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Since Mexico's moratorium on foreign debt payments in August 1982, and the subsequent debt servicing problems faced by countries such as Argentina, Brazil, and Venezuela, the financial press has devoted an increasing amount of attention to the plight of those banks with significant exposure to troubled foreign borrowers. The goal of this paper is to measure how news about the deteriorating credit quality of foreign loans, especially those to Latin American nations, affected bank stock prices. In particular, we are interested in determining the market's response to Latin American loan exposure in 1982, when most of the decisive events occurred, compared with its response in 1983, when press coverage of the international debt crisis increased dramatically, but after a great deal of relevant information had already appeared during the previous year.

A key issue is the extent to which the market incorporates the riskiness of foreign loans in valuing bank stocks. This can be studied by seeing whether the market's reaction to new information concerning the collectibility of Latin American loans is proportional to the degree of each bank's exposure to these loans. One reason why bank stock prices may not fully discount the effects of foreign loan exposures, at least prior to 1983, is that until that time banks were not required to, and generally did not, report the breakdown of their foreign loan portfolios by country.

This raises the classic question of whether, in the absence of disclosure, investors are able to discriminate between those banks with extensive foreign loan portfolios and those with lesser exposures. The answer to this question, which bears on the informational efficiency of the stock market, is of special interest to investors and various regulatory agencies. If the market is unable to effectively distinguish between banks with varying degrees of foreign loan exposures, regulatory intervention to force disclosure of these exposures may be justified. On the other hand, evidence that the market is aware of the foreign loan exposures of banks would suggest that mandated disclosure is redundant.

If the exact dates when the key events in the international debt crisis occurred could be specified, a standard event study approach could be employed. Unfortunately, it is nearly impossible to identify the relevant event dates for the international debt crisis a priori. The financial problems of Latin American countries did not suddenly arise on a specific date in 1982 and neither did information about them. Rather, as these problems developed over time, information about them slowly leaked out.

Consider for example, the case of the Falklands War in 1982. This war had a dramatic impact on Argentina's ability to repay its foreign debts, but the relevant event date is difficult to identify. Was it April 2 when Argentina first invaded the Falklands or April 3 when the British government imposed economic sanctions and froze Argentine deposits in London banks? Perhaps it was April 5 when the British fleet set sail for the Falklands or April 10 when the Common Market agreed to an unspecified ban on imports from Argentina. Maybe it was April 15 when the Common Market imposed its toughest economic sanctions ever on Argentina, April 28 when England declared a 200-mile war zone around the Falklands or even April 29 when Argentina retaliated with its own

200-mile war zone. Perhaps, it was May 3 when an Argentine cruiser was sunk with a loss of 1,842 lives or May 4 when a British destroyer was sunk? Other possible event dates include May 5 when Argentina devalued its peso by 14.3 percent, May 11 when Great Britain invaded the Falklands, June 14 when Port Stanley fell, June 15 when Argentina surrendered, June 16 when President Galtieri was ousted, and June 22 when the army selected General Bignone as the new president.

The example illustrates the problem we face. Specificially: We think that the potential for significant losses on Latin American loans is an important determinant of bank stock returns but we don't know when information about these problems first reached the market. Thus, rather than rely on the usual event study methodology, we develop a new approach designed to measure the impact of Latin American information on the pricing of bank stocks.

The paper is organized as follows. The second section presents the competing hypotheses that have been put forth to explain the reaction of bank stocks to Latin American information, along with a discussion of our procedure for testing the hypotheses. Next, the analysis and results are presented in the third section. The fourth section contains a summary and the conclusions.

Hypotheses and Methodology

To organize the presentation of the empirical results, we begin by describing three basic "hypotheses" which predict different responses of bank stock prices to Latin American news.

1. The news regarding Latin America in 1982 and 1983 had little bearing on the price of bank stocks. This would be the case, for instance, if the news did not significantly affect investor beliefs regarding the

probability that Latin countries would repay their loans. It would also be the case if investors assumed that international organizations, or the U.S. government, were willing to stand behind the loans. Henceforth, we will call the first interpretation the "no event" hypothesis.

2. Latin American information is relevant for the pricing of bank stocks, but the market could not properly discount this information prior to 1983 because banks were not required to report exposure on a country-by-country basis. This view, which we call the "no disclosure" hypothesis, is partially supported by the work of Schoder and Vankudre (1984). On the basis of a detailed study of the reaction of bank stocks to the Mexican debt crisis of August 17-20, 1982, the authors conclude that, "In the absence of publicly available information, stock prices did not correctly reflect the exposure of individual banks to Mexico."

3. Latin American news is important and the market properly discounts it. We label this third view the "standard efficient market" hypothesis. If this hypothesis is correct, the impact of Latin American events should be observable in both 1982 and 1983, because market analysts are able to determine the importance of foreign loan exposures even without forced disclosure.

The type of test used to distinguish among the competing hypotheses depends on the information arrival process. Classical event studies typically assume that information arrives in a form akin to discrete "quanta" and that the day of arrival of new information, such as an earnings announcement or announcement of a stock split, can be identified. This makes powerful tests possible since the variance of the rate of return is approximately a linear function of the observation interval. Over short intervals, therefore, the variance of stock returns is quite low, assuring a high signal-to-noise ratio and allowing the impact of an event to be isolated fairly easily. In the case of Latin America, as we noted eariler, the standard methodology is not directly applicable.

First, potential "events" are difficult to pin down. A detailed search of newspaper and magazine articles appearing during the years 1982 and 1983 revealed over 180 different dates on which important events relating to the credit risk of Argentina, Brazil, Chile, Mexico, and Venezuela occurred. Since almost all of these stories appeared between Monday and Friday, this means that on over one-third of the trading days during this two-year period (assuming 250 trading days annually), new information concerning the riskiness of loans to these five Latin American countries reached the market. It is evident that under such circumstances we cannot isolate a few key events and study them to determine the effects of problem loans on bank stock prices.

Second, as Schipper and Thompson (1983) stress in their study of the effects of merger activity on stock prices, an "event" must be defined relative to investor expectations. In the case of stock splits, for example, the event occurs when investors become aware of the impending split, not when the split occurs. Turning to Latin America, it is almost impossible to determine when the opinions of key investors would have changed. This problem is particularly acute because some investors, such as commercial banks with Latin loans outstanding, are likely to have been privy to inside information at various times.

The problem, therefore, is to design a test which can be used to decide whether Latin American news in 1982 and 1983 affected the pricing of bank stocks, without identifying specific event dates. The procedure we employ is a sequence of cross-sectional regressions using a sample of 44 NYSE-listed banks (listed in Appendix A) for which Salomon Brothers provided us with data on Latin American exposures. For each sample period, the raw returns, or excess returns, for the 44 banks are regressed on Latin American exposure as a fraction of assets and other variables to be discussed later. Assuming that the left-out variable problem and the measurement error problem are not too severe, the coefficient of the exposure variable should be significant during periods when Latin American news affects the probability of repayment.

The information arrival problem is handled by varying the observation interval for the cross-sections. The first cross-section covers the entire two-year sample period, next the observation interval is reduced to one year, then one month, and finally one day. If Latin American information arrives in a few large "quanta", highly significant t-statistics should be observed on arrival days, with the sign of the exposure variable being positive on "good news" days and negative on "bad news" days. In addition, the t-statistic will decline as the observation interval is increased, because good news and bad news days tend to cancel each other, causing the signal-to-noise ratio to decline.

On the other hand, if information of the same type leaks into the market slowly over an extended period, as may have occurred during the Falklands War, each single piece of news can have a small effect on the relative prices of bank stocks, while the cumulative impact of all the events is significant. Under these circumstances, the longer the interval studied, the higher the signal-to-noise ratio and the greater the chances of finding a significant effect. A formal proof of this proposition is given in Appendix B where we show that the t-statistic will rise as the observation interval is increased if news is primarily favorable, or--as in the case of Latin American loans in 1982 and 1983--unfavorable. One of the attractive aspects of this methodology is that it allows the data to speak directly; we are not forced to impose our priors on the study.

Three different measures of return are used in the cross-sectional regressions. The first is simply the raw return. The second is the excess return defined as $r_i - \hat{\beta}_i r_m - (1 - \hat{\beta}_i) r_f$. The beta is estimated using the technique described by Dimson (1979) to correct for non-synchronous trading, r_f is the Treasury bill rate, and r_m is the return on the S & P 500.[1] Because of the high market return during the sample period (the S & P 500 rose almost 30 percent during 1982), the measure of excess return for the longer observation interval is clearly sensitive to the estimate of beta. For this reason, a third set of excess returns was calculated using the Bayesian procedure suggested by Vasichek (1973) to adjust the beta estimates. This procedure has the effect of shrinking all the estimates toward the grand mean, thereby reducing the impact of the estimation error.

Surprisingly, we find that the cross-sectional estimates, even for the biannual and annual regressions are nearly identical for all three return measures. For example, in the 1982 annual cross section, the coefficient (t-statistic) on the Latin American exposure variable is -4.792 (-3.053) for the raw returns, -4.795 (-3.056) for the Dimson beta excess return, and -4.793 (3.0572) for the adjusted beta excess return.

Comparable numbers for the energy loan exprosure variable in the 1982 annual cross section are -2.574 (-3.122), -2.575 (-3.127), and -2.589 (-3.143). The apparent explanation for this result is that beta, measured either way, is not highly correlated with the other explanatory variables. (The correlation matrix for the Dimson betas is presented in Appendix C.) In this case, using raw returns, which is essentially equivalent to omitting beta from the cross-sectional regression, does not significantly bias the other coefficients.

The left-out variable problem is a potentially serious one for our methodology, especially if the effect we are trying to detect occurs only gradually over time. In order to deal with this problem, the cross-sectional regressions include a variety of other variables, such as energy loans and market capitalization, that may be correlated with the degree of Latin American loan exposure. The lack of significance of any of the correlated variables tends to indicate that this is not an important problem for our study. There is, of course, always the possibility that we omitted some unknown variable that is highly correlated with Latin loan exposure.

The key independent variable in the cross-sectional regressions is total loan exposure to the five largest Latin American debtors--Argentina, Brazil, Chile, Mexico, and Venezuela--on December 31, 1982, expressed as a fraction of total assets. Other independent variables, all based on their year-end 1982 values (using data collected from 10-K statements and The Wall Street Journal), include market capitalization as well as the ratio to total assets for each of the following parameters: total non-Latin American foreign loans, energy loans, loans purchased from Penn Square Bank, real estate and net purchased liabilities. The latter variable is a measure of the interest rate sensitivity of bank earnings.[2] All other things being equal, the larger this variable, the bigger the jump in bank earnings for a given decline in interest rates. It is included here because the big money center banks, which have the largest Latin American exposures, are also affected the most by interest rate changes. Thus, they were probably the principal beneficiaries of the steep decline in U.S. interest rates in the second half of 1982.

Market capitalization is included in the cross-sectional regressions because, as indicated above, the banks with the largest Latin American loan exposures are also the largest banks in our sample. Omitting it would lead the Latin loan exposure variable to serve double duty, as a proxy for size as well as for troubled foreign loans. In its absence, therefore, the small firm effect could cause the coefficient on Latin loan exposure to be more negative and more significant than it otherwise would be. Considering that during 1982 the market rose almost 30 percent, size could be an important source of differential returns among banks ranked by Latin American exposure.

In addition, for each Texas bank in our sample, we calculate the fraction of energy loans to total assets as of December 31, 1982 based on data supplied in their 10-K statements. We include this variable because the sharp drop in oil prices in 1982 is likely to have affected the credit quality of both energy loans and loans to oil-producing Latin American countries such as Mexico and Venezuela. Texas banks, with their high energy loan exposures, are the most obvious bank victims of the drop in oil prices. Although none of the non-Texas banks in our sample, except for Seafirst, publish data on their energy loan exposures, we include as a separate variable the loans bought from Penn Square Bank since most of them were to high-risk energy producers. The failure of Penn Square Bank, on July 5, 1982, underlined the riskiness of these loans.

In summary, the cross-sectional regression for every observation interval is

$$r_{it} = a_{0t} + b_{it}L_i + b_{2t}E_i + b_{3t}P_i + b_{4t}R_i + b_{5t}F_i + b_{6t}N_i + b_{7t}S_i + U_{it} \quad (1)$$

where r_{it} = the return for bank i over the interval t, measured as either the raw return or the excess return

L_i = total Latin American exposure for bank i as a fraction of total assets

E_i = reported energy loans for bank i as a fraction of total assets

P_i = Penn Square loans purchased by bank i as a fraction of total assets

R_i = real estate loans for bank i as a fraction of total assets

F_i = non-Latin American foreign loans for bank i as a fraction of total assets

N_i = net purchased liabilities for bank i as a fraction of total assets

S_i = size of bank i measured by its market capitalization (in billions of dollars)

U_{it} = an error term with mean 0

The explanatory variables in the regressions are based on book values, such as book equity, book assets, and book loans outstanding to Latin American countries. Because the ratio of book values to market values is not constant across banks, and because market values should be included in the regression, the right-hand variables are measured with error. In addition, all the independent variables are set equal to their December 31, 1982 values even though these parameters are changing over time. As a result of the measurement error introduced by these procedures, the coefficient estimates will be biased toward zero and it is less likely significant correlations will be observed.

Analysis and Results

Equation (1) is estimated using biannual, annual, and monthly return data for the years 1982 and 1983. The equation is also estimated for 71 individual days. As mentioned above, three different measures of return are employed--the raw return, the excess return using the Dimson beta, and the excess return using a Bayesian-adjusted Dimson beta--but the results are not sensitive to the return measure selected. For this reason, and to save space, we report only results for excess returns using the Dimson beta.

The results, which are presented in Tables 1 and 2, can be easily summarized. Most importantly, Latin American loan exposure is a significant determinant of 1982 and 1982-83 returns, although it not significant at the 5 percent level in any individual month with the exception of July 1982. (It is significant at the 10 percent level in March and April of 1982). This apparently anomalous result--statistical significance in the annual and bi-annual data but not, in general, in the monthly data--can be accounted for by our "dribs and drabs" hypothesis, namely, that predominantly negative information was slowly disseninated throughout this time period. This interpretation is supported by the fact that Latin loan exposure has a negative coefficient in 19 out of 24 months during the years 1982-83.

INSERT TABLES 1 AND 2 HERE

The results imply that during 1982, each percentage point increase in the ratio of Latin loan exposure to total assets cost a bank, on average, 4.8 percent in annual return. Thus, the money center banks, which averaged about 7 percent in Latin loans, suffered an average loss in return of around 33 percent. Over the two-year period, 1982-1983, each one percent increase in Latin loan exposure caused returns to be 10.1 percent lower than they would have been otherwise. Taking this coefficient at face value, the December 31, 1983 stock price of Manufacturers Hanover--whose Latin loan exposure was 10.6 percent of its assets--was less than half what it otherwise would have been. The loss in return for the average money center bank was on the order of 70 percent.

Surprisingly, non-Latin American foreign loans had a positive impact on stock prices during 1982, perhaps because this variable serves as a proxy for the degree of bank loan diversification. This demonstrates the market's ability to differentiate between troubled and sound foreign loans.

Energy loan exposure is the most significant variable in 1982, at the 4 percent level, even though its significance never exceeds 9 percent in the monthly regressions, and that in only one month (January). The Penn Square loan variable is significant in July 1982, when the Penn Square Bank failed, and April 1983 but it is not significant in the annual or biannual data. This is what we would expect from a situation that conforms more closely to the conditions necessary for a successful event study - an event whose occurrence can be pinpointed in time and where the relevant information reached the market over a relatively short period. The other variables, including size, real estate loans, and net purchased liabilities, are not statistically significant in either the monthly or annual data. To check the results, we repeated all the calculations using ratios based on book equity instead of book assets. It turns out that the results using equity are virtually identical. Thus only results using assets are reported in this paper.

As noted earlier, we ran 71 daily regressions. The daily regressions included April 1982, July 1982, August 1982, and the first ten days of September. The days were selected using a combination of prior knowledge and the monthly regression results. For example, July 1982 is included because the Latin exposure variable was significant in that month. April is included because of the Falklands War, the mass withdrawal of deposits from Brazilian banks, and the suspension of principal payments on $2 billion in foreign debt by Mexico's largest private company. In August, the Mexican debt crisis erupted, Chile floated its peso, Venezuela had its triple-A credit rating lowered to double-A by Standard & Poor, and Brazil contemplated a foreign debt renegotiation. Early September saw a continuation of Mexico's debt problems.

Essentially all the daily regression coefficients for Latin exposure are insignificant. Table 3 presents the results of 5 out of the 71 equations for days that we judged to be the most important in terms of new Latin American information reaching the market. These days include April 2 (Argentina invades the Falkland Islands), April 21 (Grupo Alfa, Mexico's largest private company, suspends principal payments on $2 billion owed to foreign banks), August 12 (Mexico announces it will close the foreign exchange market and freeze all dollars held at local banks), August 19 (rumors that Mexico is about to default on its foreign debt sweep through the financial markets), and September 1 (Mexico nationalizes the country's 59 private banks and then severs most telephone and telex lines to the local representative offices of foreign banks; the dollar is declared to be an "illegal currency").

Interestingly enough, not one of the Latin loan exposure coefficients is significantly negative on any of these five days. In fact, the only daily regression with a significant Latin loan exposure coefficient is April 2 and then it is positive! Additionally, none of the coefficients from regressions around these dates are significant. Not until April 8 is the Latin loan coefficient negative. Perhaps the most surprising result of all is that during August, when Mexico was facing disaster, not one of the daily regression coefficients on Latin loan exposure is significantly negative at the 5 percent level.

This finding casts new light on the work of Schoder and Vankudre (1984). Based on an hour-by-hour study of the reaction of bank stock prices to the Mexican debt crisis of August 18-20, 1982, they conclude, as noted earlier, that, "In the absence of publicly available information, stock prices did not correctly reflect the exposure of individual banks to Mexico." Our results indicate that this conclusion is incorrect. The market did recognize the effect of Latin exposure in 1982, but the information arriving on August 18-20 was not as significant as Schoder and Vankudre believed.

Finally, we find that the most important event day, in terms of its impact on banks with Latin loan exposure, is July 6. This is the first trading day following the collapse of Penn Square Bank on July 5. The results of this regression, which might reflect worry about the impact of collapsing oil prices on Mexico and Venezuela, are shown in Table 4.

Summary and Conclusions

This paper presents convincing evidence that stock prices during 1982 and 1983 reflected the Latin loan exposures of individual banks. This means that in 1982, despite the absence of specific publicly available information about foreign lending, the market was able to differentiate between banks with varying degrees of Latin loan exposure. Whether or not the penalty assigned to this loan exposure was correct or not, only time will tell. However, our results indicate that this penalty was not economically insignificant; returns for big money center banks, those with the largest Latin loan exposures, were approximately 70 percentage points lower than they would have been if no Latin loans were made.

Our results also indicate that negative information about Latin America arrived slowly, but continuously, throughout 1982. For this reason, studies that try to specify key event dates and use standard event study analysis, such as Schoder and Vankudre (1984), tend to understate the impact of Latin exposure on the relative pricing of bank stocks.

Footnotes

1. The Dimson method is used because of its computational simplicity. Though Cohen et al. (1983) and Fowler and Rorke (1983) show that Dimson's method does not always produce unbiased estimates, Dimson (1982) shows that the bias is trivial.

2. Net purchased liabilities equals the amount of short-term interest-bearing liabilities, including domestic time CDs and other domestic time deposits over $100,000, deposits in overseas offices, Federal funds purchased and securities sold under agreement to repurchase, commercial paper, floating rate notes (if puttable at the holder's option) and other short-term borrowings. These are offset by Federal funds sold and securities purchased under agreement to resell and interest-bearing deposits with banks. This number was calculated by Salomon Brothers for most of the banks in our sample.

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Appendix A

Sample of 44 Banks

AmSouth Bancorp

BanCal Tri-State Corp.

Bank of New York Co. Inc.

Bank of Virginia Co.

BankAmerica Corp.

Bankers Trust N.Y. Corp.

Barnett Banks

Chase Manhattan Corp.

Chemical N.Y. Corp.

Citicorp

Continental Illinois Corp.

Crocker National Corp.

Equimark Corp.

First Atlanta Corp.

First City of Texas

First Interstate Bancorp

First National Boston Corp.

First National State Bancorp

First Pennsylmania Corp.

First Virginia Banks, Inc.

First Wisconsin Corp.

Harris Bankcorp

Interfirst Corp.

Irving Bank Corp.

Manufactures Hanover Corp.

Marine Midland

Mellon National Corp.

Mercantile Texas Corp.

J. P. Morgan & Co.

NBD Bancorp

NCNB Corp.

Northwest Bancorp.

Republic N.Y. Corp.

RepublicBank Corp.

Seafirst Corp.

Security Pacific Corp.

Southeast Bankiong Corp.

Southwest Bancshares

Sun Banks Florida Inc.

Texas Commerce

United Jersey Banks

Wachovia Corp.

Wells Fargo & Co.

Appendix B

The relation between the cross-sectional estimates of the coefficients and the observation interval is best illustrated by considering a simple model with one right-hand variable. The derivation for the general case is identical, but the notation is more cumbersome.

Consider a cross-sectional regression of the form

$$r_{it} = b_t x_i + u_{it} \tag{1a}$$

where

r_{it} = the continuously compounded excess return on security i over the period from t to t + 1

x_i = the cross-sectional variable (in our case, Latin American exposure)

and the data are normalized to have mean zero.

In equation (1a) it is assumed that x_i is constant through time and that

$$\text{cov}(u_{it}, u_{is}) = \sigma_i^2, \text{ if } s = t$$
$$\text{cov}(u_{it}, u_{is}) = 0 \text{ if } s = t.$$

for all i.

The cross-sectional estimate of the slope coefficient is

$$\hat{b}_t = \frac{\Sigma\, r_{it} x_i}{\Sigma\, x_i^2}\ .$$

Note that the estimate is a function of the time at which the cross-section is observed, because the relation between security returns and Latin American exposure depends on the information that arrives during the interval t to t + 1. If the news regarding the quality of Latin

American loans is good, large exposures will be associated with high returns and $\hat{b}_t$ will be positive. On the other hand, bad news will cause $\hat{b}_t$ to be negative. If no new information arrives, or if good and bad news are mixed together with neither predominating, then $\hat{b}_t$ should be insignificantly different from zero.

Now suppose that the observation interval is increased and a model of the form

$$R_{it}^T = B_T x_i + U_{it}^T \tag{2a}$$

is estimated. In equation (2a),

R_{it}^T = the excess return on security i over the period from t to t + T. By definition,

$$R_{it}^T = \sum_{s=t}^{t+T-1} r_{is}. \tag{3a}$$

Combining (1a), (2a) and (3a), along with the assumption that x_i remains constant through time, immediately implies that

$$B_T = \sum_{s=t}^{t+T-1} b_s, \tag{4a}$$

and

$$U_{it}^T = \sum_{s=t}^{t+T-1} u_{is}. \tag{5a}$$

From (5a) and the assumption of time independence of the residuals, it follows that the standard error of the estimate, as a function of T, will be on the order of $\sqrt{T}$. Under the assumption that information arrives randomly, B_t has mean zero. For these reasons the t-statistic for the estimate of B_t will be on the order of $1/\sqrt{T}$.

However, this need not be true for an individual sample, particularly if the sample is picked on the basis of a priori information. For example, if a sample is selected where bad news arrives every day, equation (4a) implies that B_T will be of order T (relative to b_t). In that case the t-statistic is of order $\sqrt{T}$, and will increase as the sample period is lengthened.

Appendix C
Correlation Matrix for the Explanatory Variables in the Cross-Sectional Regression

	Beta	Latin Exposure	Energy Loans	Penn Square Loans	Real Estate Loans	Other Foreign Loans	Net Purchased Liabilities	Market Capital-ization
Beta	1.00000	0.32405	-0.18782	-0.02910	-0.17956	0.15779	0.45252	0.17945
	(0.0000)*	(0.0319)	(0.2221)	(0.8512)	(0.2435)	(0.3063)	(0.0020)	(0.2438)
Latin Exposure	0.32405	1.00000	-0.21541	-0.10080	-0.10065	0.43304	0.62080	-0.12984
	(0.0319)	(0.0000)	(0.1602)	(0.5150)	(0.5156)	(0.0033)	(0.0001)	(0.4009)
Energy Loans	-0.18782	-0.21541	1.00000	0.22279	0.03121	-0.18861	0.16317	0.54317
	(0.2221)	(0.1602)	(0.0000)	(0.1461)	(0.8406)	(0.2201)	(0.2899)	(0.0001)
Penn Square Loans	-0.02910	0.10080	0.22279	1.00000	-0.05728	-0.00761	0.22325	-0.05003
	(0.8512)	(0.5150)	(0.1461)	(0.0000)	(0.7119)	(0.9609)	(0.1452)	(0.7471)
Real Estate Loans	-0.17956	-0.10065	0.03121	-0.05728	1.00000	0.51217	-0.16149	0.03311
	(0.2435)	(0.5656)	(0.8406)	(0.7119)	(0.0000)	(0.0004)	(0.2950)	(0.8310)
Other Foreign Loans	0.15779	0.43304	-0.18861	-0.00761	0.51217	1.00000	0.39753	-0.08110
	(0.3063)	(0.0033)	(0.2201)	(0.9609)	(0.0004)	(0.0000)	(0.0075)	(0.6008)
Net Purchased Liabilities	0.45252	0.62080	0.16317	0.22325	-0.16149	0.39753	1.00000	0.16741
	(0.0020)	(0.0001)	(0.2899)	(0.1452)	(0.2950)	(0.0075)	(0.0000)	(0.2774)
Market Capitali-zation	0.17945	-0.12984	0.54317	-0.05003	0.03311	-0.08110	0.16741	1.00000
	(0.2438)	(0.4009)	(0.0001)	(0.7471)	(0.8310)	(0.6008)	(0.2774)	(0.0000)

* Number in parenthesis is the probability of seeing an estimated correlation coefficient that large if the true correlation is 0.

TABLE 1
Biannual and Annual Regression Results

Observation interval	Latin exposure	energy loans	Penn Square loans	real estate loans	other foreign loans	net purchased liabilities	market capitalization	R^2
1982-1983	-10.104	-4.997	-7.723	1.030	0.0684	0.008	-0.255	0.458
	(-3.262)	(-3.072)	(-0.837)	(1.490)	(0.179)	(1.520)	(-0.922)	
1982	-4.795	-2.575	-1.203	-0.045	0.322	0.002	0.0241	0.421
	(-3.056)	(-3.127)	-0.257)	(-0.129)	(1.662)	(0.603)	(0.172)	
1983	-3.990	-2.193	-10.578	0.968	-0.344	0.007	-0.345	0.283
	(-1.565)	(-1.637)	(-1.392)	(1.701)	(-1.094)	(1.633)	(-1.514)	

t-statistics in parentheses

TABLE 2
Monthly Regression Results: 1982 and 1983

Observation interval	Latin exposure	energy loans	Penn Square loans	real estate loans	other foreign loans	net purchased liabilities	market capitalization	R^2
1982								
January	0.261 (0.476)	-0.503 (-1.747)	0.758 (0.464)	0.094 (0.770)	-0.068 (-1.004)	0.001 (1.013)	0.052 (1.053)	0.131
February	-0.458 (-0.782)	0.018 (0.058)	-0.080 (-0.046)	-0.259 (-1.978)	0.184 (2.540)	0.000 (0.374)	-0.049 (-0.934)	0.261
March	-0.784 (-1.755)	-0.284 (-1.212)	-1.333 (-1.002)	0.179 (1.797)	-0.043 (-0.782)	0.002 (2.236)	0.044 (1.096)	0.246
April	-0.833 (-1.694)	-0.237 (-0.916)	0.368 (0.251)	-0.033 (-0.302)	0.022 (0.370)	0.002 (1.884)	0.026 (0.514)	0.152
May	-0.554 (-0.972)	0.029 (0.096)	-1.090 (-0.642)	0.053 (0.420)	-0.031 (-0.451)	0.001 (1.015)	0.012 (0.243)	0.073
June	-0.386 (-0.702)	-0.335 (-1.160)	-0.639 (-0.390)	-0.078 (-0.632)	0.047 (0.699)	0.002 (1.602)	0.091 (1.857)	0.248
July	-1.687 (-2.527)	-0.529 (-1.507)	-4.779 (-2.401)	-0.055 (-0.366)	0.070 (0.855)	0.002 (1.771)	-0.058 (-0.973)	0.337
August	-0.180 (-0.293)	-0.081 (-0.253)	1.833 (1.002)	-0.117 (-0.852)	0.048 (0.634)	-0.001 (-1.081)	0.021 (0.381)	0.077
September	-0.262 (-0.438)	-0.434 (-1.382)	-1.776 (-0.995)	-0.116 (-0.867)	0.096 (1.301)	0.001 (0.778)	0.011 (0.208)	0.219
October	0.154 (0.143)	-0.312 (-0.553)	-1.102 (-0.344)	0.070 (0.290)	-0.083 (-0.626)	0.002 (1.091)	0.021 (0.214)	0.062
November	-0.511 (-0.808)	0.077 (0.233)	-1.032 (-0.548)	0.056 (0.397)	0.001 (0.015)	0.000 (0.033)	-0.050 (-0.879)	0.071
December	0.558 (1.085)	-0.288 (-1.065)	1.371 (0.894)	-0.106 (-0.923)	0.010 (0.155)	-0.001 (-1.315)	0.051 (1.103)	0.136
1983								
January	0.218 (0.319)	-0.155 (-0.430)	-3.845 (-1.884)	0.125 (0.820)	-0.057 (-0.680)	0.002 (1.344)	-0.049 (-0.806)	0.166
February	-0.627 (-1.417)	-0.548 (-2.357)	1.137 (0.862)	0.093 (0.942)	-0.022 (-0.411)	0.002 (2.037)	-0.005 (-0.127)	0.2072

t-statistics in parentheses

Observation interval	Latin exposure	energy loans	Penn Square loans	real estate loans	other foreign loans	net purchased liabilities	market capitalization	R^2
1983 cont'd								
March	-0.713	-0.638	-1.340	-0.028	0.052	0.001	-0.023	0.226
	(-1.172)	(-1.998)	(-0.739)	(-0.205)	(0.690)	(0.670)	(-0.424)	
April	-0.196	0.013	-5.901	0.086	-0.092	0.002	-0.078	0.221
	(-0.284)	(0.036)	(-2.861)	(0.555)	(-1.076)	(1.437)	(-1.268)	
May	-0.109	0.072	-0.899	0.003	-0.046	0.000	0.039	0.121
	(-0.239)	(0.301)	(-0.662)	(0.033)	(-0.819)	(0.354)	(0.960)	
June	0.240	0.081	0.585	0.199	-0.083	0.000	0.007	0.119
	(0.481)	(0.309)	(0.393)	(1.785)	(-1.347)	(0.095)	(.168)	
July	-0.518	-0.248	-0.217	-0.073	0.079	0.000	-0.018	0.118
	(-0.977)	(-0.891)	(-0.137)	(-0.620)	(1.208)	(0.411)	(-0.380)	
August	-0.151	-0.107	-1.977	0.029	-0.126	0.002	0.006	0.092
	(-0.185)	(-0.248)	(-0.810)	(0.157)	(-1.248)	(1.113)	(0.078)	
September	-0.652	0.023	-0.718	0.105	-0.047	0.001	-0.041	0.902
	(-1.274)	(0.086)	(-0.471)	(0.918)	(-0.742)	(1.286)	(0.907)	
October	-0.197	-0.267	0.904	0.033	0.040	0.001	-0.006	0.214
	(-0.589)	(-1.518)	(0.905)	(0.448)	(0.956)	(0.870)	(-0.211)	
November	-0.403	-0.244	-0.824	-0.084	0.043	0.001	-0.021	0.157
	(-0.844)	(-0.974)	(-0.579)	(-0.789)	(0.730)	(1.260)	(-0.491)	
December	-0.106	0.056	-0.521	0.093	-0.027	0.001	-0.027	0.058
	(-0.202)	(0.204)	(-0.333)	(0.793)	(-0.421)	(1.164)	(-0.579)	

t-statistics in parentheses

TABLE 3

Daily Regression Results for Five Key Event Days

	Latin loans	energy loans	Penn Square loans	real estate loans	other foreign loans	net purchased liabilities	size	R^2
April 2	0.222	0.054	-0.530	-0.033	0.0245	-0.000	0.025	0.375
	(2.171)	(1.009)	(1.734)	(-1.436)	(1.943)	(-2.129)	(2.729)	
April 21	-0.085	-0.001	0.206	-0.006	0.009	0.000	-0.004	0.073
	(-0.662)	(-0.022)	(0.537)	(-0.209)	(0.597)	(0.887)	(-0.350)	
August 12	-0.010	0.074	-0.012	0.033	0.000	-0.000	0.002	0.130
	(-0.056)	(0.784)	(-0.022)	(0.828)	(0.004)	(-0.992)	(0.102)	
August 19	-0.293	0.106	-0.319	-0.031	0.034	-0.001	-0.018	0.316
	(-1.565)	(1.074)	(-0.571)	(-0.740)	(1.481)	(-1.815)	(-1.101)	
September 1	0.320	-0.118	-0.439	0.080	-0.060	0.000	0.002	0.094
	(0.940)	(-0.659)	(-0.433)	(1.053)	(-1.420)	(0.644)	(0.692)	

t-statistics in parentheses

TABLE 4

Results of Cross-Sectional Regression on July 6, 1982, the Day Following Penn Square Bank Failure

Latin loans	energy loans	Penn Square loans	real estate loans	other foreign loans	net purchased liabilities	size	R^2
-0.392	-0.263	-1.183	-0.012	0.002	0.000	0.008	0.397
(-2.336)	(-2.988)	(-2.365)	(-0.309)	(0.083)	(1.388)	(0.539)	

t-statistics in parentheses