Extension	3.45**	2.79	12	41.7
More favorable terms	1.58	1.80	9	66.7
Less favorable terms	-4.20	-1.19	2	0.0
"Bank loans"[2]	-0.36	-0.24	6	83.3
Open lines[3]	-0.10	-0.27	26	38.5
		Clean WSJ sample:		
No prior ST bank debt	0.95	1.08	42	47.6
Existing ST borrowings[1]	0.81*	2.13	72	50.0
Expansion	1.59**	3.68	116	58.6
Extension	5.26**	3.81	9	55.6
More favorable terms	1.58	1.80	9	66.7
Less favorable terms	-4.20	-1.19	2	0.0
"Bank loans"[2]	-0.36	-0.24	6	83.3
Open lines[3]	0.69	.68	19	47.4

[1]As evidenced by notes payable under a bank credit agreement in Moody's. [2]As evidenced by "bank loans" on balance sheet in Moody's. [3]As evidenced by discussion of credit facilities in Moody's.

Table 5-13: Two day average prediction errors grouped by prior bank debt and firm size

Group	%APE(0,+1)	Z-stat	N	% Positive
		Small Firms:		
No prior ST bank debt	-0.17	.03	62	45.2
Existing ST borrowings[1]	1.11*	2.22	68	61.8
Expansion	2.05**	3.83	83	62.7
Extension	6.54**	4.31	8	62.5
More favorable terms	4.37**	3.12	4	100.0
Less favorable terms	-3.10	-1.05	1	0.0
"Bank loans"[2]	0.52	0.19	2	100.0
Open lines[3]	-0.00	-0.47	11	36.4
		Large Firms		
No prior ST bank debt	0.09	-.06	13	46.2
Existing ST borrowings[1]	0.33	.67	32	43.8
Expansion	.69	1.38	58	55.2
Extension	2.74	-1.25	4	0.0
More favorable terms	.65	-.37	4	40.0
Less favorable terms	-5.31	-.63	1	0.0
"Bank loans"[2]	-0.80	-0.44	4	75.0
Open lines[3]	0.15	.04	15	40.00

[1]As evidenced by notes payable under a bank credit agreement in Moody's. [2]As evidenced by "bank loans" on balance sheet in Moody's. [3]As evidenced by discussion of credit facilities in Moody's.

Table 5-14: Two day average prediction errors grouped by nature of relationship

Group	%APE(0,+1)	Z-stat	N	% Positive
		A: Full clean sample		
All clean:				
Same bank	2.05**	2.88	41	56.1
Changed banks	2.67*	2.21	18	72.2
Unknown	0.63**	2.87	313	52.4
Dollar expansions:				
Same bank	1.70**	2.60	28	53.6
Changed banks	3.79**	2.66	14	78.6
		B: Clean WSJ sample		
All clean:				
Same bank	3.04**	3.36	21	57.1
Changed banks	4.38**	3.01	12	83.3
Unknown	0.94**	3.60	244	52.5
Dollar expansions:				
Same bank	1.70**	2.60	28	53.6
Changed banks	3.79**	2.66	14	78.6

Table 5-15: Two day average prediction errors grouped by exchange listing status

Group	%APE(0,+1)	Z-stat	N	% Positive
	A: Full clean sample			
NYSE/AMEX	0.67*	2.44	236	52.5
NASDAQ	1.26**	3.52	137	56.2
	A.1.Small firms			
NYSE/AMEX	1.21**	2.87	123	56.9
NASDAQ	1.27**	3.46	117	57.3
	A.2.Large firms			
NYSE/AMEX	0.08	0.53	113	47.8
NASDAQ	1.14	0.85	20	50.0
	B: Clean WSJ sample			
NYSE/AMEX	0.85**	2.97	203	54.2
NASDAQ	2.36**	4.63	74	54.1
	B.1.Small Firms:			
NYSE/AMEX	1.39**	2.89	103	55.3
NASDAQ	2.77**	4.89	55	56.4
	B.2.Large firms:			
NYSE/AMEX	0.29	1.29	100	53.0
NASDAQ	1.16	0.83	19	47.4

*Means test t = 1.85

Table 5-16: Two day average prediction errors grouped by type of agreement

Group	%APE(0,+1)	Z-stat	N	% Positive
		A: Full clean sample		
Revolving credit	0.98*	2.39	123	52.8
Straight line of credit	1.57**	3.65	84	57.1
Term loan	0.14	-0.11	7	42.9
Combination*	0.54	1.49	115	53.0
Other*	0.28	0.42	43	53.5
		B: WSJ clean sample		
Revolving credit	1.37**	3.03	98	55.1
Straight line of credit	2.89**	4.74	54	59.3
Term loan	0.14	-0.22	5	40.0
Combination*	0.45	1.52	90	52.2
Other*	0.48	0.62	30	50.0

*A combination agreement is defined as one in which a term loan is combined with a revolving or straight line of credit. The term loan may be a conversion of a line of credit at a future date. The "other" category includes agreements identified with as "credit agreements," "loan agreements," or "credit facilities."

Table 5-17: Two day average prediction errors grouped by type of agreement and firm size

Group	%APE(0,+1)	Z-stat	N	% Positive
		A: Small firms		
Revolving credit	1.17	1.55	59	49.2
Straight line of credit	3.55**	4.63	40	62.5
Term loan	1.45	0.59	2	50.0
Combination*	1.48**	2.59	37	56.8
Other*	1.34	1.74	20	60.0
		B: Large firms		
Revolving credit	1.68**	2.89	39	64.1
Straight line of credit	0.99	1.48	14	50.0
Term loan	-0.73	-0.77	3	33.3
Combination*	-0.26	-0.19	53	49.1
Other*	-1.24	-1.39	10	30.0

*A combination agreement is defined as one in which a term loan is combined with a revolving or straight line of credit. The term loan may be a conversion of a line of credit at a future date. The "other" category includes agreements identified with as "credit agreements," "loan agreements," or "credit facilities."

Table 5-18: Two day average prediction errors grouped by nature of collateral arrangement

Group	%APE(0,+1)	Z-stat	N	% Positive
		A: Full clean sample		
Secured	1.54*	2.08	43	48.8
Unsecured	0.82	1.16	57	59.6
Unknown	0.79**	3.40	272	53.3
		B: Clean WSJ sample		
Secured	2.62**	2.91	29	48.3
Unsecured	0.55	0.59	46	52.2
Unknown	1.21**	4.39	202	55.4

Table 5-19: Two day average prediction errors grouped by stated purpose*

Group	%APE(0,+1)	Z-stat	N	% Positive
		A: Full clean sample		
Not stated	0.74*	2.16	150	53.3
All specific purposes together	0.98**	3.50	223	54.3
Specific purposes:				
Repay debt	1.16	1.92	48	52.1
Unspecified acquisitions	3.15	1.56	10	60.0
Capital exp.	0.28	0.43	43	58.1
Gen purpose/ working cap	1.04**	3.05	117	53.8
Commercial paper support	-0.95	-0.99	4	25.0
		B: Clean WSJ sample		
Not stated	0.96*	2.41	115	53.0
Repay debt	1.71*	2.20	36	55.6
Unspecified acquisitions	2.81	1.19	9	55.6
Capital exp.	1.26	1.68	26	57.7
Gen purpose/ working cap	1.31**	3.31	88	54.5
Commercial paper support	0.14	-0.06	3	33.3

*If multiple purposes are stated and one was not obviously prominent, the first purpose was used in classifications.

Table 5-20: Two day average prediction errors grouped by stated purpose* and firm size

Group	%APE(0,+1)	Z-stat	N	% Positive
		A: Small firms		
Not stated	1.28**	3.03	94	57.4
All specific purposes together	1.21**	3.30	146	56.8
Specific purposes:				
Repay debt	1.56*	2.12	37	59.5
Unspecified acquisitions	4.37*	2.14	8	75.0
Capital exp.	-0.33	-0.43	28	57.1
Gen purpose/ working cap	1.31**	2.82	72	54.2
Commercial paper support	-1.77	-0.77	1	0.0
		B: Large firms		
Not stated	-0.17	-0.40	56	46.4
All specific purposes together	0.53	1.42	77	49.4
Specific purposes: Repay debt	-0.19	0.12	11	27.3
Unspecified acquisitions	-1.73	-0.80	2	0.0
Capital exp.	1.41	1.32	15	60.0
Gen purpose/ working cap	0.60	1.37	46	54.3
Commercial paper support	-0.68	-0.70	3	33.3

*If multiple purposes are stated and one was not obviously prominent, the first purpose was used in classifications.

Table 5-21: Two day average prediction errors grouped by type of lender

Group	%APE(0,+1)	Z-stat	N	% Positive
	A: Full clean sample			
Commercial Bank	0.90**	3.92	347	53.3
Traditional Nonbank*	0.77	1.09	24	58.3
Nonfinancial company	1.40	0.05	1	100.0
	B: Clean WSJ sample			
Commercial Bank	1.26**	4.88	268	54.5
Traditional Nonbank	0.98	0.72	9	44.4

*Includes commercial finance companies such as General Electric Credit, insurance companies, and savings and loan associations.

Chapter 6: Bank Debt Announcement Regression Results

Weighted multivariate least squares regressions are employed to further test hypotheses. Event study results reported in the previous Chapter consider only univariate or bivariate classifications. Since some factors may proxy for others, we employ multivariate regression methodology to consider the importance of security and firm specific factors holding other factors constant.

Regression results that follow are from least squares regressions weighted by the respective inverses of standard forecast errors for two day prediction errors. Dependent variables in each regression are two-day prediction errors. For regressions containing only qualitative independent variables, standardized two-day prediction errors (SCPE) are regressed on unstandardized dummy variables. The remainder of the Chapter includes a discussion of regression results, followed by a summary of key results.

A. Discussion

Presented in Table 6-1 are regression results for the full clean sample. They provide additional support for the firm size hypothesis. The natural log of firm size is used because firm size values have outliers and the relationship could be argued to be nonlinear. Equation 1 of Table 6-1 shows the coefficient of ln(firm size) is -.0049 (t=-3.10), statistically significant at the .01 level. The intercept is also statistically significant, a positive .0595 (t=3.25). Given

previous findings of the importance of renewals in this study and others, a dummy for renewals (equals unity) is included to analyze the importance of renewal status holding firm size constant. It has a coefficient of .0103 (t=2.02), statistically significant at the .05 level. Thus, for the full clean sample of bank debt announcements, regression results support the previous findings of the importance of firm size and renewal status in the market's interpretation of bank debt. Share price response is negatively related to the natural log of firm size. Renewal status is an important determinant holding firm size constant.

Disaggregating the sample into small and large firms (Tables 6-2 and 6-3) reveals that statistical significance obtains only for small firms. Within the small firm sample, firm size is an important determinant of market reactions to bank debt announcements. The coefficient of ln(firm size) for small firms is -.0115 (t=-2.96), statistically significant at a .01 level; the corresponding coefficient for large firms is .0008 (t=0.26), not statistically significant. Firm size is unimportant in the market's interpretation of bank debt announcements for large firms. Moreover, the intercept for the large firm sample is a statistically insignificant -.0095 (t=-0.23). The small firm sample has a statistically positive intercept of .1239 (t=3.07).

The renewal dummies display similar patterns--statistically significant only for small firms. The coefficient for the renewal dummy for large firms is .0020 (t=0.34), not statistically significant; the

corresponding coefficient for the small firm renewal dummy is a statistically significant .0188 (t=2.49).

Equation (2) adds a dummy equal to one for firms with statistically negative (at a .10 level) share price runups for days -30 to -11. For many small firms, coverage by the financial press is sparse. Thus, this dummy is employed to capture possible capital market concern about a firm's financial health. Moral hazard and adverse selection problems are more severe for these firms suggesting that bank monitoring may be relatively more valuable. For the full sample, the coefficient of this dummy is .0165 (t=1.76), statistically significant at the .10 level. The small firm sample dummy coefficient is a positive .0199 (t=1.45), but not statistically significant. The large firm sample also has a positive, but insignificant, coefficient for this dummy, .0178 (t=1.63). Inclusion of this dummy does not change other regression coefficients significantly.

Addition of monitoring and control variables

Equation (3) adds monitoring and control variables to the regression equations. The adjusted R^2 rises for the full clean sample from .0351 to .0530 indicating additional explanatory power provided by monitoring and control variables. The firm size result is robust to inclusion of other firm and security-specific variables. The coefficient of firm size for the full clean sample is -.0051 (t=-2.29), statistically significant at the .05 level. The coefficient of firm size for the small firm sample is also robust: -.0112 (t=-2.41). For

large firms, insignificance of the firm size coefficient remains: -.0004 (t=-0.10).

The coefficient of the renewal dummy retains significance in the full sample, .0099 (t=1.89), and the small firm sample, .0172 (t=2.21). The coefficient remains statistically zero for the large firm sample. The intercept coefficients remain statistically positive for both the full clean and small firm samples, and insignificant for large firms.

The coefficient of the relative size of the agreement is statistically positive: .0039 (t = 2.07). There are three possible interpretations of this result. First, the relative size of the agreement is measured as dollar of agreement divided by market value of equity. For agreements that do not repay other debt, this measure is equivalent to the change in leverage of the firm if leverage is defined as debt to equity. This interpretation is consistent with findings of positive relationships between announcement effects of securities issuance and direction of leverage change, but inconsistent with Eckbo (1986) and Dann and Mikkelson (1984) who find nonpositive announcement effects for debt issues.

A second interpretation is developed by Wansley, Elayan, and Collins (1991) who argue that a larger relative size indicates larger investment opportunity sets, thus causing larger revaluations. A third interpretation is that monitoring intensity increases with relative size. Higher monitoring intensity generates greater benefits for shareholders causing a larger share price response.

The coefficient of natural log of insider holdings is negative and significant at the .10 level. Percentage of insider holdings is

expressed as a number between 1.0% and 99% so that natural log of insider holdings is positive. This result is as hypothesized and suggests that firms with larger insider holdings benefit less from additional bank monitoring because agency problems are less severe for these firms.

The coefficient of the dummy equal to one for firms with available data for leverage is a positive .0207 (t=2.12) and statistically significant. The coefficient of the dummy equal to one for firms whose auditor is known is negative -.0347 (t=1.65) and statistically significant at the .10 level.

All other regression coefficients are not statistically different from zero. The sign is negative on the coefficient for relative bank debt, but the t is only -0.64. The coefficient of natural log of maturity is negative, but not statistically significant. Thus, within the sample of bank debt agreements, maturity does not appear to be an important determinant of market reaction to bank debt announcements. Flannery's maturity hypothesis is not supported by the data.

The signs are opposite from expected on the dummy equal to unity for firms that paid a recent dividend and the dummy equal to unity for firms with Big-Eight auditors.

Regression results for small firms are qualitatively similar to the full sample. The dummy for known auditor is no longer significant, while the sign on relative bank debt has reversed to positive. The three coefficients significant in equations (1) and (2) remain significant with the addition of monitoring and control variables. Relative size is only weakly significant for small firms.

For large firms, only one coefficient (relative existing bank debt) is significantly different from zero. Moreover, the F-statistic and R^2 are both quite small. Consistent with predictions, the coefficient of relative bank debt is -.0475 (t=-2.41), statistically significant at the .05 level. Large firms with relatively higher levels of bank debt benefit less from additional bank monitoring because they are currently well monitored. It is noteworthy that a similar result obtains for bond announcements, typically made by large firms. Signs are opposite from predicted on the Big-Eight auditor dummy and the recent dividend dummy, but not statistically significant.

Equation (4) adds two variables for institutional holdings to regression equation (3): natural log of institutional holdings and a dummy equal to unity for firms with institutional holdings information available. These are added in a separate regression because institutional holdings is related to firm size and creates a multicollinearity problem.

With the inclusion of institutional holdings, the coefficient of firm size falls to -.0040 (t=1.73) for the full clean sample and is significant only at the .10 level. The coefficient of insider holdings loses significance, as well as the dummy for known auditor and the intercept. The coefficient of institutional holdings is negative as predicted, but not statistically significant. Similarly, for small firms, the coefficient of firm size falls from -.0112 to -.0094, statistically significant only at the .10 level. The significance of other coefficients is unaffected by the addition of institutional holdings.

For large firms, relative bank debt remains a significant determinant of share price responses to bank debt announcements with a coefficient of -.0496 (t=-2.51). Additionally, a dummy equal to one for nonzero Compustat bank debt is significantly positive at the .10 level. The F-statistic (0.986) and adjusted R^2 (-.0022), however, remain low.

B. Summary

Regression results for bank debt agreements indicate that firm size and renewal status are important determinants of capital market responses to bank debt announcements. Statistical significance of these variables obtains for the full clean sample. Dichotimizing the sample by firm size, however, reveals that statistical significance obtains only for small firms. Within the small firm sample, firm size and renewal status are important determinants of share price response to bank debt announcements. Coefficients of these variables in the large firm regression are statistically zero. These results provide additional support for the developed hypotheses regarding firm size and its impact on bank loans as signals of firm value.

Lummer and McConnell's (1989) finding of the importance of renewal status is confirmed. A dummy equal to unity for renewals is significantly positive in the full sample, but disaggregating by firm size reveals that renewal status is important only for small firms. Thus, small firms benefit from the periodic review and monitoring that short term bank borrowing entails; large firms do not.

With the exception of relative existing bank debt, no other coefficients of monitoring variables obtain statistical significance in

either the full sample or the samples dichotimized by firm size. The coefficient of relative existing bank debt is statistically negative for large firms. Two control variables, relative size of agreement and a dummy equal to unity if leverage is known, obtain statistical significance in the full sample regression. But again, dichotimizing by firm size reveals that significance obtains only for small firms.

Table 6-1: Weighted LS regressions of clean sample of 373 bank debt announcement two-day prediction errors on various monitoring and control variables.

Equation	(1)	(2)	(3)	(4)
Intercept	.0595**	.0576**	.0643*	.0525
	(3.25)	(3.15)	(2.08)	(1.64)
ln(firm size)	-.0049**	-.0048**	-.0051*	-.0040
	(-3.10)	(-3.07)	(-2.29)	(-1.73)
Renewal dummy	.0103*	.0102*	.0092	.0099
	(2.02)	(2.01)	(1.77)	(1.89)
Distress dummy		.0165	.0185*	.0168
		(1.76)	(1.96)	(1.77)
Maturity information			.0038	.0035
			(0.33)	(0.30)
ln(maturity)			-.0041	-.0037
			(-0.64)	(-0.57)
Known if secured			-.0003	-.0003
			(-0.05)	(-0.05)
Secured			.0046	.0044
			(0.42)	(0.39)
Type agreement known			.0086	.0080
			(1.05)	(0.97)
Term loan			-.0063	-.0046
			(-0.39)	(-0.29)
Relative size			.0039*	.0038*
			(2.07)	(2.01)
Insider hldgs known			.0045	.0067
			(0.46)	(0.66)
ln(% insider holdings)			-.0005	-.0049
			(-1.65)	(-1.57)
Leverage			.0012	.0012
			(0.49)	(0.51)
Leverage known			.0207*	.0274*
			(2.12)	(2.55)
Recent dividend			.0035	.0042
			(0.54)	(.64)
Big-eight auditor			.0045	.0057
			(0.54)	(0.68)
Auditor known			-.0347	-.0291
			(-1.65)	(-1.37)
Relative bank debt			-.0080	-.0079
			(-0.64)	(-0.64)
Bank debt known			.0007	.0005
			(0.13)	(0.09)
Institutional hldgs known				-.0122
				(-1.23)
ln(% institutional hldgs)				-.0018
				(-0.73)
Adjusted R^2	.0297	.0351	.0530	.0565
F	6.66**	5.49**	2.09**	2.05**

Table 6-2: Weighted LS regressions of 239 clean small firm bank debt announcement two-day prediction errors on various monitoring and control variables.

Equation	(1)	(2)	(3)	(4)
Intercept	.1239**	.1221**	.1254*	.1076*
	(3.07)	(3.03)	(2.38)	(1.99)
ln(firm size)	-.0115**	-.0115**	-.0112*	-.0094*
	(-2.96)	(-2.97)	(-2.41)	(-1.96)
Renewal dummy	.0188*	.0198**	.0172*	.0178*
	(2.49)	(2.61)	(2.21)	(2.28)
Distress dummy		.0199	.0211	.0186
		(1.45)	(1.45)	(1.27)
Maturity information			.0067	.0074
			(0.42)	(0.46)
ln(maturity)			-.0030	-.0027
			(-0.30)	(-0.27)
Known if secured			.0001	.0003
			(0.01)	(0.03)
Secured			.0030	.0029
			(0.20)	(0.19)
Type agreement known			.0040	.0027
			(0.33)	(0.22)
Term loan			-.0116	-.0073
			(-0.39)	(-.24)
Relative size			.0039	.0039
			(1.67)	(1.66)
Insider hldgs known			.0141	.0186
			(0.66)	(0.86)
ln(% insider holdings)			-.0065	-.0066
			(-0.92)	(-0.94)
Leverage			-.0001	-.0002
			(-0.04)	(-0.07)
Leverage known			.0244*	.0305*
			(2.11)	(2.40)
Recent dividend			-.0020	-.0012
			(-0.20)	(-0.12)
Big-eight auditor			.0062	.0078
			(0.62)	(0.78)
Auditor known			-.0364	-.0326
			(-1.35)	(-1.20)
Relative bank debt			.0100	.0113
			(0.61)	(0.69)
Bank debt known			-.0085	-.0092
			(-0.87)	(0.93)
Institutional hldgs known				-.0110
				(-0.89)
ln(% institutional hldgs)				-.0024
				(-0.74)
Adjusted R^2	.0507	.0550	.0527	.0535
F	7.35**	5.62**	1.70**	1.64**

Table 6-3: Weighted LS regressions of 132 clean large firm bank debt announcement two-day prediction errors on various monitoring and control variables.

Equation	(1)	(2)	(3)	(4)
Intercept	-.0095	-.0135	-.0183	-.0423
	(-0.23)	(-0.33)	(-0.29)	(-0.65)
ln(firm size)	.0008	.0011	-.0004	.0011
	(0.26)	(0.34)	(-0.10)	(0.28)
Renewal dummy	.0020	.0008	.0018	.0029
	(0.34)	(0.14)	(0.27)	(0.43)
Distress dummy		.0178	.0192	.0193
		(1.63)	(1.64)	(1.64)
Maturity information			.0037	.0018
			(0.23)	(0.11)
ln(maturity)			-.0083	-.0074
			(-0.98)	(-0.87)
Known if secured			.0047	.0036
			(0.53)	(0.40)
Secured			-.0129	-.0136
			(-0.72)	(-0.76)
Type agreement known			.0131	.0135
			(1.23)	(1.27)
Term loan			-.0062	-.0067
			(-0.37)	(-0.41)
Relative size			-.0028	-.0017
			(-0.31)	(-0.19)
Insider hldgs known			-.0037	-.0010
			(-0.38)	(-0.11)
ln(% insider holdings)			-.0025	-.0025
			(-0.80)	(-0.79)
Leverage			.0041	.0041
			(1.33)	(1.34)
Leverage known			.0339	.0292
			(0.88)	(0.76)
Recent dividend			.0053	.0077
			(0.64)	(0.91)
Big-eight auditor			.0086	.0099
			(0.38)	(0.43)
Auditor known			-.0261	-.0079
			(-0.50)	(-0.14)
Relative bank debt			-.0475*	-0.0496*
			(-2.41)	(-2.51)
Bank debt known			.0107	.0111
			(1.63)	(1.68)
Institutional hldgs known				-.0009
				(-0.05)
ln(% institutional hldgs)				-.0046
				(-1.25)
Adjusted R^2	-.0143	-.0015	-.0029	-.0022
F	0.08	0.94	0.98	0.986

Chapter 7: Bond Announcement Empirical Results

A summary of results for bond announcements is presented first followed by a more detailed discussion. Empirical results for the bond announcement sample are broadly consistent with previous studies. The full uncontaminated sample has an insignificant two day average prediction error. Disaggregating by firm size does not change the results appreciably. Both small and large firm samples have insignificant average prediction errors. The APE for small firms is slightly higher than, but not statistically different from, the APE for large firms. Thus, there is no firm size effect within the bond sample. Bond announcement prediction errors display cross-sectional patterns different from that of bank debt announcements. This suggests that the capital market is able to distinguish between the two and regards bank debt as providing valuable assets services for small firms.

Event study results suggest that the relative amount of existing bank debt of a firm is a significant determinant of share price response to bond announcements. Firms with above median relative bank debt have a statistically negative average two day prediction error. In contrast, below median bank debt firms have a positive (at the .10 level) average prediction error. Moreover, the APEs across the samples are statistically different at the .01 level.

Cross-sectional regression results indicate that share price responses to bond announcements are negatively related to relative existing bank debt, a dummy equal to unity for firms that paid recent

dividends, and the natural log of institutional holdings. The relative bank debt result is consistent with event study results. Regressions also reveal that sinking fund provisions are important; the coefficient of the sinking fund dummy variable is positive.

The remainder of the Chapter is organized as follows. Descriptive statistics are presented in Part A for the uncontaminated bond sample followed by comparisons of firm attributes across bond and bank debt samples. Presented in Part B of this Chapter are event study results for contaminated and uncontaminated bond samples disaggregated by security characteristics and firm characteristics. Part C contains a discussion of regression results.

A. Descriptive statistics for uncontaminated bond announcements

Descriptive statistics are presented in Table 7-1 for firms issuing bonds. Firms issuing bonds are relatively larger firms as evidenced by a median firm size of $445.54 million, with a range of $4.29 million to $36.730 million. The median amount of new financing relative to market value of equity is .1602, ranging from .0137 to 3.95. Bonds have longer maturities than most bank debt, a median maturity of 20 years. Median insider holdings is 4%; median institutional holdings is 25.83 %. Median number of institutional investors is 89, ranging from 1 to 895. Firms that issue bonds use relatively smaller amounts of bank debt; median value is .0366, comparable to the median for large firms obtaining bank debt. Median long term leverage of firms that issue bonds is comparable to those that obtain bank debt: .4903.

B. Differences in firm attributes between bond and bank debt samples

We compare descriptive statistics for firms across the two samples to investigate attributes of firms choosing public and private market financing. As expected, the data suggests that smaller firms cannot tap public debt markets as easily as larger firms with less severe asymmetric information problems. Median market value of equity for firms announcing bank debt is $63.510 million; for firms announcing bond issues, median firm size is approximately seven times larger, $445.540 million. Median firm size for large firms announcing bank debt is $333.07 million, closer to but still less than the median for bond announcements.

Other descriptive measures correlated with firm size show similar differences across bond and bank debt samples. Median insider holdings for bank debt firms is 12.0%, and for bond debt firms 4.0%. Median institutional holdings is 13.13% for bank debt firms, and 25.83% for bond debt firms. Bank debt firms have a median number of institutional investors of 16 while bond debt firms' median is 89.

These differences are consistent with arguments put forth by Fama and Diamond that suggest greater asymmetric problems for small firms make debt financing relatively more expensive, apparently prohibitively expensive. Small firms represent 21.46% of the bond sample; they represent 63.81% of the bank debt sample. It is noteworthy that small firms apparently cannot raise public debt capital as easily as large firms.

Bank debt agreements represent larger relative agreements than bond debt issues. Median relative size of new financing is .4731 for

bank debt agreements, .1602 for bond debt issues. This is interesting in light of close median values for long term leverage (book value of long term debt / market value of equity): .4303 for bank debt firms, .4903 for bond debt firms.

C. Event Study Results

The search for bond announcements yielded 310 observations with identifiable CRSP returns sufficient to estimate market model parameters. Event study results are presented in Table 7-2. Consistent with prior studies of straight bond announcements, they have an statistically insignificant two day average prediction error of -0.12% (z=-0.62) with 47.7% of the prediction errors positive. The uncontaminated subsample of 207 generates an APE of 0.01% (z=-0.11), also not statistically significant with 46.9% of the prediction errors positive. Thus, contamination has a slightly negative, but insignificant effect on bond announcements. The contaminated sample (clean observations omitted) has an APE of -0.34% (-0.92), also not statistically significant.

Disaggregating the uncontaminated sample by firm size reveals that, like bank debt announcements, the APE is larger for small firms 0.80% (z=1.13, n=44), but not statistically significant or statistically different from the large firm APE of -0.21% (z=-0.72, n=163). Furthermore, a means test implies equality of means with a t = 1.320. Thus, there is no support of a firm size effect for bond announcements. Disaggregating by bond characteristics yields only one subsample with a statistically significant APE. Fifteen zero coupon bond announcements

have an APE of -1.36% (z=-1.76), statistically significant at the .10 level. Thirty-five issues with sinking fund provisions have an APE of 0.78% (z=1.10). Twenty-five subordinated bond issues generate an APE of -0.12% (z=-0.41), with 36% of the prediction errors positive. Twelve announcements are of senior bond issues generating an APE of -0.15% (z=0.32).

Only one sample classified by purpose has a statistically significant APE. Four bond announcements for acquisitions produce a statistically negative APE of -2.58% (z=-3.12) with no positive prediction errors. Bond announcements with no specified purpose have an APE of 0.21% (z=0.60, n=45). Bond issues to repay debt (n=110) generate an APE of -0.03% (z=-0.40). The stated use is general purpose/working capital in 26 announcements generating an APE of 0.25% (z=0.89).

Two sample classifications based on firm characteristics produce statistically significant APEs. First, forty-one firms that had not paid recent dividends have an APE of 1.02% (z=1.93) with 58.5% of the prediction errors positive. Firms that paid recent dividends have an APE of -0.19% (z=-0.92, n=165).

Second, the sample dichotimized by relative bank debt displays statistically significant APEs for both above and below median groups. Forty-three firms with below median Compustat bank debt have an APE of 0.86% (z=1.78), statistically significant at the .10 level. Forty-four below median firms have an APE of -1.00% (z=-2.16), statistically significant. The APEs are statistically different with a t=3.08. Moreover, the below median sample has 67.4% positive prediction errors; 34.1% the above median sample has positive prediction errors. Thus,

bond issues are positive signals for firms with relatively low bank debt, negative signals for firms with relatively high bank debt.

Firms employing Big-Eight auditors have an APE of 0.00% (z=-0.25, n=196). Ten firms that employ non-Big-Eight auditors have an APE of 1.05% (z=1.26). The difference is not statistically significant, but the pattern appears consistent with an auditor quality hypothesis.

The percentage of outstanding common shares held by institutions could not be found for 13 firms with an APE of 1.39% (z=1.06). The median institutional holdings for firms in the bond sample that have available data is 25.83%. Firms with above median institutional holdings have an APE of 0.04% (z=0.65, n=97). Firms with below median institutional holdings have an APE of -0.22% (z=-1.20). The pattern of the APEs is consistent with an institutional monitoring hypothesis, but the means are not statistically different.

For two firms the *number* of institutional investors could not be found; they have an APE of -5.28% (z=1.79). The median number of institutional investors for firms with available data is 89. Firms with below median number of institutional investors (n=101) have an APE of 0.17% (z=-0.08). Firms with above median number of institutional investor have an APE of -0.05% (z=0.17). Again the pattern is consistent with hypotheses but no significant difference exists.

Insider holdings could not be found in Value Line for 111 firms with an APE of -0.19% (z=-1.08). Median insider holdings for the other firms in the sample is 4.0%. Forty-seven firms with below median insider holdings have an APE of -0.07% (z=0.06). Above median insider holding firms have an APE of 0.52% (z=1.32). These results display a

pattern opposite of bank debt announcements but have no significant differences. It might be argued that the relatively greater incentive to expropriate bondholder wealth by managers of firms with larger insider holdings generates more positive announcement effects for bond issues. Rational bondholders of these firms should expect this, though, and force equityholders to bear expected costs.

Median long-term leverage, calculated from bond sample firms with available data, is 0.490276 (book value of long-term debt/market value of equity). Below median leverage firms have an APE of 0.15% (z=0.83, n=102, 51.0% positive) while above median leverage firms have an APE of -0.04% (z=-0.71, n=102, 44.1% positive). Three firms with unknown leverage have an APE of -3.60% (z=-1.66). Again, the pattern is opposite from bank debt results, but no significant differences exist.

D. Regression Results

No specific hypotheses are developed about cross-sectional behavior of bond announcement prediction errors. Nevertheless, an examination is necessary to compare and contrast cross-sectional behavior with bank debt announcements. Results are reported in Table 7-3.

Equation (1) of Table 7-3 shows that bond announcement prediction errors are negatively, but not significantly, related to firm size. The coefficient of firm size is -.0015 (t=-1.09). Thus, the pattern of results is similar to bank debt announcements, but statistical significance does not obtain. Furthermore, the intercept is not statistically significant, .0192 (t=1.11).

Equation (2) adds variables related to the relative amount of new financing. A dummy equal to one if the amount is known is negative in sign, but not statistically significant. The coefficient of relative size is .0013 (t=0.19), not statistically different from zero. Thus, unlike bank debt announcements, bond announcement excess returns are not statistically related to firm size or relative size of debt issue.

Equation (3) adds monitoring and control variables to the regression equation. Three coefficients obtain statistical significance. A dummy equal to unity for sinking fund issues is statistically positive at the .10 level: .0131 (t=1.81). A dummy equal to unity for firms that paid a recent dividend is statistically negative: -.0135 (t=-2.14) at the .05 level. This result combined with event study results classified by dividend history suggests that firms paying dividends and raising capital externally are punished by the capital market with negative share price responses.

Relative existing bank debt is negatively related to bond announcement effects as evidenced by a coefficient of -.0532 (t=-3.05), statistically significant at the .01 level. This result is particularly interesting because a similar result obtained for large firms announcing bank debt issues. It could be argued that bank lending does not entail asset services for large firms so that bank financing for these firms is similar to public financing, thus, generating similar effects. While the results are similar across large firm bank and bond samples, they are still puzzling. Bond announcement prediction errors are unrelated to other security and firm-specific variables.

Equation (4) adds two variables related to institutional holdings. Again, these are added separately because firm size and institutional holdings are correlated creating multicollinearity problems. The coefficient of natural log of institutional holdings is -.0041 (t=-1.87), statistically significant at the .10 level. Thus, firms with larger institutional holdings experience smaller or negative returns upon announcement of bond issues.

The significance of coefficients of relative bank debt and sinking fund provisions remains. The coefficient for relative existing bank debt is -.0575 (t=-3.36), statistically significant at the .01 level. The coefficient of the dummy for issues with sinking fund provisions is .0154 (t=2.15), statistically significant at the .05 level.

The F statistic for this regression is 2.238 indicating that the null of all regression coefficients equal to zero can be rejected at the .01 level. Moreover, the adjusted R^2 is .0985.

Thus, bond announcement prediction errors display cross-sectional patterns different from that of bank debt announcements. This suggests that the capital market is able to distinguish between the two and regards bank debt as providing valuable assets services for small firms.

Table 7-1: Descriptive statistics for firm and security specific characteristics for 205 firms announcing bond issues

Variable	Mean	Median	Minimum	Maximum	N^-0
Issue amount ($millions)	122.17	75	5	5000	194
Issue amount/ mkt. value of eq.	.3077	.1602	.0137	3.95	193
Mkt. value of eq. ($millions)	1268.35	445.54	4.29	36730.53	205
Maturity (yrs)	18.85	20	4	50	183
Long term debt/ mkt. value of eq.	.6878	.4903	.0075	8.41	201
Insider hlgs (%)	10.11	4	0.1	61	96
Instit. hldgs (%)	25.73	25.83	.0926	65.75	194
# institutional investors	135.067	89	1	895	195
Relative bank debt	.1153	.0366	.0015	1.15	87

Table 7-2: Two day average prediction errors for bond announcements for various groups

Group	%APE(0,+1)	Z-stat	N	% Positive
By contamination:				
Full Sample	-0.12	-0.62	310	47.7
Uncontaminated announcements	0.01	-0.11	207	46.9
Contaminated announcements	-0.34	-0.92	103	49.4
By firm size:				
Small firms	0.80	1.13	44	52.3
Large firms	-0.21	-0.72	163	45.4
By security characteristics:				
Sinking fund	0.78	1.10	35	51.4
No sinking fund	-0.15	-0.62	172	45.9
Subordinated	-0.12	-0.41	25	36.0
Not subordinated	0.02	0.03	182	48.4
Senior	-0.15	0.32	12	50.0
Not senior	0.01	-0.20	195	46.7
Zero or OID	-1.36	-1.76	15	26.7
Coupon bond	0.11	0.37	192	48.4
By purpose:				
Not stated	0.21	0.60	45	51.1
Repay debt	-0.03	-0.40	110	45.5
Acquisitions	-2.58	-3.12	4	0.0
General purpose/ Working capital	0.25	0.89	26	50.0
By firm characteristics:				
Paid recent dividend	-0.19	-0.92	165	44.2
Not paid dividend	1.02	1.93	41	58.5

(cont'd)

Table 7-2 (cont'd): Two day average prediction errors bond announcements for various groups

Group	%APE(0,+1)	Z-stat	N	% Positive
By firm characteristics (cont'd):				
Big-Eight auditor	0.00	-0.25	196	46.9
Non-Big-Eight	1.05	1.26	10	50.0
< med. inst. hldgs	-0.22	-1.20	97	41.2
> med. inst. hldgs	0.04	0.65	97	49.5
Unknown inst. hldgs	1.39	1.06	13	69.2
Big-Eight auditor	0.00	-0.25	196	46.9
Non-Big-Eight	1.05	1.26	10	50.0
< med. inst. hldgs	-0.22	-1.20	97	41.2
> med. inst. hldgs	0.04	0.65	97	49.5
Unknown inst. hldgs	1.39	1.06	13	69.2
< med. insider hldgs	-0.07	0.06	47	55.3
> med. insider hldgs	0.52	1.32	49	49.0
Unknown insider hldgs	-0.19	-1.08	111	42.3
< med. # inst. hldrs	0.17	-0.08	101	44.6
> med. # inst. hldrs	-0.05	0.17	104	50.0
Unknown # inst. hldrs	-5.28	-1.79	2	0.0
< med. leverage	0.15	0.83	102	51.0
> med. leverage	-0.04	-0.71	102	44.1
Unknown leverage	-3.60	-1.66	3	0.0
< med. relative bank debt	0.86*	1.78	43	67.4
> med. relative bank debt	-1.00*	-2.16	44	34.1
Unknown relative bank debt	0.07	0.09	120	44.2

Median institutional holdings (% of total shares outstanding) = 25.83%
Median insider holdings (% of total shares outstanding) = 4%
Median # of institutional investors = 89
Median leverage (long term debt/market value of equity) = .490276
*Means test t = 3.084

Table 7-3: Weighted LS regressions of 205 clean bond issue announcement two-day prediction errors on various monitoring and control variables.

Equation	(1)	(2)	(3)	(4)
Intercept	.0192	.0271	.0339	.0171
	(1.11)	(1.08)	(1.34)	(0.54)
ln(firm size)	-.0015	-.0012	-.0014	.0016
	(-1.09)	(-0.65)	(-0.63)	(0.63)
Relative size		.0013	-.0004	.0022
		(0.19)	(-0.05)	(0.33)
Amount known		-.0126	-.0197	-.0220
		(-1.06)	(-1.42)	(-1.60)
Leverage			.0020	.0018
			(0.68)	(0.65)
Sinking fund provision			.0131	.0154*
			(1.81)	(2.15)
Subordinated debt			.0045	.0055
			(0.63)	(0.77)
Senior debt			-.0160	-.0172
			(-1.50)	(-1.64)
Zero coupon or OID			-.0114	-.0098
			(-1.11)	(-0.95)
ln(maturity)			.0012	-.0006
			(0.21)	(-0.10)
Maturity information			-.0011	-.0006
			(-0.06)	(-0.04)
Big-eight auditor			-.0036	-.0018
			(-0.32)	(-0.16)
Recent dividend			-.0135*	-.0096
			(-2.14)	(-1.49)
ln(insider holdings)			.0032	.0040
			(1.10)	(1.38)
Insider hlgs available			.0096	.0092
			(1.21)	(1.17)
Relative bank debt			-.0532**	-.0575**
			(-3.08)	(-3.36)
Bank debt known			.0081	.0067
			(1.36)	(1.13)
ln(# institutional holders)				-.0041
				(-1.87)
Institutional investors available				-.0127
				(-1.33)
Adjusted R^2	.0009	-.0035	.0729	.0985
F	1.183	0.766	2.003**	2.238**

Chapter 8: Summary and Conclusions

This thesis examines equity share price responses to announcements of bank credit agreements and bond issues. Three important questions are addressed. First, we present a test of the delegated monitoring hypothesis, or asset services theory of the banking firm. The hypothesis is that banks specialize in private information collection and processing which allows them to fulfill the role of a delegated monitor. Private information that either cannot be revealed to public capital markets or is too costly to be gathered by other market participants can be collected and processed efficiently by banks. Efficient and effective monitoring by banks reduces agency costs for other claimholders thereby benefitting firm shareholders.

We argue that if wealth changes associated with announcements of bank debt derive from agency cost savings, then a wealth change should depend on how well a firm is currently monitored. Specifically, firms that are less well monitored are hypothesized to benefit relatively more from bank monitoring as evidenced by large share price responses. The level of current monitoring to which a firm is subject is measured by variables that proxy the levels of agency cost control devices. Using event study and regression methodologies, we investigate whether share price responses to bank debt announcements are cross-sectionally related to monitoring variables.

We find that average two day prediction errors associated with announcements of bank debt are significantly positive only for small

firms (below CRSP median market value of equity for the year of the announcement). The uncontaminated sample of large firms (above CRSP median size), and virtually all sub-classifications, have statistically insignificant average prediction errors. Furthermore, prediction errors associated with bank debt announcements are cross sectionally related to the natural log of firm size for the uncontaminated sample. The coefficient of natural log of firm size is negative and significant at the .01 level. Dichotimizing regression samples into large and small firms reveals that the relation obtains only for small firms.

The results suggest that bank monitoring is valuable only for small firms, a finding consistent with arguments by Fama (1985) and Diamond (1985) in the asset services banking firm literature. The results are also consistent with theoretical and empirical findings in the accounting literature focusing on the differential information sets available for large and small firms. Thus, the delegated monitoring hypothesis is supported by the results. Bank lending entails valuable asset services for firms that likely have greater asymmetric information problems. After controlling for firm size, share price responses are unrelated to other monitoring variables suggesting that the measure of firm size captures most of the potential benefits of bank monitoring.

The second important question the thesis addresses concerns Lummer and McConnell's (1989) finding of insignificant average share price responses to initiations of bank debt and statistically positive average responses to renewals. This result is anomalous if rational investors form unbiased expectations about future events. Thus, we investigate the robustness of this result to the inclusion of relatively more small

firms (NASDAQ firms) in the sample. The delegated monitoring hypothesis and arguments in the accounting literature regarding firm size suggest that firm size may be an important determinant of the value of firm-bank relationships.

We find that bank debt initiations generate significantly positive average two day prediction errors for small firms. This study differs from LM by including NASDAQ firms, typically much smaller in market value, so that this sample is richer in small firms. Furthermore, LM do not disaggregate their sample by firm size. Given the importance of firm size to the market response to bank debt announcements, it is likely that LM's sample did not contain enough small firms. The APE for renewals is positive and not statistically different from the APE for initiations, suggesting that bank debt renewals provide valuable periodic review and monitoring services.

The third important question is whether share price responses to bond announcements exhibit cross-sectional behavior similar to bank debt announcements. Theoretical arguments suggest that bondholders will not undertake monitoring activities similar to banks. We argue that monitoring by bond trustees is less intensive and relies on more easily accessible information. Consistent with existing studies, we find insignificant average share price responses to announcements of straight bonds. Furthermore, we find that bond announcement prediction errors are unrelated to firm size and other monitoring variables. An exception is a statistically negative relationship with relative existing bank debt. This result obtains with both event study and regression methodologies. Another important result emerges from this study.

Results suggest that the omission of announcements carried only on the newswire may create a selection bias. The uncontaminated sample of bank debt announcements carried only on the newswire generate an insignificant average two day prediction error. The sample of WSJ announcements has a statistically significant two day APE. Moreover, the APE of the newswire sample is statistically different from the APE for the WSJ sample. Even the sample of small firm newswire announcements has a statistically insignificant APE. The newswire sample is collected for the years 1984-1986. Results indicate that more than half of the uncontaminated announcements of bank debt initiations and renewals for the time period are carried by the newswire but not the WSJ.

This study also extends the literature by presenting a comprehensive event study analysis of the types of contaminating information that accompany information about bank debt. Bank debt information is accompanied by a wide variety of other announcements. Results are consistent with a hypothesis that firm managers systematically attempt to arrange announcements of initiations and renewals of bank debt when negative information must be announced.

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"Market Pricing of the Contractual Characteristics of Commercial Bank Preferred Stock," at the 1988 Southern Finance Association Meeting

Organizations

Financial Management Association	1988-
Southern Finance Association	1988-
Midwest Finance Association	1991-

DOCTORAL EXAMINATION AND DISSERTATION REPORT

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Major Field: Business Administration (Finance)

Title of Dissertation: Valuation of Firm-Bank Relationships: A Test of Delegated Monitoring Hypothesis

Approved:

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EXAMINING COMMITTEE:

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