Are Bank Loans Special? Evidence on the Post-Announcement Performance of Bank Borrowers

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ABSTRACT

Unlike equity offerings or public debt offerings, bank loan financing elicits a significantly positive announcement return, which has led financial economists to characterize bank loans as "special" or somehow different from other types of external finance. Here, we find that firms announcing bank loan financing suffer negative abnormal stock returns during the three-year post-announcement period. In the long run, therefore, it appears that bank loans are no different from seasoned equity offerings or public debt issuance. We also find that bank borrowers had operating performance below their peers' a year before their loan announcement, and that their performance does not improve in the subsequent three years. Finally, we document a reduction in earnings transparency following bank loan announcements. These findings are inconsistent with the notion that bank loans mitigate asymmetric information problems of the borrower.

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I. Introduction

Myers and Majluf [1984] argue that a firm's decision to issue external securities instead of using internally generated funds may indicate that insiders consider the firm to be overvalued. Asymmetrically informed outside investors will then make valuation inferences based on how insiders choose to raise capital. The degree of inferred overvaluation increases in the sensitivity of the offered security's value to the asymmetric information. For example, an equity issue signals greater overvaluation than a bond issue, and convertible bonds should reflect more negative information than straight bonds. Short-term event studies largely support this "lemons" model of security valuation. The announcement of a seasoned equity offering (SEO) results in an average stock price decline of 2 – 3% (Asquith and Mullins [1986], Masulis and Korwar [1986], Bayless and Chaplinksy [1996]), while announcements of public bond issues generate zero or slightly negative equity returns (Eckbo [1986], Jung, Kim, and Stulz [1996], Howton, Howton, and Perfect [1998]).[1]

One form of external finance has been considered special: loans from commercial banks. Unlike the announcement effects of public security issues, bank loan announcements generate significantly positive abnormal returns for the borrower (Mikkelson and Partch [1986], James [1987], Lummer and McConnell [1989], and many others). A large body of theoretical work compares the benefits of private debt (e.g. bank loans) to arms-length (public) borrowing. Institutional lenders are generally viewed as insiders, who may enhance a borrowing firm's value by reducing information asymmetries or by monitoring firm performance (Bernanke [1983], Fama [1985], Berlin and Loeys [1988], Kwan and Carleton [1998]). The combination of private lending's theoretical benefits and the empirical fact that bank loans elicit positive announcement effects has led to the labeling of private loans as "special" or "unique" among a firm's financing alternatives (Boot [2000] and Ongena and Smith [2000]).

[1] Ritter [2002, Table 5] summarizes many other studies of the impact of financing decisions on firm equity value.

Although the short-run valuation effects of security issuances are consistent with the existing theory of asymmetrically informed outside investors, recent work on the long-run performance following security issuance has raised doubts about making inferences based on event study outcomes. Numerous studies document substantial abnormal returns during the 3–5 years following firm security issuances. Specifically, the issuing firms' share prices underperform the relevant benchmarks by between 4% and 10% per year. At face value, these results have grave implications for the notion of market efficiency: they imply that market investors initially under-react to the implications of public security issuances.

While long-term performance following *public* security issuance has been thoroughly examined, the long-run performance of firms following private debt agreements is relatively unexplored. Yet private debt constitutes a very important source of credit for the economy. Bank loans alone provide approximately 30% of all U.S. nonfinancial corporations' outstanding liabilities.[2] In bank-centered financial systems, this proportion is surely much higher. Moreover, the size of a typical loan agreement indicates the potential for a dramatic effect on firm performance. The mean (median) ratio of loan size to borrower's market value of equity is 86.9% (51.1%) in our sample, which comes from the years 1980-1989. By comparison, Spiess and Affleck-Graves [1999] report that the mean (median) ratio of bond issue size to the market value of equity is only 53.64% (28.86%) during their 1975-1989 sample period.

This paper re-examines the uniqueness of bank loans from a long-run perspective. Specifically, we examine long-run stock returns, operating performance, and earnings announcement abnormal returns over the three years following the loan announcement. In contrast to their positive announcement effects, we find that firms announcing private lending agreements substantially underperform over the long run, much like firms issuing SEOs and

[2] Data is from Federal Reserve *Bulletin*, table 1.59 and is for the year 1996 (the first year bank loan data is reported). For comparison, corporate bonds accounted for 47% of corporate credit in 1996. Note that nonbank loans are not included in these figures, nor are un-drawn lines of credit. Private lending therefore account for far more than 30% of all U.S. corporate credit.

public debt. Thus, from a post-event performance perspective, bank loans appear quite similar to other forms of external finance.

We first examine the borrower's long-run stock return performance following a bank loan announcement. Measurement of long-run abnormal returns has been a contentious topic in the finance literature. We therefore evaluate post-loan performance using a variety of techniques, including buy and hold abnormal returns (BHARs), Fama-French "alphas", and calendar-time abnormal returns (CTARs). Although the estimated underperformance varies across measurement techniques, we always find significant underperformance in the wake of a bank loan announcement. In sum, long run return underperformance for bank borrowers is similar to that following SEOs and public debt issuance.

All measures of long-run abnormal return suffer from the "joint hypothesis" problem: if the model of "normal" returns is even slightly wrong, the effects can compound into large cumulative abnormal returns. Previous researchers have therefore used short-term event study methodology to evaluate information intensive periods within the long-run window (Jegadeesh [2000]). We examine the market reaction to quarterly earnings announcements over the three-year post-announcement period. To the extent that the market learns from earnings news, we would expect to see evidence of the long-run performance in the short-term event window around earnings announcements. We find borrowers experience a mean abnormal return of –0.32% per quarterly earnings announcement, significant at the 1 percent level. By contrast, non-borrowing peer firms experience an insignificant 0.03% per quarterly earnings announcement over the same 3-year period. Our evidence is in line with Brous, Datar, and Kini [2001] and Denis and Sarin [2001] who find that SEO firms experience significantly negative abnormal returns surrounding subsequent earnings announcements. Again, our evidence suggests private lending agreements are similar to SEOs from a post-announcement perspective.

Finally, we evaluate the operating performance of our sample borrowers in the post-loan period. We find that bank borrowers were performing poorly in the year before announcing their

bank loan, and this poor performance (significantly worse than their peers') continues for three years after the loan announcement. Loughran and Ritter [1997] also document negative operating performance following SEOs, again suggesting strong similarities between loan announcements and SEOs.

So where does this post-performance evidence leave us? If bank loans are truly "special" then more research is needed to ascertain the source of this "specialness." We take an initial step in this direction, by examining one oft-cited justification for the positive announcement reaction; banks help solve asymmetric information problems for borrowers. Following Dierkens [1991] and Krishnaswami and Subramaniam [1999], we measure information asymmetry as the standard deviation of a time series of abnormal returns to quarterly earnings announcements. If banks mitigate asymmetric information problems, we expect less volatile price reactions to earnings announcements in the post loan era. In fact, we find the opposite. Earnings announcement returns are significantly more volatile post loan than pre loan. Moreover, the standard deviation of the price reactions to earnings announcements by non-borrowing peer firms is always smaller than that for borrowers (both pre and post loan). We conclude that bank loans do not reduce information asymmetries.

Our results also contribute to the general literature on market efficiency. Prior long-run returns studies essentially document underreaction to corporate events. In particular, there is scant evidence of reversal from significant announcement returns in one direction to significant long-run returns in the opposite direction.[3] Our results indicate strong evidence of reversal. Not only do bank loans exhibit positive average announcement effects followed by negative average long-run returns, but the subset of bank loans with strictly positive announcement returns is also followed by significantly negative long-run returns. Apparently, the market is not only initially

[3]Hertzel, Lemmon, Linck and Rees [2002] find significantly negative stock return performance following private placements, suggesting a reversal. Krishnamurthy, Spindt, Subramaniam and Woidtke [2003] however, find that the disparity between positive announcement and negative long-run returns disappears when they control for financial distress and investor identity. In other words, there is no reversal found within sub-samples.

wrong about the magnitude of the loan's effect on firm value, it's wrong about the direction of the effect in many cases as well.

The remainder of this paper is organized as follows. Section II discusses the methodological issues associated with long-run performance measurement. Section III describes our data sources. Our results are presented in Sections IV through VI, and the final Section concludes.

II. Measuring Long-run Equity Returns

The literature on long-run stock performance following corporate events is extensive, largely because accurately measuring "normal" returns over long periods of time has proven to be extremely challenging. The literature includes two basic approaches to this problem. First, one can identify a comparable, non-borrowing firm for each loan announcer and follow the pair's relative performance over time. Second, one can use an asset pricing model to predict the announcing firm's normal returns, and examine the differences between the event sample's predicted and actual returns. Both approaches suffer some shortcomings, and we use a combination of methods to assure that our results are robust.

Early studies of long-run performance simply extend event study techniques to a longer horizon, comparing the announcing firms' returns to those of a reference portfolio (such as the value-weighted market). Kothari and Warner's [1997] simulation evidence suggests that both the size and power of these parametric tests are over-stated. A major problem arises because abnormal returns computed by subtracting benchmark *portfolio* returns from an *individual* security's returns tend to be substantially skewed. Barber and Lyon [1997] reiterate the importance of simple abnormal returns' skewness, and describe additional potential biases that may arise from new listings and market portfolio re-balancings.

A. Buy-and-Hold Abnormal Returns

These statistical problems can be ameliorated by using peer-adjusted, buy-and-hold abnormal returns (BHARs) to measure long-run performance effects, as in Ritter [1991]. Barber and Lyon [1997] report that peer firms with similar market capitalization and equity's book-to-market ratio perform well in randomized samples.

For each loan-announcing firm, we select a peer firm that resembles the sample firm except for the announcement of loan financing. We then compute each firm's subsequent holding period return as:

$$HPR_i = \left(\prod_{t=1}^{T_i} (1 + R_{it}) - 1 \right) x\ 100\%$$

where R_{it} is the ith firm's stock return on the tth day, and

T_i is the number of trading days in the 3-year period following the loan announcement.

After calculating HPR for each sample firm and for its matching firm, we evaluate the mean and median holding period return *differences* (BHARs)

$$BHAR_i = HPR_i^{Event} - HPR_i^{Peer}$$

to determine if loan-announcing firms exhibit distinctive performance.[4] Lyon, Barber and Tsai [1999] point out that BHAR test statistics may be biased if peer firms are not matched on the basis of all relevant characteristics (such as industry or pre-event returns). To correct for clustering on the basis of non-matched characteristics, they suggest using a variety of peer choice criteria, which we do. (See the "Data" section below.)

[4] BHARs measure an investor's experience if s/he were to try to profit from expected underperformance (Barber and Lyon [1997]).

B. Calendar Time Abnormal Returns

Another type of clustering occurs if firms take similar actions at the same time (e.g., merger waves or the issuance of new equity following a market price runup).[5] Each sample firm's BHAR then tends to be correlated with other BHARs, thereby overstating the significance of the resulting test statistics. To control for the calendar time event-clustering problem, Mitchell and Stafford [2000] suggest creating a sequence of "calendar time portfolios." Each month, the researcher forms a portfolio containing all the firms that announced the event within the last (say) three years. These calendar time portfolio returns may then be evaluated either of two ways. First, compare the monthly portfolio returns against the returns on a portfolio of comparable firms (Mitchell and Stafford [2000]).[6] Second, the researcher can regress the calendar time portfolio's time series of (excess) returns on Fama and French's [1993] three factors. The intercept from this regression then measures abnormal performance.

To implement several CTAR tests, we begin by forming a portfolio containing all firms that announced a loan agreement within the past 36 months, and calculate the portfolio's return in that month. We then regress a time series of these monthly portfolio returns, net of the risk free rate, on the three Fama-French factors:

$$(R_{pt} - R_{ft}) = \alpha + \beta(R_{mt} - R_{ft}) + s\mathrm{SMB}_t + h\mathrm{HML}_t + \varepsilon_t \qquad (1)$$

where R_{pt} is the return on the portfolio of sample firms in month t;

R_{ft} is the 3-month T-bill yield in month t;

R_{mt} is the return on the value-weighted index of NYSE, Amex, and NASDAQ stocks in month t;

[5] Similar calendar time event occurrence can be driven by either of two factors. First, different firms may all tend to experience the event around the same time (for example firms like to issue seasoned equity following a long price run-up). Alternatively, the same firm may have multiple events in close time proximity. The second occurrence therefore falls during the long-run return calculation window that followed the first occurrence. According to Lyon, Barber and Tsai [1999], the first situation causes little trouble for peer-adjusted returns, but multiple firm events can have more serious consequences.

[6] This approach is not dissimilar from the one advocated by Vijh [1999], which we also employ below.

SMB_t is the return on small firms minus the return on large firms in month *t*; and

HML_t is the return on high book-to-market stocks minus the return on low book-to-market stocks in month t.

A significant intercept term in (1) implies that abnormal returns are associated with the event analyzed.

Fama [1998, page 299] and Mitchell and Stafford [2000, pages 324-5] argue that the Fama-French three-factor model performs especially poorly for small firms and high book-to-market firms. Loughran and Ritter [1995] note that if the abnormal returns indicated by the Fama-French model reflect a bad model, significant intercept terms should also occur for the style-matched peer firms. We therefore estimate Fama-French regressions for the portfolio of peer firm returns, and compare the intercept (α) to that from the event firms' regression.

Another concern with the Fama-French regression approach is its assumption of parameter stability over the entire estimation window (Mitchell and Stafford [2000]). We address this possible problem by implementing Vijh's [1999] methodology to compute calendar time abnormal returns (CTARs). Specifically, we first calculate the annual returns on the portfolio of loan-announcing firms by compounding monthly returns starting in January and ending in December of each year (for firms who had announced the loan within the last three years). We then subtract the annual returns on a similar portfolio of peers to obtain annual excess returns. We calculate a t-statistic for the average of these annual excess returns using the time series standard deviation of annual excess returns over 1980 – 1992.[7]

III. Data

We use the set of loan announcements collected in Billett, Flannery and Garfinkel [BFG, 1995]. The sample of loan announcements is collected using a keyword search of news stories

[7] We also perform the same analysis using monthly portfolio returns, with similar conclusions.

that identifies 1,468 announced loan agreements between nonfinancial borrowers and bank or nonbank lenders during the calendar years 1980 through 1989. We include in our sample all of these announcements for which the CRSP master file reports the announcing firm's equity market value at the preceding calendar yearend.[8] Our main sample includes 1,385 loan announcements from 1980-89.

The sample's summary statistics in Table 1 reveal several noteworthy points. First, loan agreements are significant external financing events: the average loan or commitment size is 86.9% of the firm's market value of equity. Second, loan announcers tend to be small firms: the median market value of equity for our sample of firms is $58.1 million compared to the NYSE listed firm median of $197 million over the 1980-89 period. Viewed another way, the mean (median) size decile (based on NYSE cuts) for our sample of firms is 3.09 (2) with more than two-fifths our sample belonging to decile 1.[9] Third, our average firm closely resembles the average Compustat firm (which tends to be small) in terms of average growth potential: the median sample firm's market to book assets ratio is 1.13, while the corresponding Compustat universe's median value is 1.12 over 1980 – 1989. The *mean* market-to-book asset ratios are a bit farther apart, with our sample mean equal to 1.53 and the Compustat mean equal to 1.71. Overall, univariate statistics are consistent with the traditional view that bank borrowers tend to be smaller firms with relatively valuable growth opportunities.[10]

Use of a sample comprised largely of small firms offers both benefits and costs. An obvious concern with this type of sample is that the expected returns to small, high-growth firms may be poorly described by available asset pricing models (Fama and French [1993], Fama

[8] BFG's concern with short-run announcement effects required them to impose additional requirements on their loan announcements, resulting in their "clean" sub-sample of 626 announcements with live share prices and no confounding events around the announcement date (e.g. merger discussions or new investment programs). Our long-term focus here permits us to use the entire announcement sample.

[9] Decile 1 is the smallest and decile 10 the largest. See also Panel C of Table 2.

[10] The minimum stock price of $0.06 in our sample raises the question whether low-priced firms drive our results. Although not reported in the tables, our results are unchanged when we omit firms with stock prices less than $5.

[1998]). This would potentially bias long-run performance assessments. We address this possibility by utilizing a variety of return measurements and several distinct criteria for identifying peer firms. On the other hand, small firms are generally thought to be subject to greater information problems. Since bank loan "specialness" is often attributed to banks' abilities to reduce information asymmetries, the sample offers an excellent opportunity to evaluate this claim.

A. Borrowing Events are not Clustered

Our sample characteristics also suggest we need not be concerned with another problem raised with long-run performance studies; event clustering. In particular, clustering (in time or within industries) may render the sample firms' abnormal returns cross-sectionally correlated. This would inflate the computed t-statistics for long-run returns (Lyon, Barber and Tsai [1999], Mitchell and Stafford [2000]). However, Table 2 indicates that our sample exhibits no strong "clustering" of loan announcements, either in terms of calendar time or industry. Panel A indicates that our sample is quite evenly distributed over the 1980s, unlike equity issues which cluster significantly in particular years (Mitchell and Stafford [2000]).

Panel B of Table 2 describes the distribution of loan announcements *by industry*, defined by the first digit of the borrower's SIC code. We use a Kolmogorov – Smirnov two-sample test to compare the cumulative distributions of one-digit SIC codes for our sample and the Compustat universe across the entire sample period (1980 through 1989), and on a year-by-year basis. The full sample period's test statistic does not reject the null of similar distributions of SIC codes for loan announcing firms and all Compustat firms over the 1980s (p=0.246). When we conduct our test for industry clustering on individual years, the null hypothesis is rejected (p-value = 0.078) for only one year (1989). (The next closest p-value to the 0.078 in 1989 is the 0.243 p-value in 1985.) Given ten separate tests (one for each year of the 1980s), it is not surprising that one of

the tests would reject the null at the 10% level. We conclude that our test statistics are unlikely to be substantially compromised by the effects of calendar or industry clustering.

B. Defining Peer Firms

The definition of "peer" firms is crucial in long-run performance measurement. We construct several alternative sets of peer firms, on the basis of alternative combinations of size, book-to-market ratio, industry (2-digit SIC code) and momentum. In all cases, we select the peer firm from the same trading venue as the event firm: NYSE/AMEX vs. NASDAQ. We describe the matching process in detail only for "style" based matches, but the other samples are generated analogously. Panel D of table 2 reports summary statistics illustrating how well peer firm characteristics match those of the event firm.

Style-matched peer firms must resemble their event counterparts in terms of size and book-to-market ratio. We first discard any sample firm for which Compustat reports non-positive book equity at the fiscal yearend preceding the loan announcement. For the remaining loan announcers, we follow Spiess and Affleck-Graves [1999] in identifying all other firms that trade on the same exchange whose equity market value lies within 10% of the sample firm's at the prior yearend.[11] The chosen peer has the smallest sum of the absolute percentage differences in size and book-to-market equity value, using data from the preceding year.

A cursory analysis of the summed absolute percentage differences in Panel D of table 2 reveals the precision of our matching algorithm. The mean (median) absolute difference in firm size is 2.9% (2.4%), and the corresponding measures for book/market are 7.1% (2.9%). The mean summed difference is 9.8% and the median is 5.7%. More than three-quarters of our

[11] The restrictions that firm book value be positive and that the peer be within 10% of the sample firm reduced our sample to 1,169 loan announcements. The 10% size proximity criterion addresses Barber and Lyon's [1997] finding that matched firm (peer) adjusted returns are misspecified when the event firm is very large. They attribute this to allowing peer firms to be within [70% to 130%] of the event firm's market cap. Very large event firms may have significantly smaller peer firms unless the size match criterion is tightened.

matches have summed differences below 10%. Similar matching statistics are reported in Panel D for alternative peer matching criteria. All matching criteria seem to lead to good matches (i.e. relatively close peer firm and event firm characteristics).

A peer-selection methodology must handle delistings that occur before the end of the performance measurement window. In about 20% of our style-matched pairs (231 out of 1,169), the peer firm is delisted before three years have passed. On these delisting dates, we switch the "peer" return series to that of the sample firm's second-closest matching firm (as of the event date). If an announcing firm's second peer was delisted, we continue the computations using its third-closest peer, and so forth. Conversely, a *sample* firm was delisted within three years of the loan announcement 241 times out of 1,169 observations (20.6%). In these cases, we terminate the computations for both firms in the pair.

Examining the reasons for either sample firm or peer firm delisting, we see that mergers were associated with 60.2% and 48.5% of delistings for peer and sample firms respectively. Also, 26.4% and 44.0% of peer and sample firm delistings were due to an exchange (NYSE/AMEX/NASDAQ) dropping the issue. Liquidations were rather infrequent, representing 2.6% and 1.66% of the peer and sample firm delistings. The remaining delistings (10.8% of peer firms and 5.8% of sample firms) involved exchanges for a different issue trading on NYSE, AMEX, or NASDAQ.

IV. Long-Run Return Results

A. BHAR Analysis

Table 3 compares loan-announcers' buy-and-hold abnormal returns to those of their peers. In Panel A, the first line reports that loan announcing firms underperformed their style-matched counterparts. Both the mean (–27.2%) and median (–25.8%) three-year BHARs are significantly negative, with 99% confidence. Moreover, we see that this underperformance is not

concentrated in any one of the three post-loan years. In all three years borrowers underperform style-matched peers by between 10 and 12 percent per year.

We also report BHARs based on three alternative matching criteria: 1) size alone, 2) SIC code and size, and 3) size and momentum. We find statistical and economically significant underperformance regardless of matching criteria. Despite bank loans' well-known positive announcement effect, they are associated with significant long-run underperformance. Indeed, loans seem to generate a more negative impact than public debt offerings: Spiess and Affleck-Graves [1999] report mean (median) BHAR of –14.3% (–18.7%) during the *five* years after a straight bond is issued, and their mean return does not differ significantly from zero. We conclude that from a peer-adjusted long-run return perspective, loan announcers are similar to SEO and public debt issuers in their future underperformance.

Panel B reports mean and median BHARs by size decile of the announcing firm (deciles are based on cutoffs from all firms on the NYSE). While the smallest eight size deciles exhibit double-digit mean and median underperformance, significance is limited to groups of firms with market cap below the median NYSE firm's – size deciles one through five. Panel C investigates whether significant underperformance by loan announcers is concentrated in a particular time period. It appears not. Either mean or median performance is significantly negative in every year except 1980, with most years indicating underperformance for both measures.

B. Calendar-Time Portfolio Analysis

We address the possible effects of calendar time event clustering in Tables 4 and 5. Table 4 reports estimation results from regressing the time series of monthly portfolios' excess returns on the three Fama-French factors. We report four sets of coefficient estimates, reflecting two ways to construct the monthly portfolio return (value- and equal-weighted), under both OLS and WLS estimation. (The WLS weight is the square root of the number of announcing firms in the

calendar-time portfolio.) The intercepts (α) from these regressions measure the average monthly abnormal return associated with the bank loan announcements.

Panel A of table 4 reports that our sample borrowing firms' estimated intercepts are all significantly negative. Value-weighting the borrowing firms' subsequent returns, yields an estimated monthly abnormal return of –0.49% using OLS or –0.36% using WLS estimation. That is, loan announcers underperform by an average of 4.2 – 5.7% annually over the following three years. The intercepts' t-statistics (–2.6 and –3.3) indicate that these abnormal returns differ from zero with 99% confidence. As predicted by Loughran and Ritter [2000], the equal-weighted intercepts (–0.84% and –0.95% per month) are somewhat larger than under value weighting, now implying annual abnormal returns of –9.6% (–10.8%) with t-statistics of –3.3 (–5.6) for the OLS (WLS) estimators.

If the negative intercept terms in Table 4 Panel A result from the three-factor model's inability to fit the type of firms in our borrowing sample, we should also find negative intercepts for the style-matched peer firms. Panel B presents the result of estimating the Fama-French regressions for calendar time portfolios of the style-matched peer firms. The intercept terms are always *positive* (though not always significant), consistent with the hypothesis that loan agreements themselves are associated with the poor performance manifested in Panel A.[12]

A cursory examination of the factor loadings on sample and peer firms in Panels A and B suggests different sensitivities to the FF factors between peer and loan announcing firms. We investigate whether differences in factor loadings account for the differential performance by subtracting the monthly portfolio return on style-matched peers from the contemporaneous sample firms' portfolio return, and regressing these differences on the three Fama-French factors. Once again, we present results for four distinct sets of peer firms. The intercept term in these

[12] We examine the robustness of this conclusion by estimating α's for the three alternative peer matching criteria: 1) size, 2) industry and size, and 3) size and momentum. In all three cases we find insignificant intercept firms for the peer firms. Overall it appears that the Fama-French model accounts well for the systematic components of stock returns for firms similar to our bank borrowers.

regressions measures a peer-adjusted monthly abnormal return to bank borrowers, controlling for the effects of systematic risk, size, book-to-market, and calendar clustering of events. The estimated intercepts in Panel C are all negative with 99% confidence, implying average annual underperformance on the order of 7% – 11%.[13] However, the coefficients on the size and book-to-market factors are all positive and nearly always significant. Despite the fact that the peer firms are matched on the basis of size and book-to-market, the sample firms' sensitivities to SMB and HML exceed those of the peer firms. The significant positive β coefficients for equal-weighted portfolios also indicate that sample firms may be more sensitive to the market. Taken together, the results suggest that differences in the factor sensitivities, while significant, do not drive the measured underperformance of bank loan announcers relative to peers firms.

The calendar time approach in Table 4 assumes that the Fama-French model's parameters remain unchanged during the sample period. Vijh [1999] provides an alternative way to control for calendar time clustering concerns without imposing this 13-year parameter constancy. Table 5 presents the estimated CTARs constructed as the difference between sample firms' monthly and annual[14] portfolio returns and the peers' portfolio returns. In addition to unweighted results, we again present weighted estimates that use the square root of the number of firms in the monthly portfolio to weight each month's returns.

The Table's first two lines present information about the CTARs based on style-matched (Size and B/M) peer firms. If we value-weight portfolio firms' returns, borrowing firms significantly underperform peers by 4.63% or 7.19% annually, depending on whether we weight by the number of firms per month in the portfolio (to control for heteroskedasticity). Both measures are significant with at least 95% confidence. Under equal weighting of portfolio firms' returns, annual underperformance of loan announcers averages 10.81%, significant with 99%

[13] We repeat the regressions from Panel C using the three alternative peer matching criteria: 1) size, 2) industry and size, and 3) size and momentum. We find significantly negative intercepts in all 12 regressions (three different peers with four regressions each).

[14] Annual portfolio returns are simply monthly portfolio returns compounded over the 12 months in a calendar year.

confidence, for both OLS and WLS estimates. All these estimates closely resemble the implied underperformance from Panel A of Table 4. We also report in Table 5 the estimates based on alternative peer definitions. We find similar levels of underperformance regardless of peer selection criteria.

In sum, Tables 3 – 5 indicate that firms announcing loan agreements underperform in the three years following the event. Given the fact that underperformance is implied by both BHAR and calendar time portfolio methodologies, we continue using the BHAR approach to investigate other possible explanations for borrowers' underperformance.[15]

C. Reversal of Announcement and Long-Run Return Results

Part of the puzzle of significant long-run returns is that they contradict the efficient markets hypothesis. Nevertheless, evidence to date suggests that the market usually under-reacts to the news. In other words, significant announcement returns do not reverse direction and show long-run returns that are significant in the opposite direction. If reversal were documented, this would indicate that the market was not only wrong about the initial magnitude of the event's effect, but also wrong about the expected direction of the effect on firm value.

Recent work by Hertzel, Lemmon, Linck and Rees [2002] argues that private placements are in fact associated with such reversals – positive announcement returns followed by significantly negative long-run returns. However, Krishnamurthy, Spindt, Subramaniam and Woidtke [2003] find results suggesting this may be an average effect and not a true reversal. Specifically, the sub-sample of private placements that exhibits negative long-run returns is comprised of placements to unaffiliated investors when the firm is not in financial distress. This same sub-sample does not exhibit positive announcement returns. Thus, it would appear that no

[15] Using BHARs simplifies our procedure to control for the effects of seasoned equity offerings in the Appendix.

robust evidence has yet been presented to indicate reversal between the announcement and long-run returns. We present the first such robust evidence here.

Overall, our sample exhibits significantly negative long-run returns (Table 3) and significant positive announcement returns (0.67%, similar to Billett, Flannery and Garfinkel [1995]), consistent with reversal. Moreover, when we sample on only those announcement returns that are positive, we continue to find that the long-run returns for this sub-sample are significantly negative (–24%) with 99% confidence.[16] We conclude that loan announcements are misinterpreted by the market, both in the magnitude of their effect on firm value and, in some cases, the direction of it. In other words, bank loans do not appear to be nearly so "special" as previously thought.

D. Cross-Sectional Analysis of Long-Run Returns

For the full sample of 1,385 loan announcements, we investigate whether long-run peer-adjusted performance is correlated with *ex ante* firm or loan characteristics, such as the relative loan size, whether the loan is new or a renewal, the lender's identity – proxied by a bank/non-bank indicator or the lender's credit quality, borrower systematic and total risk, borrower leverage and market-to-book (assets) ratio. While not reported in a table, cross-sectional regression models reveal no significant correlations. None of these variables is related to long-run borrower performance at any reasonable confidence level (90% or better). We cannot reject the hypothesis that borrowers' long-run performance is unrelated to either borrower, loan or lender features.

[16] Alternatively, the sample with long-run negative returns exhibits significantly positive announcement returns.

V. Negative Returns to Post-borrowing Earnings Announcements

As noted earlier, one way around the methodological concerns with measuring long-term returns is to use short-term event study methodology to measure returns around subsequent earnings events. The general argument is that if the negative long-run returns are due to changes in investor opinion about the companies' prospects, then we would expect to see negative stock price reactions at the earnings announcements that follow the event. Jegadeesh (2000), Brous, Datar, and Kini (2001), and Denis and Sarin (2001) examine announcement returns to quarterly earnings announcements following SEOs.

We measure earnings announcement price reactions using a standard market model methodology, with announcement window [-1, +1] (0 is the Compustat earnings date), and estimation window [-200, -51]. Abnormal returns are observed returns minus expected returns, measured as the fitted value from the market model. Panel A of Table 6 contains the results.

Sample firms show an average abnormal return of –0.36% per quarterly announcement, while the peer firms' average is 0.03%. On an annual basis (compounding the quarterly average effect), borrowers experience –1.4% abnormal returns per year around earnings announcements. These negative numbers are economically and statistically significant. The –1.4% explains about 14% of the total annualized negative BHAR reported in Panel A of Table 3 ($-0.014/[(1-0.272)^{1/3}-1]$). Model misspecification does not appear to cause the measured stock return underperformance of loan announcers over the long run.

We can also use *ex post* earnings announcement abnormal returns to address whether bank loans reduce borrowers' information asymmetries. If so, borrowers should become less opaque after establishing a bank relationship.[17] Dierkens [1991] and Krishnaswami and Subramaniam [1999] argue that this should lead to less volatile earnings announcement abnormal

[17] If their newly-announced loan replaces a prior loan, there may be no reduction in opacity, but there should likewise be no increase.

returns. We test this implication by comparing the time-series standard deviation of earnings announcement abnormal returns for borrowing firms pre and post loan.

For each firm we compute the standard deviation of abnormal returns to 1) the four quarterly earnings announcements preceding the loan, 2) the four quarterly earnings announcements following the loan, and the twelve announcements following the loan. In addition we compute the same measures for a sample of peer firms chosen based on size and book-to-market. The comparisons of pre- and post-loan standard deviations are based on cross-sectional means of the standard deviations. The results are presented in panel B of Table 6.

If banks mitigate asymmetric information problems, we expect less volatile price reactions to earnings announcements in the post loan era. In fact, we find the opposite. First, for the loan sample, the standard deviation of earnings announcement reactions over the four quarters following the loan is actually higher than pre-loan. This difference is significant with 95% confidence. Similarly, the loan sample has a greater standard deviation than their peers before and after the loan, again suggesting no improvement in firm transparency. Overall, the decline in earnings announcement transparency suggests that banks do not add value via this oft-discussed mechanism.

VI. Long-Run Operating Performance and Investment

Loughran and Ritter [1997] examine long-run peer-adjusted operating performance to buttress their results on long-run stock performance following equity offerings. We adopt a similar methodology and examine the operating performance and investing activity of our sample of borrowers. To measure operating performance we use the following ratios: operating income before depreciation to total assets, net income to sales, and net income to assets. To measure investment activity we use the ratio of capital expenditures plus R&D to assets. Given the large number of missing values of R&D on Compustat, perhaps due to misreporting, we assume R&D

equals zero when it is reported as missing. To make sure this is not influencing our results we also measure investing activity as the ratio of capital expenditures to total assets. After computing these ratios for our sample firms, we then subtract the corresponding ratio for a peer firm. The matching procedures are identical to those used in calculating long-term returns, described above. Results are presented in Table 7.

Panel A reports the median peer-adjusted ratios where the peers are chosen based on size and book-to-market. Panel B peers are chosen based on size and runup, and Panel C peers are chosen by matching on industry and size. Regardless of the matching procedure, the ratios tell the same story. The sample firms have poor operating performance. These results suggest that the negative long-term returns are due, at least in part, to poor operating performance. We also find that borrowers invest less than their peers both before and after the loan announcement.

VII. Summary and Conclusions

Like other securities issuances, private loan announcements appear to be associated with negative long-run subsequent performance. In terms of long-run stock returns, we document significant underperformance over the three years following the event, under a variety of methodologies. For example, the median buy-and-hold-abnormal-return (BHAR) over three years following a loan announcement is –26%, comparable to the median *five*-year BHAR of –31% reported for SEOs by Spiess and Affleck-Graves [1995]. Moreover, our three-year loan BHAR is more negative than the 19% median five-year underperformance following straight debt issuance (Spiess and Affleck-Graves [1999]). Although the best technique for measuring long-run stock returns remains controversial, our results are robust to numerous methodological approaches, and to a variety of sampling adjustments. These results call into question the unique status ascribed to private lending agreements in the literature on corporate financing.

We also examine the operating performance and the announcement effects to quarterly earnings in the post loan period. Both of these investigations suggest the long-run returns are due to poor performance. We conclude that underperformance following loan announcements is statistically reliable and economically substantial.

Given our question regarding bank loan uniqueness, we also speak to the hypothesis that banks reduce information asymmetries by examining the transparency of earnings. We compare the standard deviation of abnormal returns to borrower earnings announcements both pre and post loan, and to peer firms' earnings announcement returns. We find no evidence that earnings transparency increases following the loan – in fact it decreases – suggesting that reductions in information asymmetry are unlikely the driver of the positive announcement returns.

Our results reinforce earlier studies' implications that announcement returns can be misleading about the extent of financing effects on firm value. In fact, we are the first study to robustly document that the market is systematically wrong about the perceived direction of the event's effect on firm value going forward. It seems that completely investigating the wealth effects of firm-specific corporate events requires attention to long-run wealth effects as well as to announcement effects. Our results suggest that from a long-run perspective, bank loans are not special.

References

Asquith, Paul and David Mullins Jr., 1986, "Equity issues and offering dilution," *Journal of Financial Economics*, 15(1/2), pp. 61-89.

Barber, Brad and John Lyon, 1997, "Detecting long-run abnormal stock returns: The empirical power and specification of test statistics," *Journal of Financial Economics*, 43(3), pp. 341-372.

Barber, Brad, John Lyon and Chih-Ling Tsai, 1999, "Improved methods for tests of long-run abnormal stock returns," *The Journal of Finance*, 54(1), pp. 165-201.

Berlin, Mitchell, and Jan Loeys, 1988, "Bond covenants and delegated monitoring," *Journal of Finance*, 43(2), pp. 397-412.

Bernanke, B., 1983, "Nonmonetary effects of the financial crisis in propagation of the Great Depression," *American Economic Review*, 73(3), pp. 257-276.

Best, Ronald and Hang Zhang, 1993, "Alternative information sources and the information content of bank loans," *The Journal of Finance*, 48(4), pp. 1507-1522.

Billett, Matthew, Mark Flannery and Jon Garfinkel, 1995, "The effect of lender identity on a borrowing firm's equity return," *The Journal of Finance*, 50(2), pp. 699-718.

Boehme, Rodney and Sorin Sorescu, 2002, "The long-run performance following dividend initiations and resumptions: Underreaction or product of chance?", *The Journal of Finance*, 57(2), pp. 871-900.

Boot, Arnoud, 2000, "Relationship banking: What do we know?" *Journal of Financial Intermediation*, 9(1), pp. 7-25.

Brav, Alon, Christopher Geczy and Paul Gompers, 2000, "Is the abnormal return following equity issuances anomalous?" *Journal of Financial Economics*, 56, pp. 209-249.

Brous, P., V. Datar, and O. Kini. "Is the market optimistic about the future earnings of seasoned equity offering firms?" *Journal of Financial and Quantitative Analysis*, 36 (2001), 141-168.

Datta, Sudip, Mai Iskandar-Datta and Ajay Patel, 2000, "Some evidence on the uniqueness of initial public debt offerings," *The Journal of Finance,* 55(2), pp. 715-743.

Datta, Sudip, Mai Iskandar-Datta and Kartik Raman, 2000, "Debt structure adjustments and long-run stock price performance," Bentley College working paper.

Denis, D., and A. Sarin. "Is the market surprised by the poor earnings realizations following seasoned equity offerings?" *Journal of Financial and Quantitative Analysis*, 36, 169-193.

Dierkens, N., 1991, "Information asymmetry and equity issues," *Journal of Financial and Quantitative Analysis*, 26, pp. 181-199.

Eckbo, Espen, "Valuation effects of corporate debt offerings," *Journal of Financial Economics*, 15(1/2), pp. 119-152:

Fama, Eugene, 1985, "What's different about banks?" *Journal of Monetary Economics*, 15, pp. 29-39.

Fama, Eugene, 1998, "Market efficiency, long-term returns, and behavioral finance" *Journal of Financial Economics*, 49, pp. 283-306.

Fama, Eugene and Ken French, 1993, "Common risk factors in the returns on stocks and bonds", *Journal of Financial Economics*, 33, pp. 3-56.

Fama, Eugene, 1998, "Market efficiency, long-term return, and behavioral finance," *Journal of Financial Economics*, 49, pp. 283-306.

Hertzel, Michael, Michael Lemmon, James Linck and Lynn Rees, 2002, "Long-run performance following private placements of equity," *The Journal of Finance*, 57(6), pp. 2595-2617.

Hertzel, Michael, and Richard Smith, 1993, "Market discounts and shareholder gains for placing equity privately," *The Journal of Finance*, 48(2), pp. 459-485.

Ikenberry, D., J. Lakonishok, and T. Vermaelen, 1995, "Market underreaction to open market share repurchases," *Journal of Financial Economics*, 39(2/3), pp. 181-208.

Jegadeesh, N. "Long-term performance of seasoned equity offerings: Benchmark errors and biases in expectations." *Financial Management*, 29 (2000), 5-30.

James, Christopher, 1987, "Some evidence on the uniqueness of bank loans," *Journal of Financial Economics*, 19(2), pp. 217-236.

Kothari, S.P. and Jerold Warner, 1997, "Measuring long-horizon security price performance," *Journal of Financial Economics*, 43, pp. 301-340.

Krishnamurthy, S., P. Spindt, V. Subramaniam, and T. Woidtke, 2003, "Does investor identity matter in equity issues: Evidence from private placements," forthcoming *Journal of Financial Intermediation*.

Kwan, Simon, and Willard Carleton, "Financial contracting and the choice between private placement and publicly offered bonds," Federal Reserve Bank of San Francisco working paper (March 1998).

Lee, Inmoo, Loughran, Tim, 1998, "Performance Following Convertible Bond Issuance," *Journal of Corporate Finance*, 4, pp. 185-207.

Loughran, Tim, 1993, "NYSE versus NASDAQ returns: Market microstructure or the poor performance of IPOs," *Journal of Financial Economics*, 33(2), pp. 241-260.

Loughran, Tim and Jay Ritter, 1995, "The new issues puzzle," *The Journal of Finance*, 50(1), pp. 23-51

Loughran, Tim and Jay Ritter, 1997, "The operating performance of firms conducting seasoned equity offerings," *The Journal of Finance*, 52(5), pp. 1823-1850.

Loughran, Tim and Jay Ritter, 2000, "Uniformly least powerful tests of market efficiency," *Journal of Financial Economics*, 55(3), pp. 361-389.

Loughran, Tim and Anand Vijh, 1997, "Do long-term shareholders benefit from corporate acquisitions?," *The Journal of Finance*, 52(5), pp. 1765-1790.

Lummer, Scott and John McConnell, 1989, "Further evidence on the bank lending process and the capital market response to bank loan agreements," *Journal of Financial Economics*, 25(1), pp. 99-122.

Masulis, Ronald and Ashok Korwar, 1986, "Seasoned equity offerings: An empirical investigation," *Journal of Financial Economics*, 15(1/2), pp. 91-118.

Mikkelson, Wayne and Megan Partch, 1986, "Valuation effects of security offerings and the issuance process," *Journal of Financial Economics,* 15(1/2), pp. 31-60

Mitchell, Mark and Erik Stafford, 2000, "Managerial decisions and long-term stock price performance," *Journal of Business,* 73(3), pp. 287-329.

Myers, Stewart and Nicholas Majluf, 1984, "Corporate financing and investment decisions when firms have information that investors do not have," *Journal of Financial Economics*, 13(2), pp. 187-221.

Ongena, Steven and David C. Smith, 2000, "Bank relationships: A review," in Zenios, S. A. and P. Harker (eds.), *Performance of Financial Institutions*, Cambridge University Press.

Preece, Diana, and Donald Mullineaux, 1994, "Monitoring by financial intermediaries: Banks vs. nonbanks," *Journal of Financial Services Research*, 4, pp. 191-200.

Ritter, Jay, 1991, "The long-run performance of IPOs," *The Journal of Finance*, 46(1), pp. 3-28.

_____, 2002 "Investment banking and securities issuance," in George Constantinides, Milton Harris, and Rene Stulz (eds.) *Handbook of the Economics of Finance* (Amsterdam: North Holland, 2002)

Spiess, D. Katherine and John Affleck-Graves, 1995, "Underperformance in long-run stock returns following seasoned equity offerings," *Journal of Financial Economics,* 38, pp. 243-267.

Spiess, D. Katherine and John Affleck-Graves, 1999, "The long-run performance of stock returns following debt offerings," *Journal of Financial Economics,* 54, pp. 45-73.

Travlos, Nikolaos, 1987, "Corporate takeover bids, methods of payment, and bidding firms' stock returns," *The Journal of Finance*, 42(4), pp. 943-963.

Vijh, Anand, 1999, "Long term returns from equity carveouts," *Journal of Financial Economics*, 51(2), pp. 273-308.

Wansley, James, R. DeGennaro, C. Collins and F. Elayan, 1992, "Sources of value in lines of credit: Evidence from the lender's perspective," Chicago bank structure conference proceedings, May 1992.

APPENDIX
Robustness of Long-Run Stock Performance Results

A. Interactions with Equity Offerings

We assess the robustness of our results by controlling for the effects of equity offerings. In particular, if the loan announcement occurs within three years of a previous IPO or SEO, the post loan announcement underperformance may merely reflect the negative long-run returns associated with an equity issuance. Likewise, a *subsequent* equity issuance may elicit negative returns that we mistakenly attribute to the loan announcement. In order to distinguish post-loan performance from the effects of equity issuance, we make several adjustments to our methodology.

To address post-IPO underperformance concerns, we divide the sample into two groups, according to whether the borrower had been listed on CRSP for at least three years prior to the loan announcement (using CRSP beginning of data dates). We then re-examine BHARs for the two sub-samples. Panel A of Table A1 reports the mean and median BHARs for borrowers based on whether a firm has been listed on CRSP for at least three years. Since both the young and old sample firms underperform significantly, IPO effects do not appear to drive our results.

Removing the impact of SEOs on our loan announcement sample requires us to identify SEOs that occurred within 3-year windows before and after the loan announcement. We identify SEOs from Securities Data Corporation data and analyze the data in two ways. First, we re-examine the peer-adjusted BHARs in Table 3 for announcements that were (not) preceded by an SEO. Second, we truncate our post-loan performance period at the occurrence of a subsequent SEO. Panel B of Table A1 describes the borrowers' mean and median BHARs relative to their style-matched peers, from the loan announcement date to the earlier of 36 months later or the date of a subsequent SEO by the borrowing firm. We find that the mean and median peer-adjusted

BHARs are statistically indistinguishable between the group with a prior SEO and the group without. Panel C repeats the panel B calculation but assumes a full three-year post-loan holding period, regardless of whether the borrower subsequently announces an SEO. Again, the prior-SEO distinction has no significant effect on the mean or median peer-adjusted returns. We conclude that underperformance following loan announcements is not driven by the well-documented underperformance associated with equity offerings.

B. Robustness Across Different Sub-samples

An obvious concern with any empirical study is sampling methodology. To evaluate possibly spurious effects of our main sample selection technique, we present results from alternative samples in Tables A2 and A3. Our conclusions are unaffected by these alternatives.

1. Sample Firms with Multiple Loan Announcements

Lyon, Barber and Tsai [1999] raise serious statistical questions about samples in which some firms' post-event return calculation windows encompass a repeat event. To investigate the impact of such observations on our results, we examine three sub-samples of the loan announcements. First, we examine firms with only one loan announcement during the loan announcement sample period (1980-1989). For these 569 announcements, Panel A of Table A2 presents the mean and median three-year returns. The mean firm with only one loan announcement underperforms by 22.2% and the median firm underperforms by 19.7%, both significant with 99% confidence. Panel B of Table A2 examines the three-year peer-adjusted returns following loan announcements by firms that do not announce another loan within three years of the first one and during our sample period. These 867 loan announcers suffer three-year mean (median) underperformance of 22.0% (22.3%), both significant with 99% confidence.

Neither of these calculations addresses the possibility that a loan is announced shortly after the end of our sample window (yearend 1989). We address this concern by focusing on

loans prior to 1987, for which we are certain that there was no loan announcement by the same firm within three years of the original event. For these 594 events, the mean (median) three-year peer-adjusted BHAR is –17.4% (–16.4%), both significant with 99% confidence. We also examine the BHARs of these 594 firms using our three alternative peer groupings, the size only matched firms, industry and size matched firms, and the size and momentum matched firms. The peer-adjusted buy and hold returns (BHARs) continue to indicate significant underperformance at better than the 95% confidence level. (Not reported in a table.)

2. The "Clean" Announcement Sample

In their study of (one day) loan announcement returns, Billett, Flannery and Garfinkel [1995] focus on a sample of 626 clean loan announcements that have returns based on true transaction prices (not bid-ask averages), and are uncontaminated by other valuation effects (e.g., merger activity, financial distress, dividends, earnings announcements). While we are less concerned with the effects of such additional information given our focus on long-run performance, it could be argued that the underperformance is an artifact of these events, unless we specifically control for them.

Table A3 presents underperformance estimates for Billett, Flannery and Garfinkel's "clean" loan announcement sample. These results (and their implications) closely resemble those presented in Table 3 for the full sample. The mean and median BHARs associated with this clean sub-sample are significantly negative, with 99% confidence.

In summary, our results appear to be invariant to sample selection issues. Given prior criticisms of long-run return studies we view this robustness as critical to our conclusions regarding financing related underperformance in general and lack of bank loan uniqueness in particular.

Table 1. Summary Statistics for Sample of Loan Announcements

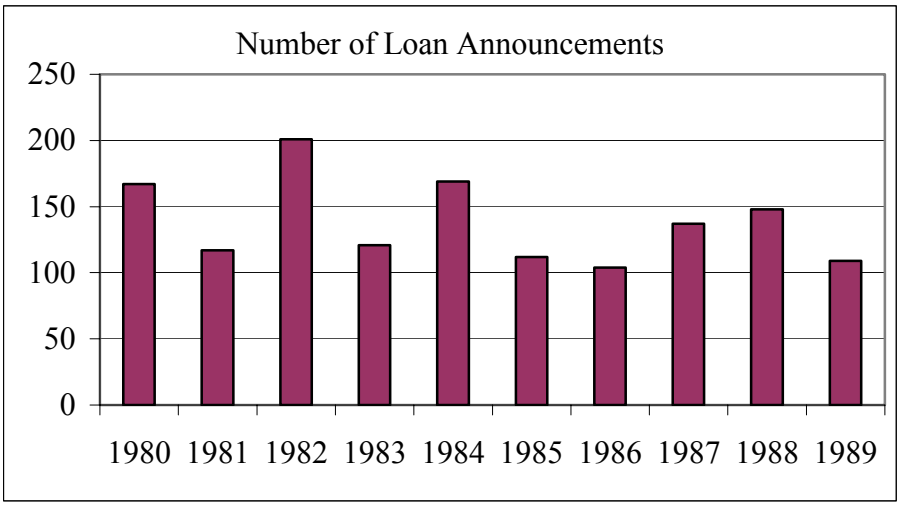
The sample includes 1385 loan agreements announced between 1980 and 1989 on Dow Jones News Retrieval Service (DJNRS) by firms on CRSP or NASDAQ with valid market value of equity. Announcement return is one-day prediction error based on market model estimated over [t-200 through t-51] where t is the first day that investors can trade on the news of the loan agreement. Relative Loan Size is loan amount divided by Market Cap. Momentum = the cumulative raw return on the borrower's stock over calendar year prior to loan announcement. Market/Book = the ratio of the borrower's book value of debt plus market value of equity to its total assets. LEVERAGE = the book value of total debt divided by the sum of debt plus the market value of equity. Market Cap = borrower's market value of equity at the calendar yearend preceding the loan announcement.

	Mean	Median	Min.	Max.	Std. Dev.	N
Announcement Return (%)	0.565	0.183	-44.5	44.7	5.41	1,306
Loan Size ($ million)	117.5	30	0.3	5000	308.9	1,235
Relative Loan Size	.869	0.511	0.041	25.50	1.213	1,235
Maturity (years)	5.01	5	0.04	20	3.04	685
Market Cap ($ million)	291.5	58.1	1.3	10264	781.3	1,385
Total assets ($ million)	960.5	126.7	0.81	50927	3044	1,297
Momentum (%)	16.33	3.42	-90.85	733.30	70.59	1,154
Market/Book	1.53	1.13	0.60	30.72	1.62	1,227
Share Price ($)	13.64	8.88	0.06	517.5	18.78	1,377
LEVERAGE	0.442	0.430	0.001	0.981	0.253	1,210

Table 2. Distribution of Private Loan Announcements, by Year and Industry

The sample includes all loan agreements announced between 1980 and 1989 on Dow Jones News Retrieval Service (DJNRS) by firms for which CRSP reports an equity market value for the prior yearend. Panel A includes the entire sample of 1,385. Panel B restricts the sample to firms also available on Compustat, our source for SIC codes and accounting information. The entire sample is used in panel C: 1,385.

Panel A: Loan Announcements by Year



Panel B: Loan Announcements by Industry (one-digit SIC code) and Year

	SIC Code										
Year	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**Total**
1980	1	12	27	49	14	9	14	14	1	1	142
1981	0	18	11	26	6	10	16	8	5	0	100
1982	0	32	18	47	22	20	13	16	1	2	171
1983	0	13	8	40	10	14	11	7	3	1	107
1984	0	13	17	48	16	14	11	17	3	1	140
1985	0	4	9	38	10	16	9	9	6	2	103
1986	0	5	8	29	5	10	9	9	4	0	79
1987	2	5	18	37	8	19	8	8	9	0	114
1988	0	9	10	35	11	22	10	12	9	0	118
1989	0	4	10	21	10	15	8	14	10	2	94
Total	3	115	136	370	112	149	109	114	51	9	1,168

Panel C: Loan Announcements by Market Capitalization Decile and Year

	NYSE Market Cap Decile										
Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Total**
1980	65	22	11	17	11	15	11	3	7	5	167
1981	32	12	11	19	5	6	11	3	6	12	117
1982	74	25	20	21	18	7	12	6	11	7	201
1983	57	15	11	7	8	7	7	4	3	2	121
1984	75	26	19	9	7	5	8	12	7	1	169
1985	63	13	10	3	4	5	3	4	6	1	112
1986	51	14	11	4	5	4	5	4	2	4	104
1987	62	21	17	8	7	7	6	2	5	2	137
1988	74	25	10	11	8	4	6	3	4	3	148
1989	54	20	11	6	4	5	4	3	1	1	109
Total	607	193	131	105	77	65	73	44	52	38	1385

Panel D: Comparison of Bank Loan Sample and Their Peers

Match criteria	Number of event firms with matches	Mean (median) Abs Diff, first criterion	Mean (median) Abs Diff, second criterion	Mean (median) Summed difference	% summed diffs > 10%
Size, B/M	1169	2.9% (2.4%)	6.9% (2.7%)	9.8% (5.7%)	21.1%
Size alone	1168	0.2% (0.1%)	n/a	n/a	n/a
SIC Code, Size	1055	n/a	5.4% (3.2%)	n/a	n/a
Size, Momentum	1151	3.7% (3.1%)	12.7% (4.8%)	16.4% (8.8%)	42.5%

Table 3. Buy-and-Hold Abnormal Returns Following Loan Announcements, Style-Matched Peer Firms

Holding-period returns (HPRs) are calculated as the cumulative daily return from the day following the loan announcement to 3 years following the announcement date. For sample firms that are delisted before the three-year anniversary of the offering, the HPR is calculated until the delisting date, and the corresponding matched firm's return is calculated over the same truncated period. If the matched firm is delisted, the next closest matched firm's return is used. Style-matched firms are chosen on the basis of size and book-to-market ratio, from stocks trading on the same exchange (NYSE, AMEX, or NASDAQ). BHAR is the buy-and-hold abnormal return defined as the sample firm's HPR less the peer firm's HPR. The sample of 1,169 loan announcements represents borrowing firms with positive book value, for which we could find a peer firm with similar book-to-market ratio and equity market value within 10% of sample firm's. 1980-89.

Panel A: BHARs by event year.

Time Period after Announcement	Mean Difference	Median Difference
Abnormal returns, peers defined by size and book-to-market		
Three years	-27.2[c]	-25.8[c]
First year	-12.15%[c]	-11.28%[c]
Second Year	-12.27%[c]	-9.63%[c]
Third Year	-10.45%[c]	-9.53%[c]
3-year abnormal returns, alternative peer groupings		
Size alone	-35.5[c]	-32.6[c]
SIC Code, Size	-15.4[c]	-18.5[c]
Size, Momentum	-22.4[c]	-23.7[c]

[a,b,c] – significantly different from zero at the 10%, 5%, 1% levels respectively

Table 3 (cont'd)

Panel B – BHARs from Size & B/M Matched Peers, by Size Decile

Size Decile	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Mean BHAR	-19.37%[b]	-35.75%[b]	-56.47%[c]	-31.41%[b]	-46.74%[b]	-18.63%	-24.72%	-28.16%	-4.78%	-6.83%
Median BHAR	-19.02%[c]	-24.86%[b]	-57.56%[b]	-38.16%[c]	-46.41%[c]	-27.48%	-30.85%	-14.34%	-6.28%	-26.98%
N	507	165	103	87	64	57	55	37	48	33

Panel C – BHARs from Size & B/M Matched Peers, by year

	1980	**1981**	**1982**	**1983**	**1984**	**1985**	**1986**	**1987**	**1988**	**1989**
Mean BHAR	16.44%	-33.54%[c]	-18.74%	-38.99%[c]	-48.53%[c]	-39.63%[c]	-21.89%[a]	-39.56%[c]	-26.22%	-34.99%[b]
Median BHAR	1.41%	-31.26%[b]	-31.09%[b]	-23.06%[b]	-19.90%[b]	-29.39%[c]	-32.83%[c]	-34.66%[c]	-14.35%[b]	-36.51%[c]
N	144	100	170	107	140	103	79	114	118	94

Table 4. Fama/French (Time Series) Regressions of Monthly Portfolio Returns

$$(R_{pt} - R_{ft}) = \alpha + \beta(R_{mt} - R_{ft}) + sSMB_t + hHML_t + \varepsilon_t \qquad (1)$$

where R_{pt} is the return on the portfolio of sample firms in month *t*; R_{mt} is the return on the value-weighted index of NYSE, Amex, and NASDAQ stocks in month *t*; R_{ft} is the 3-month T-bill yield in month *t*; SMB_t is the return on small firms minus the return on large firms in month *t*; and HML_t is the return on high book-to-market stocks minus the return on low book-to-market stocks in month t. An estimated value of –0.34 (e.g.) for α is an abnormal return of –34 basis points per month. The factor definitions are described in Fama-French [1993]. The sample period is February 1980 to November 1992 (154 months), and sample firm returns are included in a particular monthly portfolio if the firm's loan date occurred within the last 36 months. Regressions (1) and (2) use value-weighted (VW) returns (with value measured as the sample firms' year-end market capitalization in the year prior to the debt offering), and regressions (3) and (4) use equally weighted (EW) returns. WLS refers to weighted least squares where the weight is the square root of the number of firms in the portfolio. All t-statistics use White [1980] corrected standard errors. [a,b,c] – significantly different from zero at the 10%, 5%, 1% levels respectively

Panel A: Sample Firms

	α	β	s	h	Adj. R^2
(1) VW portfolios/OLS	-0.49[c]	1.10[c]	0.32[c]	0.13[a]	.8488
(t – statistic)	(-2.60)	(30.82)	(3.83)	(1.73)	
(2)VW portfolios/WLS	-0.36[c]	1.13[c]	0.29[c]	0.15[b]	.9445
(t – statistic)	(-3.34)	(34.27)	(5.04)	(2.46)	
(3) EW portfolios/OLS	-0.84[c]	1.08[c]	1.31[c]	0.27[b]	.8039
(t – statistic)	(-3.30)	(17.19)	(8.45)	(2.13)	
(4) EW portfolios/WLS	-0.95[c]	1.13[c]	1.21[c]	0.24[b]	.8916
(t – statistic)	(-5.55)	(21.07)	(12.15)	(2.40)	

Panel B: Peer Firms (matched on Size & B/M)

	α	β	s	h	Adj. R^2
(1) VW portfolios/OLS	0.21[a]	1.05[c]	0.01	-0.12[b]	.9310
(t – statistic)	(1.87)	(38.28)	(0.20)	(-2.01)	
(2)VW portfolios/WLS	0.17[b]	1.06[c]	0.03	-0.04	.9661
(t – statistic)	(2.41)	(63.44)	(1.15)	(-1.01)	
(3) EW portfolios/OLS	0.13	0.98[c]	0.87[c]	0.15[b]	.9418
(t – statistic)	(1.28)	(35.51)	(13.11)	(2.47)	
(4) EW portfolios/WLS	0.10	0.98[c]	0.91[c]	0.21[c]	.9421
(t – statistic)	(0.86)	(30.19)	(12.15)	(2.94)	

Table 4 Continued.

Panel C: Event firms relative to Peer firms matched on Size & B/M

$$(R_{pt} - R_{ft})_{smpl} - (R_{pt} - R_{ft})_{peer} = \alpha + \beta(R_{mt} - R_{ft}) + sSMB_t + hHML_t + \varepsilon_t$$

	α	β	s	h	Adj. R^2
(1) VW portfolios/OLS	-0.69[c]	0.05	0.31[c]	0.25[c]	.1009
(t – statistic)	(-3.41)	(1.34)	(3.40)	(2.92)	
(2)VW portfolios/WLS	-0.61[c]	0.03	0.34[c]	0.22[b]	.1050
(t – statistic)	(-2.64)	(0.83)	(3.34)	(2.38)	
(3) EW portfolios/OLS	-0.98[c]	0.10[b]	0.44[c]	0.12	.1469
(t – statistic)	(-4.24)	(2.17)	(3.92)	(1.29)	
(4) EW portfolios/WLS	-0.87[c]	0.11[b]	0.50[c]	0.19[a]	.1562
(t – statistic)	(-3.01)	(2.12)	(3.71)	(1.72)	

Table 5. Peer-Adjusted Calendar Time Abnormal Returns (CTARs)

CTARs are calculated each month as the return to the portfolio of sample firms in that month's portfolio, minus the return to the peer firms in that month's portfolio. A firm is included in the portfolio if its (or the peer's sample firm's) loan announcement was within the last 36 months. Portfolio returns calculated monthly over February 1980 through November 1992 (154 months). VW refers to value-weighting of returns in the portfolio return calculation. EW refers to equal-weighting of returns in the portfolio return calculation. Weighted results employ the square roots of the number of firms in the monthly portfolio.

	Monthly		Yearly	
	Mean return	t-stat	Mean return	t-stat
	Size & B/M Peers			
(VW, OLS)	-0.58%	-2.73	-7.19%	-2.88
(VW, WLS)	-0.36%	-2.65	-4.63%	-2.11
(EW, OLS)	-0.88%	-3.67	-10.81%	-5.26
(EW,WOLS)	-0.86%	-5.56	-10.81%	-5.92
	Size (alone) Peers			
(VW, OLS)	-0.39%	-1.80	-5.10%	-3.16
(VW, WLS)	-0.30%	-2.09	-4.22%	-2.69
(EW, OLS)	-0.78%	-2.97	-9.85%	-5.57
(EW,WOLS)	-0.87%	-5.02	-11.34%	-6.66
	SIC & Size Peers			
(VW, OLS)	-0.43%	-2.13	-5.58%	-2.60
(VW, WLS)	-0.26%	-1.92	-3.91%	-1.83
(EW, OLS)	-0.67%	-2.93	-8.01%	-4.27
(EW,WOLS)	-0.70%	-4.76	-8.57%	-4.72
	Size & Momentum Peers			
(VW, OLS)	-0.44%	-2.12	-5.61%	-3.09
(VW, WLS)	-0.32%	-2.35	-4.59%	-2.41
(EW, OLS)	-0.82%	-3.36	-10.00%	-6.50
(EW,WOLS)	-0.81%	-5.13	-10.24%	-6.56

Table 6. Earnings Announcement Returns and Transparency

Table presents mean abnormal returns to quarterly earnings announcements over the three-day window (-1,+1). We use the standard market model to establish expected returns (and thus abnormal returns) over the window [-1,+1] where 0 is the COMPUSTAT earnings date. The estimation period for the market model is [-200,-51]. Abnormal returns are observed returns minus expected returns. Quarter –4 is fourth prior earnings announcement relative to bank loan date. Quarter +1 is first earnings event after bank loan. Significance levels based on cross-sectional t-statistics. Mean standard deviation of abnormal returns is the average across individual firms of the time-series standard deviation of abnormal returns over the indicated window.

Panel A. Mean Abnormal Returns in %

Quarters	N	Loan Sample	Peer Firms
(–4, –1)	2391	–0.37[b]	–0.18
(+1,+4)	3163	–0.34[b]	–0.02
(+5,+8)	2589	–0.37[b]	0.07
(+9,+12)	1851	–0.36[b]	0.06
(+1, +12)	7603	–0.36[c]	0.03

Panel B. Mean Standard Deviation of Abnormal Returns %

Quarters	N	Loan Sample	Peer Firms	Difference
(–4, –1)	640	5.79	4.60	1.19[c]
(+1,+4)	812	6.42	5.07	1.35[c]
Difference	615	–0.55[b]	–0.16	
(+1, +12)	816	7.06	5.71	1.35[c]

Table 7. Median Peer-Adjusted Measures of Operating Performance and Investing Activity

Table presents medians of peer-adjusted variables (sample firm minus peer firm values). Panel A reports statistics using peers chosen on basis of size and book-to-market equity. Panel B uses peers matched on size and runup (prior year raw stock return). Panel C uses peers matched on industry (two-digit SIC code) and size. Variables are: [operating income (item 13) scaled by total assets (item 6)]; [net income (172) scaled by sales (12)]; [net income (172) scaled by total assets (6)]; [capital expenditures (128) + research and development expense (46) all scaled by total assets (6)]; and [capital expenditures (128) scaled by total assets (6)]. Year –1 values are latest fiscal year-end values prior to bank loan. Year 0 values are fiscal year-end values at end of bank loan year. Peer adjusted values equal ratio for bank loan announcer minus ratio for peer. Peer is chosen based on size and book to market ratio. Year is relative to bank loan year.

Panel A (peers matched on size and book-to-market):

Year	OIBD/TA	NI/SALES	NI/TA	(Capex+RD)/TA	Capex/TA
-1	-.01682[c]	-.01394[c]	-.01499[c]	-.06236[c]	-.03206[c]
0	-.03257[c]	-.03057[c]	-.03094[c]	-.05549[c]	-.02634[c]
1	-.02352[c]	-.02537[c]	-.02834[c]	-.05548[c]	-.03060[c]
2	-.02334[c]	-.02278[c]	-.02836[c]	-.05016[c]	-.02529[c]
3	-.01758[b]	-.01583[c]	-.02387[c]	-.05346[c]	-.02529[c]

Panel B (peers matched on size and runup):

Year	OIBD/TA	NI/SALES	NI/TA	(Capex+RD)/TA	Capex/TA
-1	-.01346[b]	-.01038[c]	-.01186[c]	-.04293[c]	-.02629[c]
0	-.01695[c]	-.02163[c]	-.02108[c]	-.03928[c]	-.02670[c]
1	-.01863[c]	-.02202[c]	-.02276[c]	-.04581[c]	-.03088[c]
2	-.02058[c]	-.02780[c]	-.02743[c]	-.04149[c]	-.02433[c]
3	-.01847[c]	-.01774[c]	-.01812[c]	-.03863[c]	-.02433[c]

Panel C (peers matched on SIC and size):

Year	OIBD/TA	NI/SALES	NI/TA	(Capex+RD)/TA	Capex/TA
-1	-.01540[c]	-.00765[c]	-.01101[c]	-.04443[c]	-.02177[c]
0	-.01691[c]	-.02136[c]	-.02491[c]	-.03960[c]	-.02453[c]
1	-.01730[c]	-.02039[c]	-.02226[c]	-.03561[c]	-.02384[c]
2	-.00547	-.01470[c]	-.01534[c]	-.02505[c]	-.01710[c]
3	-.00885	-.01474[c]	-.01750[c]	-.02792[c]	-.01710[c]

[a,b,c] indicate significance levels of 10%, 5%, 1% respectively.

Table A1. Three-Year Returns Following Loan Announcements: The Effects of Equity Offerings (IPOs and SEOs)

BHAR is the buy-and-hold abnormal return defined as the sample firm's holding period return (HPR) less the peer firm's HPR. Holding-period returns (HPRs) are calculated as the cumulative daily return from the day following the loan announcement to 3 years following the announcement date. For sample firms that are delisted before the three-year anniversary of the offering, the HPR is calculated until the delisting date, and the corresponding matched firm's return is calculated over the same truncated period. If the matched firm is delisted, the next closest matched firm's return is used. In panel B, the holding period is further modified to be from one day after the loan announcement to the sooner of: 1) three years after loan announcement or 2) date of the first SEO after loan announcement. Sample is classified by whether the loan was preceded by a SEO – within three years prior – or not. The sample is subset of loan announcements by firms with book value of equity and market value of equity available for matching, and a corresponding matched firm with market value of equity within 10% of sample firm's (N=1,169). Test of whether median returns differ from zero are sign tests.

Panel A: Has firm been listed on CRSP for at least 3-years prior to loan announcement?

Return Measure	Are the Returns Equal Across YES (N=940)	NO (N=229)	Groups? (p-values)
Mean BHAR	-25.87%[c]	-32.85%[c]	.5950
Median BHAR	-22.51%[c]	-32.78%[c]	.0488

Panel B: Did the firm have a pre-loan SEO?
Return window ends at earlier of three-year anniversary or date of first SEO following the loan announcement.

Are the Returns Equal Across Return Measure	**YES** (N=223)	**NO** (N=946)	Groups? (p-values)
Mean BHAR	-36.61%[c]	-34.52%[c]	.8698
Median BHAR	-16.41%[c]	-21.29%[c]	.8768

Panel C: Did the firm have a pre-loan SEO?
Return window ends at three-year anniversary of loan announcement, regardless of any subsequent SEO.

Are the Returns Equal Across Return Measure	**YES** (N=223)	**NO** (N=946)	Groups? (p-values)
Mean BHAR	-26.34%[b]	-27.45%[c]	.9330
Median BHAR	-26.98%[c]	-25.56%[c]	.8079

[a,b,c] – significantly different from zero at the 10%, 5%, 1% levels respectively

Table A2. Three-Year BHARs Following Independent Loan Announcements

BHAR is the buy-and-hold abnormal return defined as the sample firm's HPR less the peer firm's HPR Holding-period returns (HPRs) are calculated as the cumulative daily return from the day following the loan announcement to 3 years following the announcement date. For sample firms that are delisted before the three-year anniversary of the offering, the HPR is calculated until the delisting date, and the corresponding matched firm's return is calculated over the same truncated period. If the matched firm is delisted, the next closest matched firm's return is used. Matched firms are chosen on the basis of size and book-to-market ratio.

Panel A: Loan Announcements by Firms with Only One Loan in the 1980-1989 Sample Period (N=569)

Mean	-22.2[c]	Median	-19.7[c]

Panel B: Loan Announcements not Followed by Another Loan within 3 years, in the 1980-1989 Sample Period (N=867)

Mean	-22.0[c]	Median	-22.3[c]

Panel C: Loan Announcements not Followed by Another Loan within 3 years, in the 1980-1986 Sample Period (N=594)

Mean	-17.4[c]	Median	-16.4[c]

[a,b,c] – significantly different from zero at the 10%, 5%, 1% levels respectively

Table A3. Three-Year Wealth Effects Associated with Loan Announcements: "Clean Sample" Results

Holding-period returns (HPRs) are calculated as the cumulative daily return from the day following the loan announcement to 3 years following the announcement date. For sample firms that are delisted before the three-year anniversary of the offering, the HPR is calculated until the delisting date, and the corresponding matched firm's return is calculated over the same truncated period. If the matched firm is delisted, the next closest matched firm's return substitutes on a point-forward basis. Matched firms are chosen on the basis of size and book-to-market ratio. BHAR is the buy-and-hold abnormal return defined as the sample firm's HPR less the peer firm's HPR. Clean sample announcements are not contaminated by any confounding corporate events, and have announcement returns based on actual transaction prices. Size is borrower market value of equity at end of year prior to loan announcement. Momentum is cumulative raw return to borrower over calendar year prior to loan announcement. In Panel B, α is the intercept from the regression. Regressions (1) and (2) use value-weighted (VW) returns (with value measured as the sample firms' year-end market capitalization in the year prior to the debt offering), and regressions (3) and (4) use equal-weighted (EW) returns. WLS refers to weighted least squares where the weight is the square root of the number of loan announcements in the month. Regression (intercept) t-statistics calculated using White [1980] corrected standard errors. In Panel C, CTARs (monthly for example) are calculated as the difference between the returns to a portfolio of sample firms who announced a loan within the last 36 months, and the return to a portfolio of peers.

BHARs (3 year measurement window)

Peer Matching Criteria	Mean	Median	N
Size and Book/Market	-35.7% [c]	-29.8% [c]	532
SIC (2 digit) and Size	-29.0% [c]	-21.1% [c]	485
Size and Momentum	-25.1% [c]	-23.8% [c]	529

[a,b,c] – significantly different from zero at the 10%, 5%, 1% levels respectively