

U.S. Banks, Crises, and Bailouts: From Mexico to LTCM

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A striking development in the 1990's has been the emergence of the view that events in emerging markets could endanger the stability of the global financial system. As former Secretary of the Treasury Robert Rubin put it in an interview, "I can't imagine that 20 or 25 years ago my predecessors would have been worried about an economic crisis in Thailand or Indonesia, or even Korea" (Thomas L. Friedman, 1999 p. 186). The events of 1998 seem to provide evidence in support of this view. As one observer puts it, "the entire global economic system as we know it almost went into meltdown, beginning with Russia's default" (Friedman, 1999 p. 212).

As a response to the perceived threat to financial stability from emerging market crises, the 1990's have seen bailouts of unprecedented size. Mexico, South Korea, and Brazil received packages of aid in excess of \$40 billion each. Thailand, Indonesia, and Russia received packages between \$10 billion and \$40 billion. The proponents of bailouts have argued that they were necessary to prevent contagion and systemic threats. The critics of bailouts have pointed out that they heighten moral hazard, so that banks find it optimal to take bigger gambles because they do not suffer as much if the gambles fail.

In this paper, we examine the impact of crises and bailouts on U.S. bank stock prices to assess some of the issues raised by proponents and opponents of bailouts. First, we investigate whether currency crises in emerging markets had a significant impact on banks. After taking into account movements in the stock market, banks without exposure to the country in trouble were generally

not affected by the adverse events, but banks with exposure were. Second, we examine the impact of the largest bailouts. We find that they significantly benefited banks with exposure to the bailed-out country and generally had no significant impact on banks without exposure. Third, we consider the Long Term Capital Management (LTCM) crisis, which is useful to put emerging market crises in perspective since no public funds were used in the bailout. The banks that participated in the LTCM rescue lost dramatically when the LTCM losses became known and when the rescue was announced.

I. Data and Measurement Issues

We use the method of event studies commonly used in finance. We therefore identify relevant events and estimate their impact on stock prices. Our hypothesis is that systemic threats decrease bank stock prices because they adversely affect the value of banking franchises.

To evaluate the impact of events, we regress bank portfolio daily excess returns (the return minus the risk-free rate) on the excess returns of the Datastream U.S. market index, on changes in the 7-day Eurodollar rate, and on dummy variables for the event days. The estimated coefficients on the dummy variables are the abnormal returns reported in this study. Table 1 provides the abnormal returns on key dates.¹ We discuss market movements when relevant. For all the crises considered, we start the sample period in January of the year of the crisis and include at least 319 trading days. We use the banks that belong to the Datastream retail banking index.

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¹ The appendix of the working-paper version reproduces the regression estimates, the list of exposed and nonexposed banks for each country, and the list of relevant dates. The working-paper version is available at (<http://www.nber.org>) or at (<http://www.cob.ohio-state.edu/~fin/dice/list.htm>). In Kho and Stulz (2000), we apply this approach to events of the East Asian crisis and discuss the robustness of results when this approach is used.

TABLE 1—ABNORMAL RETURNS OF THE U.S. BANK PORTFOLIOS AROUND EVENTS OF CRISES AND BAILOUTS

Dates of crises and bailouts ^a	Exposed banks	Nonexposed banks
Mexico (3 January 1994–30 June 1995; 378 days)		
941220	-0.20 [0.74]	0.12 [0.76]
941221	-1.37 [0.03]	-0.03 [0.95]
950125	1.44 [0.02]	0.51 [0.21]
South Korea (16 January 1997–15 July 1998; 377 days)		
971114	-1.50 [0.07]	-0.71 [0.20]
971201	2.09 [0.01]	1.22 [0.03]
971204	1.25 [0.13]	0.89 [0.11]
Russia (2 January 1998–9 April 1999; 319 days)		
980817	0.11 [0.94]	-1.40 [0.06]
980827	-4.19 [0.00]	-0.70 [0.36]
980828	-2.11 [0.13]	0.35 [0.64]
980831	3.45 [0.02]	1.65 [0.04]
Brazil (2 January 1998–9 April 1999; 319 days)		
980902	1.54 [0.18]	3.55 [0.00]
980903	-4.57 [0.00]	-0.63 [0.36]
980915	1.95 [0.09]	0.92 [0.18]
981008	3.46 [0.00]	-2.44 [0.00]
981113	2.53 [0.03]	0.14 [0.84]
990119	-2.43 [0.04]	-1.22 [0.08]
LTCM (2 January 1998–9 April 1999; 319 days)		
980901	-3.47 [0.03]	0.48 [0.51]
980902	0.52 [0.74]	3.42 [0.00]
980903	-7.99 [0.00]	-0.68 [0.35]
980924	-3.59 [0.03]	-1.02 [0.16]

Notes: The sample period for the estimation of the regressions is given in parentheses beside the country, and p values are reported in brackets beside the abnormal returns. Dates of bailout announcements are in bold type.

^a Dates are reported as YYMMDD (i.e., 941220 = 20 December 1994).

Event studies are based on the presumption that the market impounds all the new information in stock prices immediately. Because of this presumption, there are two difficulties with event studies. First, the importance of an event might be underestimated because stock prices already partially or completely reflected its economic impact before it occurred. Second, an announcement may take place after markets are closed on that day, so that the stock-price reaction takes place on the next day when markets are open. We deal with these difficulties by including as event days the trading days before and immediately after the news announcement.

To identify banks exposed to a country, we use the exposure reported in annual reports as close as possible to the first event date associ-

ated with the country's crisis, assuming that the market knows these exposures. We then construct portfolios of exposed and of nonexposed banks. Exposed banks are those that report a positive exposure to the crisis country.

Banks did not report exposure to LTCM. While a bank might have been a counterparty to LTCM or have lent to LTCM, it might also have been affected by the LTCM crisis because it attempted to mimic LTCM's positions. We consider the banks that participated in the LTCM rescue to have been exposed, since these banks were willing to put up their funds to prevent the crisis from worsening.

A systemic risk should affect all banks, not just the large ones, so that equally weighted portfolios of banks are most relevant for estimating the impact of events on systemic risk. However, an alternative view is that the large banks which dominate value-weighted portfolios are those that matter when one is concerned about the financial system. We therefore point out some differences that arise when we use value-weighted portfolios.

II. Do Emerging-Market Crises Matter for the U.S. Financial System?

Mexico devalued its currency on 20 December 1994 and announced the next day that the parity would no longer be defended. These currency events impacted the market on 21 December. On that day, exposed banks had an abnormal return of -1.37 percent (the p value is 0.03). In contrast, the other banks had an abnormal return of -0.03 percent, so that exposed banks performed worse by 1.34 percent ($p = 0.01$). In the case of South Korea, the exposed banks had an abnormal return of -1.5 percent ($p = 0.07$) on the trading day before Korea stopped defending its parity, 14 November, but the abnormal return is not significantly different from that of the nonexposed banks.

With Russia, nonexposed banks had an abnormal return of -1.40 percent ($p = 0.06$) on the day of the devaluation and of the default on various debt instruments, 17 August, while the exposed banks had a positive insignificant abnormal return of 0.11 percent. Exposed banks lost 2.11 percent ($p = 0.13$) on the day of the suspension of the ruble convertibility, 28 August, and lost 4.19 percent ($p < 0.01$) on the

day before. Yet, nonexposed banks had an insignificant total abnormal return over these two days of -0.35 percent. The banks experienced significant positive abnormal returns on 31 August. On the three trading days around the suspension of the convertibility, the Datastream index for the U.S. market fell by a dramatic 11.74 percent. Including the market fall, exposed banks lost 17.91 percent on these three days, while nonexposed banks slightly outperformed the market since they lost 10.77 percent.

For Brazil, there was a significant capital outflow at the beginning of September 1998 which overlapped with the LTCM announcements. On 3 September, banks exposed to Brazil lost 4.57 percent. Banks that were not exposed lost an insignificant 0.63 percent. Banks exposed to Brazil but not exposed to LTCM had an abnormal return of -2.18 percent ($p = 0.05$) on September 3. The devaluation of the real had no impact on banks. When Brazil announced it would no longer defend its parity, exposed banks lost 2.43 percent ($p = 0.04$) and nonexposed banks lost 1.22 percent ($p = 0.08$) on the next trading day, 19 January.

Based on our evidence, currency events in emerging markets matter for U.S. banks. However, they affect exposed banks and leave nonexposed banks largely untouched. It is hard to argue that the events considered are economically important for nonexposed banks after taking into account market movements.

III. Bailouts and U.S. Banks

Looking at the mega-bailouts of Mexico, South Korea, and Brazil, we find that, in each case, at least one bailout event surprised the markets. In the case of Mexico, the exposed banks earned an abnormal return of 1.44 percent ($p = 0.02$) on 25 January 1995, the day before the tentative approval of IMF support, in contrast to the nonexposed banks which earned an insignificant 0.51 percent. The difference between the two groups of banks has a p value of 0.08. No other Mexican event had significant abnormal returns. In the case of South Korea, the critical event occurred on 1 December 1997, when it became clear that there would be a bailout agreement. On that day, exposed banks had an abnormal return of 2.09 percent ($p =$

0.01) while nonexposed banks earned 1.22 percent ($p = 0.03$). The difference between the two groups is insignificant. In addition, the U.S. market index earned 1.93 percent on 1 December. One might argue that in this case the IMF program might have had systemic benefits, but the abnormal return of nonexposed banks is smaller and not significant when we use a value-weighted portfolio, indicating that the effects on these banks were weak at best.² Finally, in the case of Brazil, exposed banks earned 1.95 percent ($p = 0.09$) on 15 September, when negotiations with the IMF opened, while nonexposed banks gained an insignificant 0.92 percent on that day. The difference between the two groups is not significant, however. On 8 October 1998, when Brazil and the IMF issued a joint statement, the abnormal return of exposed banks was 3.46 percent ($p < 0.01$), in contrast to the abnormal return of -2.44 percent ($p < 0.01$) for nonexposed banks. On that day, the market fell by 1.45 percent. Finally, on 13 November, the day of the IMF support announcement, the exposed banks earned 2.53 percent ($p = 0.03$), while the nonexposed banks earned 0.14 percent. The difference between the two groups is significant.

Russia provides a confirmation of our analysis of bailouts, showing that the absence of a bailout is bad news for exposed banks but not for other banks. The *New York Times* had an article on Russia on 27 August stating that the "IMF steps back." That day was rich in news about Russia. Nevertheless, it is interesting to note that exposed banks lost 4.19% ($p < 0.01$) while nonexposed banks lost an insignificant 0.70 percent. The difference between the two groups is significant ($p = 0.01$).

Our analysis of bailout event returns shows that the informative events had significant positive abnormal returns for exposed banks and, except for South Korea, insignificant abnormal returns for nonexposed banks. The highest gains of the exposed banks are for the bailout of Brazil. We can estimate the dollar

² Kho and Stulz (2000) provides a more detailed analysis of the Korean crisis but considers only three exposed American banks: JP Morgan, Citibank, and Chase Manhattan Bank. In that paper, the gains of the three banks are substantially larger than the gains for all exposed banks reported here.

amount of the increase in the capitalization of exposed banks as a result of the bailout as follows. At the end of September 1998, the equity capitalization of banks exposed to Brazil was about \$230 billion, and the capitalization of nonexposed banks was slightly more than \$430 billion. On the three dates associated with IMF announcements for Brazil, the sum of the abnormal returns of exposed banks amounted to 7.74 percent using a value-weighted portfolio, and thus the capitalization of exposed banks increased by about \$17.8 billion.

IV. LTCM and U.S. Banks

News about LTCM losses was made public on 2 September. On the three days surrounding 2 September, the four banks in the Datastream retail banking index for the United States that subsequently attended the meeting at the Federal Reserve Bank of New York had an abnormal return of -11.04 percent.³ This abnormal return is large compared to the ones discussed for the emerging-market events. In dollars, the capitalization of the exposed banks fell by slightly more than \$8.8 billion. On these three days, the banks not exposed to LTCM gained \$26.86 billion dollars. As a result, banks with LTCM exposure underperformed the nonexposed banks over these three days by 14.24 percent ($p < 0.01$). Perhaps another way to look at the banks exposed to LTCM is as follows. The four banks had equity of \$145 billion on 26 August. On 4 September, their equity was \$102 billion, corresponding to a loss of 29.45 percent. During that period, the banks not exposed to LTCM lost 9.35 percent of their value, going from \$596 billion to \$540 billion. The banks exposed to LTCM lost another 3.59 percent ($p = 0.03$) on 24 September, the trading day following the announcement that they were putting money into LTCM. On that day, the other banks lost an insignificant 1.02 percent

($p = 0.16$). On 23 September, some exposed banks performed quite well relative to the market, but this good performance appears to be unrelated to news about LTCM.

V. Conclusion

Our analysis shows that the market distinguishes well between exposed and nonexposed banks when an event occurs. After taking into account market movements, exposed banks are affected by events while nonexposed banks are generally not. There is therefore no basis for concerns that markets react similarly across banks and that banks have to be protected from the markets. Our evidence raises important questions, especially for those who emphasize the importance of U.S. systemic risks as a motivation for bailouts. In particular, if the events discussed in this paper had an impact on systemic risk, why is it that we cannot notice such an impact on nonexposed banks? One might argue that markets knew that there was no danger either because they knew that exposures were insufficient to matter for the U.S. banking system in the first place or because they knew that policymakers would always succeed in making sure that nothing bad would happen to the financial system. Whatever the explanation for the lack of an adverse impact on nonexposed banks, the bottom line must be that the markets did not think that any of the adverse events we considered could have led to significant economic problems for the banking sector in the United States in general. The fact that a subset of banks could lose 29 percent of their equity capitalization in six trading days without more impact on other banks is consistent with at least three explanations: (i) systemic risk is overrated, (ii) the market underreacted, or (iii) the cleverness of our policymakers is underrated.

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³ The exposed banks are Citicorp, Chase Manhattan, Bankers Trust, and JP Morgan. Travelers was at the meeting instead of Citicorp, but the two had agreed to merge, and so we treat them as one entity.