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The Value of Bank Durability: Borrowers as Bank Stakeholders

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ABSTRACT

We examine the value of bank durability to borrowing firms. The analysis is based on theoretical models of the asset services view of intermediation which imply that private information and associated relationship-specific activities are intrinsic to bank lending. We analyze share price effects on firms with lending relationships with Continental Illinois Bank during its de facto failure and subsequent FDIC rescue. We find the bank's impending insolvency had negative effects and the FDIC rescue positive effects on client firm share prices. We conclude that borrowers incur significant costs in response to unanticipated reductions in bank durability and thus are bank stakeholders.

WE ANALYZE THE VALUE of bank durability to borrowing firms within the context of the asset services view of intermediation and contracting theory. We examine excess returns for firms with publicly documented lending relationships with the Continental Illinois Bank during the period of its de facto failure and rescue by the FDIC in 1984.¹ At that time, Continental Illinois was the seventh largest domestic bank holding company and had a large corporate client base. This was the last government rescue of a major bank prior to the "too big to fail" doctrine, initiated several months afterwards. We find client firm value is correlated with unexpected changes in bank durability, indicating that borrowers have a valuable stake in lending relationships.

The effects of bank failure on client firms are related to the extent to which borrowers obtain relationship-based cost advantages from bank lending. Financial market efficiency implies that share prices will capitalize any losses borrowers incur as a result of bank failure. We find client firms of Continental Illinois incur average excess returns of -4.2% during the bank's impending insolvency. In response to the government rescue announcement, which revived the bank's durability, client firms gain 2.0% on average. These effects

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¹ Throughout the paper we use the terminology Continental Illinois Bank or Continental Illinois. The official name of the parent bank holding company at that time was Continental Illinois Corporation and its banking subsidiary was Continental Illinois National Bank and Trust Company of Chicago.

are significant only for firms for which Continental Illinois Bank served as direct lender or as manager of a syndicated loan. Cross-sectional regressions indicate valuation effects are significantly magnified by the extent of client firm leverage or size of credit facility, but are mitigated for firms with publicly documented, contemporaneous lending relations with other banks, separate from those with Continental Illinois. Share price effects in response to the rescue are more favorable for firms with no publicly traded debt.

We conclude that bank financial distress harms client firms as a result of their loss of relationship-based cost advantages intrinsic to bank lending. The existence of these quasi rents implies borrowers are bank stakeholders. Our results support asset services models of intermediation that emphasize the relationship-specific nature of bank lending and have implications for bank regulation and for policies pursued by regulatory authorities charged with evaluating bank solvency and initiating closures and rescues.

The paper is organized as follows. In Section I we discuss the theoretical background relevant for assessing the value of bank durability to borrowing firms, derive empirical hypotheses, and consider implications of regulatory policy. Sample collection procedures and methodology are described in Section II. In Section III event study and cross-sectional regression results are reported. Conclusions are presented in Section IV.

I. Private Information and the Value of Bank Lending Relations

A. Models of Banking Relationships and Firm Value

In Myers and Majluf (1984) and Miller and Rock (1985), information imbalance between investors and corporate managers makes it more difficult for firms to raise external funds, adversely affecting corporate investment. Diamond (1984), Ramakrishnan and Thakor (1984), and Boyd and Prescott (1986) argue that banks' comparative advantage at assessing private corporate information and monitoring managers mitigates this information-based problem. Fama (1985), Sharpe (1990), Rajan (1992), and Diamond (1991a, 1991b) model bank-borrower interaction over multiple periods, including loan renewals, which fosters private information flows over time. These models imply that banks are well-informed compared to investors operating on only public information and have a comparative advantage in monitoring borrowers relative to dispersed debtholders. As a result, banks can offer some borrowers lower financing costs relative to the public securities market. The short-term, bilateral structure of loan contracts facilitates renegotiation between borrower and lender in response to new information. Thus, there are relationship-specific cost advantages to bank lending.

Williamson (1985) argues that established relationships between sellers and buyers can induce ex post monopoly. Farrell and Shapiro (1989) examine the design of repeated bilateral, short-term contracts when there are relationship-specific, observable fixed setup costs and the quality of services can be

varied ex post. They assume perfect ex ante competition where many sellers are prepared to serve buyers who can switch sellers instantaneously at a fixed setup cost. Sellers compete by making an introductory offer to initially pay the buyer's setup costs which they recoup by accruing future quasi rents from exploiting the buyer ex post without setting a price so high that the buyer switches to a new seller. The bank-borrower relationship can be viewed within this context since private information flows between borrowers and banks entail relationship-specific investments, i.e., setup costs. From this perspective, the borrower sustains a loss in response to bank failure only if the borrower accrues a share of future relationship-specific quasi rents.

In Sharpe's (1990) model, banking relationships are implicit contracts in which banks promise reduced prices for borrowers that demonstrate favorable asymmetric information as the relationship evolves. Reputational capital prevents banks from breaking these implicit agreements and exploiting informationally captured client firms. These cost advantages are relationship specific since a new bank is relatively uninformed and faces an adverse selection problem in assessing firms that had lending relations with another bank. In particular, some customers may have appropriately lost their credit facilities because they became less desirable clients (i.e., sufficiently adverse information emerged to justify termination). Because a new bank cannot immediately obtain the relevant private information, it initially charges higher borrowing costs compared to the well-informed original bank. Thus, corporate management must spend valuable time and resources to gather and credibly convey private information about its quality to a new bank, in addition to absorbing direct costs of searching for and initiating new lending relations.

Continuity of relationships allows the original bank to maintain confidential records of borrower-specific information, including previous borrowing patterns, repayment habits, deposit flows, and quality of products and management. Because lending relationships entail repeated short-term contracts, the bank can pressure a client to discontinue poor projects by a nonrenewal threat or decision. Private data, including information gathered across the bank's portfolio of client firms, are used to gauge risk and facilitate future decisions about lending to a client. It is virtually impossible for outside creditors, such as a new bank, to obtain access to these data so some gains from the lending process accrue only if a firm deals with a bank with which it has developed a pattern of experience and communication. As a result, client firms are stakeholders in their lending bank and sustain losses when the bank fails. Diamond (1991b) and Rajan (1992) argue that access to public debt markets mitigates this effect.

In Black's (1975) view of banking, there are neither relationship-specific activities nor associated quasi rents. Instead, banks are passive institutional investors and provide no asset services. Bank lending is based on only public information and is a perfect substitute for publicly traded debt. This implies a borrowing firm is indifferent about who holds its debt contracts and thus is not affected by the demise or rescue of its bank.

There is evidence that bank-firm relationships generate favorable valuation effects for borrowers by providing a future stream of evaluation and monitoring services which lowers financing costs relative to less-informed sources of funds. James (1987) and Slovin, Sushka, and Hudson (1988) report that bank loans or standby letters of credit increase client firm value.² In Lummer and McConnell (1989), announcements of loan renewals, though not loan initiations, increase client firm share prices. Slovin, Sushka, and Hudson (1990) find that bank debt in corporate capital structures mitigates negative share price effects of seasoned equity issues. In Slovin and Young (1990) and James and Wier (1990), banking relationships reduce underpricing of initial public offerings of common stock.

B. Empirical Hypotheses

We examine valuation effects of an unexpected, exogenous, potential termination of bank-borrower relations. If banks operate on only public information or if banks extract all relationship-specific quasi rents as they accrue, borrowers should incur no loss from bank failure; i.e., on average, customer share prices should be unaffected. In contrast, if the borrower has an implicit contract that its bank will continue favorable treatment based on accumulated private information or otherwise expects to accrue a share of relationship-specific quasi rents, a bank's demise should adversely affect borrower valuation. In this case, cost advantages that would accrue in the future are lost to the borrower. Financial market efficiency implies firm value should reflect the market's expectation of the present value of the client firm's share of any future quasi rents. Thus, the average loan customer's stock price should fall when the bank fails. This is the rationale for our empirical test as to whether a firm is a stakeholder in the bank from which it borrows.³

Given Diamond's (1991a) hypothesis that bank lending is especially valuable for firms that do not have access to public debt markets, bank failure may increase the probability of bankruptcy for client firms, especially highly levered firms, that use bank lending agreements as a major source of liquidity and certification of value. Likewise, losses should be mitigated for client firms that have established separate lending relations with other banks or have access to publicly traded debt.

C. Implications of Regulatory Policy

There are a number of different ways by which bank financial distress is resolved, depending on decisions made by the regulatory authorities. If a

² Bailey and Mullineaux (1989) find the market's reaction to loan agreements with insurance companies is similar to that for bank loan agreements.

³ Titman (1984) argues that liquidation imposes costs not only on securities holders but on other associates of the firm, including customers who have implicit claims against the firm. Shapiro and Titman (1985) and Cornell and Shapiro (1987) also discuss the role of stakeholders in establishing optimal financial policy.

bank is liquidated, the capitalized value of bank-borrower relationships based on accumulated private information is lost. This makes industry exit via bank failure or liquidation costly for stakeholders, particularly loan customers. There are two main alternatives to this type of industry exit: (1) voluntary or regulator-arranged acquisition of the problem bank by a qualified bank, and (2) establishment of a national deposit bank, popularly called "bridge bank," in which the FDIC takes direct control of bank management and operations.⁴ The rescue of the Continental Illinois Bank entailed a variant of government control after *de facto* insolvency. However, a regulator-arranged sale or the seizure of control of a bank by regulators does not necessarily maintain the value of private information, monitoring, and other benefits impounded in bank-borrower relations even if the failing bank is sold or operated in *toto*. This is because some quality dimensions of bank services are likely to be reduced *ex post*.

In the case of a sale, new bank management may make changes adversely affecting a client of the failed bank, including renegeing on or reducing implicit commitments or adversely changing terms of agreements made by previous managers (e.g., unfavorably revaluing collateral or tightening restrictive covenants). Information generated by previous loan officers consists of their implicit as well as explicit evaluations of corporate managers and associated lending commitments which, unlike more concrete forms of data (such as profits and sales), is difficult to credibly transfer to a new bank's officers. Moreover, healthy banks that purchase loan portfolios of failed banks face capital constraints that can lead them to call loans or cancel (or not renew) credit facilities of firms with which they do not have longstanding relations.

In the case of government control, the FDIC is not required to honor terms of agreements of the failed bank. In particular, technically sound revolving credit and term loan agreements in which the client has not borrowed the full amount can be canceled. Moreover, regulator approval is typically required for all major managerial decisions after seizure. For example, after the FDIC rescue, Continental Illinois managers were required to obtain regulator approval for any decision involving a loan of \$100 million or more. Since the FDIC is a capital-constrained institution and operates under political pressure to minimize its demand for working capital, it has utilized cancellation rights to increase its reserves rather than maintaining potentially profitable loans. For example, the *Wall Street Journal* (February 15, 1991) reported that subsequent to the seizure of the Bank of New England by the FDIC, many lines of credit or unfunded loan obligations were canceled, creating severe difficulties for certain businesses with longstanding relationships with the bank.⁵

⁴ Regulators control entry and exit for the banking industry. Technically, the chartering agency or the FDIC declares the state of insolvency.

⁵ A spokesman for the FDIC indicated that "These are some of the disruptions that can happen when a bank goes into receivership."

Overall, the government's willingness to support a bank rather than allow its liquidation is a public policy judgment that liquidation leads to significant losses in social welfare because gains associated with accrual of private information by screening and monitoring, and the development of borrower reputation associated with continuous relations, are bank specific and nonsalvageable. Nevertheless, the nationalization or sale of a distressed bank is not likely to be a perfect substitute for the continuation of a private sector bank if there are relationship-based cost advantages to bank lending.

II. Sample and Methodology

A. Sample

We examine share price effects on borrowers due to an unexpected change in probability of bank dissolution caused by forces external to the borrowers examined, specifically the *de facto* insolvency and subsequent rescue of the Continental Illinois Bank by the FDIC in 1984. If borrowers are bank stakeholders, then (1) deterioration in the Continental Illinois Bank's durability and quality should on average reduce market values of its client firms, and (2) the FDIC rescue and willingness to maintain Continental Illinois as a publicly traded, government-supported bank should on average increase client firm value. If banks are passive institutional investors with no private information or if client firms do not accrue future relationship-specific quasi rents, there should be no change in client firm values due to the bank's difficulties. We use event study methodology and cross-sectional regression analysis to assess the impact of the impending failure and subsequent rescue on share prices of loan customers of Continental Illinois.⁶

The size and stature of the Continental Illinois Bank facilitate our test. At year-end 1983, the bank was the seventh largest U.S. bank holding company (in terms of both deposits and total assets). Continental Illinois Bank was a major corporate lender and served as lead manager of syndicated loans for publicly traded corporate clients. The bank's size and national scope of its corporate lending activities increase the potential for obtaining public information about bank-borrower relationships. In contrast, regional bank asset portfolios are dominated by loans to smaller, lesser-known corporations, typically not listed on a major exchange, so little public information is available about their clients' banking relationships.

The *de facto* failure of Continental Illinois represents the last major case in which the liquidation of a large bank was a realistic probability. Indeed, officials in the Reagan administration, especially at the U.S. Treasury, opposed the bailout up to the rescue announcement. Regulators, however, argued that closure and deposit payoff would be complex, lengthy, and costly. Immediately after the announced bailout, bank regulators insisted the Conti-

⁶ This is in contrast to work by Swary (1986) and Wall and Peterson (1990) that examines the impact of Continental Illinois' difficulties on other banks and financial institutions and finds no evidence of significant spillover effects.

nental Illinois problem was unique. During Congressional hearings two months later, however, regulators promulgated the “too big to fail” doctrine. Thus, it is unlikely the public has perceived the liquidation of a money center bank to be a realistic probability after the Continental Illinois action. Consequently, this case represents a unique example of a very large bank, with publicly documented lending relations with publicly traded firms, that faced a significant probability of liquidation.

Developing our sample is necessarily complicated for several reasons. First, banks do not provide consistent public reporting about their clients. Second, the FDIC will not provide the public with the identity of a bank’s clients even after a rescue. This is because the FDIC has ruled that when it takes possession of bank records, it does not hold them as a federal agency but stands in the shoes of the bank and as such is exempt from the Freedom of Information Act (5 USC Section 552).⁷ Thus, we are confined to developing a sample of client firms via indirect methods.

One source of information is that Continental Illinois Bank (like other major banks) makes public announcements about lending events. For example, initiations or renewals of credit facilities are sometimes reported in the *Wall Street Journal* or the *American Banker*. We utilize indexes and also examine each page of these daily publications for two years prior to the FDIC bailout for evidence of lending relationships; namely, articles and tombstone advertisements indicating Continental Illinois Bank is a direct lender or a lead manager (or colead manager) of a credit facility or provides funding as a participant in a loan syndication. We also search the Lexis database for mention of Continental Illinois Bank in corporate reports over this two-year period to ascertain the existence and nature of lending arrangements with the bank. The Dow Jones News Retrieval and Standard and Poor’s reporting services are searched and Moody’s reports and annual corporate reports are examined for 1982 through 1985 to obtain information about credit facilities.

To be included in the sample, firms must be listed on the New York or American Stock Exchange and a published report of a loan or credit facility must indicate the relationship is to extend over a time span encompassing the bank’s distress and rescue. Our goal is to assess valuation effects of a decline in bank quality due to factors external to client firms. Thus, we exclude firms in financial difficulty according to published *Wall Street Journal* reports during the year of the Continental Illinois insolvency to isolate the impact of bank durability on solvent clients.

Our final sample consists of 53 firms. In 24 cases, the bank only provided funds as a participant in a syndication. For 29 firms Continental Illinois Bank was either lead (in three cases colead) manager of a syndicated loan or a direct lender in a nonsyndicated transaction. For these firms, there is public information that the lending arrangement is not a one-time transaction loan, but part of a continuing relationship. Moreover, these agreements are usually in the form of multiyear credit facilities. Typically, a firm’s

⁷ A Freedom of Information Act request to the FDIC from the authors was denied on this basis.

annual report not only cites a current "credit agreement" but also indicates that it replaces, restates, or amends an earlier agreement with Continental Illinois. (The Appendix contains examples of such reports.) The series of agreements indicates the continuing role of Continental Illinois in the affairs of these firms.

Summary statistics on transaction size and its relation to client firm market value are provided in Panel A of Table I. In Panels B and C, we report a frequency distribution of credit facility size and the ratio of these facilities to borrower market value of equity. In general, these facilities are substantial external financings. The mean value of credit facilities is \$431.5 million and

Table I
Descriptive Statistics of 53 Client Firms of the Continental Illinois Bank and Associated Credit Facilities

Market value of equity is measured at 1983 year end. Total debt is measured as long-term plus short-term debt from COMPUSTAT, year-end 1983.

Panel A: Client Firm Descriptive Statistics				
	Mean	Median	Minimum	Maximum
Firm size (market value of equity, \$ million)	1085.1	692.6	3.3	11802.8
Credit facility (\$ million)	431.5	210.0	12.0	2000.0
Credit facility/market value of equity	0.89	0.49	0.04	7.06
Total debt/market value of equity	1.32	0.89	0.06	5.90

Panel B: Distribution of Reported Credit Facility Values	
Range of Credit Facility Values (L) (\$ Millions)	Frequency
$L < 50$	11
$50 \leq L < 100$	3
$100 \leq L < 200$	10
$200 \leq L < 300$	8
$300 \leq L < 400$	2
$400 \leq L < 500$	4
$500 \leq L$	15

Panel C: Distribution of Ratios of Credit Facilities to Market Value of Equity	
Range of Ratios (R)	Frequency
$R < 0.10$	6
$0.10 \leq R < 0.20$	6
$0.20 \leq R < 0.30$	6
$0.30 \leq R < 0.40$	2
$0.40 \leq R < 0.50$	8
$0.50 \leq R < 0.60$	7
$0.60 \leq R < 0.70$	2
$0.70 \leq R < 0.80$	1
$0.80 \leq R$	15

the median is \$210 million. These data represent a minimum estimate of the extent of lending relationships with Continental Illinois since firms do not consistently report their total bank debt nor information about relationship-based services purchased from Continental Illinois that could be a factor in pricing relationship-based credit. The mean (median) market value of equity of client firms is \$1085.1 million (\$692.6 million). Statistics for the leverage ratio (total long-term plus short-term debt divided by market value of equity) are reported utilizing 1983 year-end data.

B. Methodology

We calculate daily average prediction errors, APE, using market model methodology. The announcement date, $t = 0$, is Monday, July 23, 1984, the first trading day after weekend reports the FDIC would take a controlling equity interest in Continental Illinois. Since the events are perfectly clustered with respect to calendar time, client firms are combined in a single portfolio. Firms are diversified with respect to industry, however, so there is little cross-sectional dependence in securities returns, and results are similar if firms are not combined into a single portfolio.

The adjusted (excess) returns are the difference between the arithmetic return and the conditional expected return, obtained from a least squares regression estimated over a 120 day preevent period, $t = -347$ to -228 , where the return on the CRSP equally weighted index is the explanatory variable. This estimation period is prior to the sale of Continental Illinois' credit card division in March 1984, the first substantive action revealing concern about the bank's capital position. The null hypothesis of the statistical test is that the APE for the portfolio for each subperiod equals zero. The test statistic is the ratio of the relevant APE to its standard deviation estimated from the time series of excess returns during the preevent period (-347 to -228). For multiple-day event periods, the standard error is the square root of the number of days in the window multiplied by the single-day standard error. The t -statistics are reported in parentheses, the proportion of returns negative in brackets (statistical significance based on the Wilcoxon signed ranks test), and median returns in braces. In cross-sectional regressions, relevant event window adjusted returns are used as dependent variables and explanatory variables test effects of type and size of lending arrangement, leverage, documented contemporaneous lending relations, and access to public debt markets.

III. Empirical Results

A. Valuation Effects on Client Firms

Empirical results for the full sample are reported in column 1 of Table II. The sale of the bank's credit card division, announced on $t = -78$, is followed by a progression of deleterious news about Continental Illinois. Initial rumors of difficulties are followed by reports of significant borrowings at the Federal

Table II
Average Prediction Errors (in Percentage Terms) for 53 Firms
With Lending Relationships With the Continental Illinois
Bank During Its Impending Insolvency and Subsequent
Rescue by the FDIC

The event date $t = 0$ is July 23, 1984, the day of the publication of the FDIC rescue announcement. Average prediction errors are estimated using market model methodology where the preevent estimation period is $t = -347$ to -228 ; t -statistics are in parentheses, the proportion of returns negative in brackets (with significance calculated using the Wilcoxon signed ranks test), the median returns are in braces, and N is the sample size. Day $t = -78$ is the day of the sale of the bank's credit card division which is the first substantive action revealing concern about the bank's capital position; day $t = -5$ is the date of the termination of negotiations by the last potential bidder, the Bass family.

Daily Intervals	Full Sample of Client Firms of Continental Illinois (1) $N = 53$	Type of Lending Relationship	
		Continental Illinois as Direct Lender or Lead Manager (2) $N = 29$	Continental Illinois as Participant Only (3) $N = 24$
(-79, -6)	-7.96	-9.58	-5.98
	(-2.35)*	(-2.03)*	(-1.68)
	[0.64]**	[0.66]**	[0.63]*
	{-10.04}	{-15.23}	{-5.56}
(-5, -2)	-1.94	-4.16	0.74
	(-2.47)*	(-3.79)**	(0.89)
	[0.57]*	[0.79]**	[0.30]
	{-0.90}	{-1.89}	{1.26}
(-1, 0)	1.18	2.00	0.19
	(2.13)*	(2.58)*	(0.33)
	[0.38]*	[0.31]*	[0.46]
	{1.30}	{1.62}	{0.49}
(-79, 0)	-8.71	-11.73	-5.05
	(-2.48)*	(-2.39)*	(-1.37)
	[0.64]**	[0.69]**	[0.58]
	{-9.49}	{-13.17}	{-4.91}
(+1, +15)	0.10	0.63	-0.55
	(0.06)	(0.30)	(-0.34)

* Significant at the 5% level.

** Significant at the 1% level.

Reserve's discount window, a substantial loan from 28 banks to Continental Illinois, and an intensive search for potential bidders for the bank. The adjusted return for the preevent interval, -79 to -6, is -7.96%, significant given a t -statistic of -2.35. Sixty-four percent of the firms have negative returns. During the period immediately preceding the rescue, -5 to -2, the last potential bidder, the Bass family, terminates negotiations and any prospects for a private sector transaction disappear. The adjusted return is -1.94% with a t -statistic of -2.47 and 57% of returns are negative. In

contrast, for the two-day period of the report of the FDIC rescue, -1 to 0 , there is a significant, positive average excess return of 1.18% with a t -statistic of 2.13 and 62% of returns are positive. For fifteen days after the announcement, $+1$ to $+15$, the average excess return is 0.10% , not statistically significant given a t -statistic of 0.06 .

Overall, firms with publicly reported lending relationships with Continental Illinois Bank sustain significantly negative excess returns during the bank's difficulties but positive returns in response to the FDIC rescue. These results are consistent with the hypothesis that a client firm is a stakeholder in the bank from which it borrows. In principle, it could be argued that Continental Illinois' demise was caused by bad loans to the types of firms included in the sample which could also explain the negative excess returns. However, this line of causality from client firms to the bank is unlikely to explain positive returns observed in response to the bailout. In addition, there is no evidence that these firms are in distress and, in fact, earnings of the portfolio per share increased 14.2% during 1984, which covers the period of Continental Illinois difficulties.

The positive excess returns associated with the rescue are smaller than the negative excess returns prior to the rescue. For the entire period, -79 to 0 , the cumulative average excess return is -8.71% with a t -statistic of -2.48 . Thus, even though the bank is rescued, rather than liquidated, client firms sustain significant overall losses as a result of the bank's distress. This is consistent with the view that a government-assisted bank, with a new team of managers selected and subject to close oversight by regulators, may not honor prior commitments or serve as an equivalent quality lender and monitor. This suggests the effective nationalization of a distressed bank is not a perfect substitute for the continued durability of a private sector bank.

B. Effects of Type of Lending Arrangement

Next we examine whether the type of lending relationship influences the sensitivity of client firm share prices to changes in expected bank durability. The rights and obligations of a lender and its relationship to the borrower in a syndicated loan vary depending on the type of agreement. Although each loan participation is unique, there are two dominant structuring methods: a direct loan participation in which each bank signs a separate note with the borrower, and an indirect participation in which one note is issued to the borrower made payable to the lead bank which executes separate agreements specifying the relationships between each participant bank. Since these documents are private, we are not able to obtain this information for syndications in the sample.

In both types of agreements, the bank taking a lead position has responsibility for assessing private information and borrower suitability as well as for monitoring and controlling the borrower. This facilitates information flow between the borrower and lead bank and economizes on expenditure of resources for information acquisition. A lead bank is responsible for providing

participant banks with timely information about borrower status.⁸ Lead managers have an incentive to screen and monitor effectively since a bank that loses its reputation would have difficulty syndicating future loans. Participant banks typically have little contact with the borrower and do not provide monitoring services.

For the subsample of firms in which Continental Illinois is the direct lender or lead manager, column 2 of Table II, the preevent adjusted return for -79 to -6 is -9.58% ($t = -2.03$), and is -4.16% ($t = -3.79$) for the period of imminent insolvency, -5 to -2 .⁹ At the rescue announcement, there is a significantly positive two-day adjusted return of 2.00% . For the postevent period, the adjusted return is statistically zero. The excess return over -79 to 0 is -11.73% ($t = -2.39$). Of the 29 firms, there are 17 with a combination of a negative adjusted return for the preevent period, -5 to -2 , and a positive adjusted return for the announcement window, -1 to 0 . If adjusted returns for each firm for each subperiod were randomly generated, the probability of observing 17 or more firms (out of 29) with this specific pattern of sign reversal is 0.0001. Thus, we reject the null hypothesis of randomness. We conclude that shareholder wealth of client firms with this type of lending arrangement was adversely affected by the potential liquidation of the Continental Illinois Bank and favorably affected by the FDIC bailout.

The aggregate loss in market value to these client firms, calculated as the market value of each firm multiplied by that firm's return from -5 to -2 , is \$537 million. The average loss per firm is approximately 2.9% of its credit facility. By implication, this loss is the market assessment of the present value of the expected explicit and indirect costs associated with the demise of a bank lending relationship. Nevertheless, this percentage figure is likely to overestimate the ratio of costs to loans since some information about other credit facilities between these client firms and Continental Illinois may have been publicly available but not reported in data sources we utilize. Thus, the 2.9% figure is more appropriately viewed as an upper bound.

The results for firms for which Continental Illinois Bank is only a participant lender are reported in column 3 of Table II. The adjusted return for the preevent period, -79 to -6 , is -5.98% but not statistically significant. For the periods -5 to -2 and -1 to 0 , adjusted returns are positive and t -statistics small, 0.89 and 0.33 respectively. We calculate difference in means tests for samples in which Continental Illinois is only a participant in syndications versus primary lender. For the periods -5 to -2 and -1 to 0 , relevant calculated t -values are 2.85 and 2.15, rejecting the null hypothesis of equality at the 1% and 5% levels, respectively. Since funds are supplied by Continental Illinois to firms in both groups, these significant differences

⁸ Courts have ruled that participations are covered by the Securities and Exchange Act of 1933. This appears to require truthful disclosure to participants of all material facts concerning the borrower. See Carter (1976).

⁹ In the three cases Continental Illinois was colead manager. Exclusion of these events has little effect on the pattern of results reported in column 2 of Table II.

cannot be explained by the argument that a change in the quality of these borrowers led to the bank's demise.

Our results indicate that firms with syndicated loans in which Continental Illinois is only a participant are not affected by its distress or rescue. This suggests that although supplying funds, Continental Illinois did not provide asset services such as private information processing and monitoring. In contrast, the evidence suggests client firms are stakeholders in a bank that lends them funds directly or serves as manager of a loan syndication.

C. Multivariate Regression Analysis

In the cross-sectional regressions, cumulative adjusted returns from the event study are the observations for the dependent variables. We estimate separate regressions for the preevent period, -5 to -2 , and the two-day announcement window, -1 to 0 , using weighted least squares. The weighting factor is the standard deviation of the estimation period residuals. To account for the type of lending relationship we specify a qualitative independent variable, *AGENT*, that equals unity if Continental Illinois Bank is lead manager or direct lender, and zero otherwise.

Given the adverse selection problem associated with external financing, it may be particularly difficult (that is, requiring substantially higher interest costs and/or relevant fees) for a highly levered client to replace existing bank debt, access additional borrowings, or obtain an equivalent external monitor after the failure of the bank with which it has maintained a relationship. To test whether there is an adverse effect on expected borrowing costs in response to a bank's distress, we specify as an independent variable the ratio of total debt to the market value of equity, *LEVERAGE*, for each client firm; specifically, long-term plus short-term debt scaled by the market value of equity (share price multiplied by number of shares outstanding) using 1983 year-end data. We also test whether effects of the Continental Illinois Bank's distress and bailout are mitigated for client firms with separate lending relations with other banks or access to public debt markets. The variable *OTHER* equals unity if there is public information that the borrower has a separate relationship with another bank, and zero otherwise. The variable *NOBOND* equals unity if the borrower has no outstanding publicly traded debt, and zero otherwise.

The estimated coefficients for the preevent period, -5 to -2 , are reported in Panel A of Table III. In equation (1), *AGENT*, the sole independent variable, has a significantly negative coefficient of $-.0605$ ($t = -3.07$). When *LEVERAGE* is the sole independent variable, equation (2), the coefficient is significantly negative, $-.0183$ ($t = -3.33$). In equation (3), the sign, size, and significance of both variables are similar to when each is specified separately. In equations (4) and (5), the variables *OTHER* and then *NOBOND* are added to the specification. The variable *OTHER* consistently has a significant, positive coefficient while the variable *NOBOND* has little effect. The coefficients of *AGENT* and *LEVERAGE* remain negative and significant.

Table III
Cross-Sectional Regressions Explaining Cumulative Average
Prediction Errors for 53 Firms with Lending Relations with
Continental Illinois Bank During 1984 as a Function of
Variables for Type of Lending Arrangement and Firm
Characteristics

The dependent variable is the cumulative average prediction errors (CAR) of 53 firms with lending relations with Continental Illinois Bank, where $t = 0$ is July 23, 1984, the date of the FDIC rescue announcement. The regressions are estimated using weighted least squares with the standard error of the estimation period ($t = -347$ to -228) residuals used as the weighting factor. The various explanatory variables are defined as follows: AGENT is a qualitative variable for the type of lending relationship which takes on the value of one when there is public information that the firm has a credit facility issued by Continental Illinois or Continental Illinois is the lead manager in a syndicated credit facility for the firm and takes on the value of zero when Continental Illinois provided only funding as a participant in a loan syndication managed by other banks; LEVERAGE is the ratio of each client firm's total debt (long-term plus short-term debt) to the market value of its equity measured at 1983 year end; OTHER is a qualitative variable that equals one if there is public information indicating a separate relationship with another bank in addition to Continental Illinois and zero otherwise; NOBOND is a qualitative variable for access to public debt markets which takes on the value of one when there is evidence that the firm has no publicly traded debt and zero for firms with documented publicly traded debt; Constant is the intercept term. The t -statistics are in parentheses.

Equation	AGENT (1)	LEVERAGE (2)	OTHER (3)	NOBOND (4)	Constant (5)	R^2 (6)	F (7)
Panel A: Dependent Variable CAR ($-5, -2$)							
(1)	-0.0605 (-3.07)**				0.0036 (0.23)	0.16	9.01**
(2)		-0.0183 (-3.33)**			-0.0025 (-0.18)	0.18	11.10**
(3)	-0.0496 (-2.64)*	-0.0155 (-2.93)**			0.0244 (1.49)	0.28	9.68**
(4)	-0.0735 (-4.10)**	-0.0166 (-3.50)**	0.0795 (3.74)**		0.0258 (1.77)	0.44	12.79**
(5)	-0.0736 (-3.86)**	-0.0166 (-3.42)**	0.0794 (3.69)**	-0.0003 (-0.02)	0.0258 (1.74)	0.44	9.40**
Panel B: Dependent Variable CAR ($-1, 0$)							
(6)	0.0356 (2.46)*				0.0030 (0.26)	0.11	6.05*
(7)		0.0195 (5.82)**			-0.0090 (-1.10)	0.40	33.85**
(8)	0.0228 (1.93)	0.0182 (5.47)**			-0.0213 (-2.08)*	0.44	19.70**
(9)	0.0346 (2.92)**	0.0187 (5.99)**	-0.0393 (-2.80)**		-0.0221 (-2.29)*	0.52	17.53**
(10)	0.0225 (1.98)	0.0170 (5.91)**	-0.0422 (-3.30)**	0.0362 (3.39)**	-0.0247 (-2.81)**	0.61	18.82**

* Significant at the 5% level.

** Significant at the 1% level.

Both equations have a relatively high R^2 of 0.44, indicating that a high proportion of the variation in excess returns is explained by the independent variables.

Regression coefficients are opposite in sign when adjusted returns for the two-day event window, -1 to 0 , are the dependent variable, Panel B. In equation (6), the AGENT variable has a significantly positive coefficient of 0.0356 ($t = 2.46$) and the LEVERAGE variable obtains a significant, positive coefficient of 0.0195 ($t = 5.82$) in equation (7). The results are similar when these variables are jointly specified in equation (8). When the variables OTHER and then NOBOND are added in equations (9) and (10), the coefficients are negative and positive, respectively, and both are highly significant. The coefficients of AGENT and LEVERAGE remain positive and significant in these equations and the R^2 statistics are quite high, reaching 0.61 in equation (10).

Finally, we test whether the size of credit facilities influences adjusted returns. This variable is highly correlated with client firm leverage so the two variables cannot be jointly specified without sharply increasing the standard errors of both coefficients. In Table IV we report estimated coefficients for the size of each firm's credit facilities scaled by its market value of equity, FACILITY, specified in place of LEVERAGE. This variable is likely to underestimate the extent of a banking relationship since there may be additional aspects not reported in data sources we utilize. Overall, the coefficients in Table IV closely parallel results reported when LEVERAGE is specified. We also test whether firm size has a *ceteris paribus* effect on excess returns by specifying the logarithm of the market value of equity as an additional variable. The coefficients (not reported) for firm size are small and not significant.

Overall, the cross-sectional regression results indicate that the extent and type of banking relationship with Continental Illinois (primary lender versus participant), client firm leverage, and the presence of a relationship with another bank have statistically significant effects on excess returns to client firms for the period of the bank's distress and FDIC rescue. There is also evidence that lack of access to public debt markets enhances excess returns in response to the bailout.

IV. Conclusions and Implications for Bank Regulation

We examine the value of bank-borrower relationships and associated implicit contracts which entail processing of private information and monitoring. We find that client firms are stakeholders in the banks from which they borrow. The value of these implicit claims is relationship specific and nonsalvageable so that an unexpected deterioration in bank durability or bank failure imposes costs on client firms. Our empirical evidence indicates that an unexpected increase in the probability of dissolution of bank-borrower relationships is a negative event and the rescue of a bank expected to fail is a positive event for client firms. These effects are exacerbated by client firm

Table IV
Cross-Sectional Regressions Explaining Cumulative Average
Prediction Errors of 53 Firms with Lending Relations with
Continental Illinois Bank During 1984 as a Function of
Variables for Type of Lending Arrangement, Credit Facility
Size, and Firm Characteristics

The dependent variable is the cumulative average prediction errors (CAR) of 53 firms with lending relations with Continental Illinois Bank, where $t = 0$ is July 23, 1984, the date of the FDIC rescue announcement. The regressions are estimated using weighted least squares with the standard error of the estimation period ($t = -347$ to -228) residuals used as the weighting factor. The various explanatory variables are defined as follows: AGENT is a qualitative variable for the type of lending relationship which takes on the value of one when there is public information that the firm has a credit facility issued by Continental Illinois or Continental Illinois is the lead manager in a syndicated credit facility for the firm and takes on the value of zero when Continental Illinois provided only funding as a participant in a loan syndication managed by other banks; FACILITY is the ratio of each client firm's credit facility with Continental Illinois to the market value of firm equity measured at 1983 year end; OTHER is a qualitative variable that equals one if there is public information indicating a separate relationship with another bank in addition to Continental Illinois and zero otherwise; NOBOND is a qualitative variable for access to public debt markets which takes on the value of one when there is evidence that the firm has no publicly traded debt and zero for firms with documented publicly traded debt; Constant is the intercept term. The t -statistics are in parentheses.

Equation	AGENT (1)	FACILITY (2)	OTHER (3)	NOBOND (4)	Constant (5)	R^2 (6)	F (7)
Panel A: Dependent Variable CAR ($-5, -2$)							
(1)	-0.0605 (-3.07)**				0.0036 (0.23)	0.16	9.01**
(2)		-0.0123 (-2.20)*			-0.0184 (-1.48)	0.09	4.94*
(3)	-0.0566 (-2.95)**	-0.0109 (-2.09)*			0.0159 (0.97)	0.22	7.20**
(4)	-0.0796 (-4.20)**	-0.0105 (-2.20)*	0.0737 (3.25)**		0.0155 (1.03)	0.36	9.25**
(5)	-0.0803 (-3.96)**	-0.0106 (-2.11)*	0.0735 (3.20)**	0.0019 (0.10)	0.0154 (1.01)	0.36	6.80**
Panel B: Dependent Variable CAR ($-1, 0$)							
(6)	0.0356 (2.46)*				0.0030 (0.26)	0.11	6.05*
(7)		0.0171 (5.04)**			0.0026 (0.35)	0.33	25.43**
(8)	0.0298 (2.49)*	0.0163 (5.03)**			-0.0155 (-1.53)	0.41	17.12**
(9)	0.0399 (3.20)**	0.0161 (5.15)**	-0.0322 (-2.17)*		-0.0153 (-1.55)	0.45	13.82**
(10)	0.0294 (2.36)*	0.0138 (4.44)**	-0.0354 (-2.50)*	0.0313 (2.56)*	-0.0169 (-1.80)	0.52	13.18**

* Significant at the 5% level.

** Significant at the 1% level.

leverage or the size of the credit facility, but are mitigated if firms maintain borrowing relations with other banks. Diamond (1991a) argues that banks maintain valuable relationships and provide substantial asset services for firms that are not publicly traded and have little access to financial markets. Since we find significant costs for firms with equity traded on major exchanges, borrowers whose access to external funding is limited to banks are likely to sustain more significant losses from impairment of banking relations.

Bank insolvency typically leads to regulator-arranged mergers and acquisitions, including FDIC auctions. This approach probably reduces the loss in the value of bank-borrower contracts relative to liquidation. The relationship-specific character of lending suggests a more active market for corporate control is a preferable alternative to bank industry exit via failure or liquidation. The banking industry is characterized by severe limitations as to the set of agents who can bid for control. Liberalizing restrictions on bidding could make the market for bank control more effective by permitting a wider set of managerial teams to compete for control. The price system is an effective mechanism to transfer control since bidders have an incentive to structure offers to maximize the value of banking relationships and associated monitoring and certification services.

Appendix

Examples of lending relationships involving client firms and Continental Illinois Bank as direct lender or lead manager (agent) of loan syndications from corporate annual reports.

A. Galaxy Carpet Mills, Inc.

A.1. 1983 Annual Report

“On January 17, 1983, the Company amended and restated its bank credit agreement with the Continental Illinois National Bank and Trust Company of Chicago, to be effective retroactively to December 1, 1982. Under the terms of agreement the Bank will make revolving loans to the Company in amounts not to exceed \$12,000,000, with such loans convertible to a term loan on June 17, 1985 . . .

“The Company’s loan agreements include, among other provisions, requirements that the Company maintain minimum working capital of \$27,000,000 and not allow the ratio of total debt to net worth to exceed 2 to 1. The loan agreements were amended effective October 1, 1983 to require the Company to maintain a current ratio of 2.15 to 1 through December 31, 1983 and 2.25 to 1 thereafter. Management believes that as in the past the current amendment will be renewed, if necessary. The agreements contain certain other restrictions, principally relating to the payment of cash dividends and the repurchase of the Company’s capital stock.”

A.2. 1984 Annual Report

"Under the terms of the bank credit agreement, as amended and restated, the Continental Illinois National Bank and Trust Company of Chicago will make revolving loans to the Company in amounts not to exceed \$12,000,000. Such loans are convertible to a term loan on June 17, 1986 . . .

"The Company's loan agreements, as amended, include, among other provisions, requirements that the Company maintain minimum working capital of \$38,000,000; not allow the ratio of total debt to net worth to exceed 2 to 1, maintain a current ratio of 2 to 1. The agreements contain certain other restrictions, principally relating to the payment of cash dividends and the repurchase of the Company's capital stock."

*B. Waste Management, Inc.**B.1. 1983 Annual Report*

"Under the Company's revolving credit agreement, as amended with five banks, including Continental Illinois National Bank and Trust Company of Chicago, for itself and as agent, the banks have agreed to loan the Company an aggregate of \$100,000,000 on an unsecured basis. The agreement provides for conversion of current loans into six-year term loans on June 30, 1984 (subject to extension to any second subsequent calendar year by agreement of the banks) . . .

"Agreements . . . require the Company to maintain certain financial ratios and impose certain restrictions on, among other things, additional debt, new lines of business, payment of cash dividends and certain investments."

B.2. 1984 Annual Report

"Under the Company's revolving credit agreement, as amended, with five banks, including Continental Illinois National Bank and Trust Company of Chicago, for itself and as agent, the banks have agreed to loan the Company an aggregate of \$400,000,000 on an unsecured basis. The agreement provides for conversion of current loans into six-year term loans on June 30, 1986 (subject to extension to any second subsequent calendar year by agreement of the Company and the respective banks) . . .

"Agreements . . . require the Company to maintain certain financial ratios and impose certain restrictions on, among other things, additional debt, new lines of business, payment of cash dividends and certain investments."

*C. Lear Petroleum Corporation**C.1. 1983 Annual Report*

"On March 31, 1983, as amended December 23, 1983, the Company entered into a revolving credit agreement with Continental Illinois National Bank and Trust Company of Chicago ("Continental") and three other domestic

banks replacing a revolving credit agreement dated May 22, 1981. The agreement provides financing in an amount equal to the lesser of \$400,000,000 or an amount equal to its "Borrowing Base." . . . The "Borrowing Base" is defined in the agreement as an amount of credit determined by the banks to be made available to the Company. Such determination is made semiannually by the bank based upon reports of independent petroleum engineers setting forth proven and producing oil and gas reserves owned by the Company and a projection of the rate of production and net operating income with respect thereto. The agreement does not grant the bank a lien on the Company's properties; however, the agreement does impose an obligation upon the Company and its subsidiaries to grant a security interest to the bank in its properties, should the bank so request. . . .

"Certain restrictions have been placed on the Company and its operations in connection with the credit agreement. The more significant of these restrictions include the maintenance of \$1 of working capital, the Company's working capital coverage of fixed charges, consolidated net worth in excess of \$75,000,000, consolidated liabilities, not including subordinated indebtedness, at less than 200% of consolidated net worth increased by subordinated indebtedness, and limitations on payment of cash dividends (not to exceed 10% of the consolidated net income of the Company for the two fiscal years immediately preceding the fiscal year during which the dividend is paid), investments in or disposals of producing properties and incurrence of additional indebtedness."

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