SAFETY-NET MECHANISMS: THE CASE OF INTERNATIONAL LENDING

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Introduction

We have just emerged from the longest, and, by some measures, the most severe postwar recession. It is not surprising, therefore, that financial-sector problems have emerged. In economic downturns, certain phenomena typically occur. Included among these are sharp adjustments in risk premiums and yield-curve configurations, increases in the number of problem loans and loan losses, a rise in the number of troubled financial institutions, and a higher failure rate among financial institutions. This list in fact encompasses most of the financial difficulties experienced during the past recession. As the U.S. and world economies continue to recover, the current volume of problem loans will tend to be worked off, lessening the level of financial stress. Available evidence on credit exposure indicates, however, that, at least in the near term, the U.S. bank-failure rate will remain above the average rates established during the pre-1975 period. This suggests that current financial-sector difficulties may reflect structural as well as cyclical problems, a prognosis that raises concerns about the long-run strength and stability of the U.S. financial system.

In this paper, we hypothesize that the incentive structure provided by financial safety-net mechanisms has altered the risk preferences of U.S. financial institutions. This change, in turn, has led them to accept an excessive amount of risk. Similar changes may have occurred

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Cato Journal, Vol. 4, No. 1 (Spring/Summer 1984).

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in other countries, making their financial institutions more willing to undertake undue risk, but an examination of this issue is beyond the scope of our paper. We focus on the U.S. banking system, and simplify our analysis further by concentrating on one safety-net mechanism, the system of federal deposit insurance.

Incentives provided by other financial safety-net mechanisms, including IMF lending and the lender-of-last-resort function of the Federal Reserve System, also have influenced bank decision making. In this paper, however, we analyze only the interaction of these other safety-net mechanisms with the existing federal deposit insurance system, and do not present a detailed overview of them.[1] Finally, we make no attempt here to quantify the direct impact of deposit insurance on risk taking. As designed, the safety-net mechanisms established in the United States were intended to operate interdependently, so it is difficult to determine the independent quantitative impact of each of these mechanisms. Nor is any attempt made to measure the extent to which current difficulties resulted from cyclical factors. Our intention is to analyze the impact of deposit safety-net mechanisms on banks' decisions about risk. We conclude that, by altering the manner in which risk is priced, deposit insurance heightened current financial difficulties by enabling U.S. banks to accept more credit risk than they would have accepted in the absence of this system. Within this framework, the international debt crisis is but one of several severe financial-sector difficulties that have already developed from overexposure to risk.

An Overview of Current Financial Sector Weakness

A variety of financial-sector problems has emerged during the past few years, suggesting that the U.S. financial system has become more susceptible to stress. Two problems are especially noteworthy: losses in the thrift industry and loan problems of key commercial banks. Weakness in the thrift industry was brought on by the combination of a prolonged period of high and volatile interest rates and regulations requiring thrifts to maintain a large proportion of their assets in long-term fixed-rate assets. Even though recent changes in regulations have expanded their asset powers, thrifts still have a large proportion of their assets in long-term fixed-rate mortgages. Another sharp and protracted turnaround in interest rates would again have serious consequences for most firms in that industry. Despite the

[1]For a detailed history of the lender-of-last-resort function, see Humphrey and Keleher (1984).

cyclical character of thrift-industry problems, there is concern about the long-term viability of that industry.

In addition, more attention is now being given to the new real estate lending practices of thrifts. Although fixed-rate home mortgage loans are vulnerable to large swings in interest rates, their credit risk (or risk of default) is relatively low. In contrast, much of the loan growth at thrifts during the past two years has been in areas exposed to high credit risk, like construction and land-development projects. The shift toward assumption of greater credit risk has raised concerns about the ability of thrifts to absorb potentially large losses from exposure to both interest-rate and credit risk during any future cyclical downturn.

The troubled loans held by commercial banks constitute a second noteworthy problem. In their domestic portfolios, many commercial banks have experienced severe earnings pressures from an increase in nonperforming loans, particularly energy-related credits. Two large banks already have failed primarily in response to bad energy credits: the Penn Square Bank in Oklahoma, and the First National Bank of Midland in Texas. In addition, severe earnings pressures at SeaFirst National Bank in Seattle have led to a major change in regulatory policy so that an out-of-state bank holding company (Bank America Corporation) could acquire the troubled Washington institution.

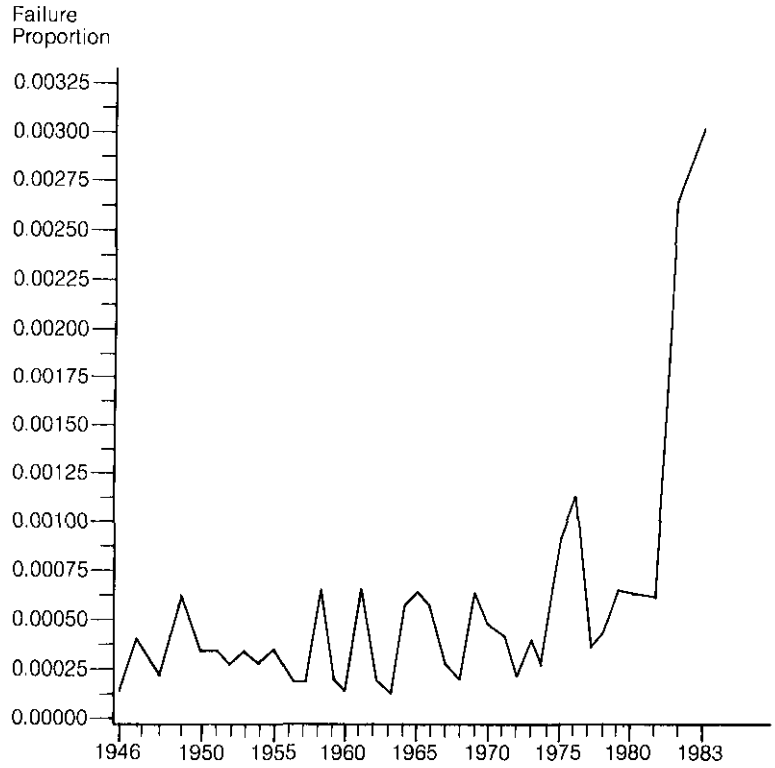
Though these domestic difficulties have received much attention, loan problems in the international area are at least equally important. All of the nation's largest multinational banks are subject to potentially severe losses from defaults on international loans. The gains in income reported by many of the nation's largest banks for1982–83 do not fully reflect temporary disruptions in interest and principal payments by international borrowers who were unable or unwilling to service their debt. The magnitude of public-sector involvement, which is already the highest since the Great Depression, underscores the severity of the foreign-debt problem. Moreover, many analysts predict that the debt burden of the major Latin American borrowers is sufficiently large to generate recurring debt-servicing problems throughout this century and possibly into the next. Are these bank loan problems merely the result of cyclical factors, or have more permanent structural changes also occurred?

Structural changes have occurred in banking. In 1975 and again in 1982, the failure rate among commercial banks jumped dramatically. The series for the postwar period is presented in Figure 1.[2] Prior to 1975, the series had no trend. Though the failure rate tended to

[2]Data are available from the authors upon request.

FIGURE 1

BANK FAILURES AS A PROPORTION OF NUMBER OF BANKS



Source of Primary Data: U.S. Department of Commerce, Bureau of the Census.

increase in cyclical downturns, it declined again during recovery. In 1975, it not only increased more than in earlier postwar cycles, but it did not revert to its old level. A statistically significant change in the failure rate occurred, with the rate moving to a permanently higher level. Indeed, during the three years from 1979 to 1981, the annual rate of bank failures was higher than the failure rates that developed during the five cyclical downturns prior to the 1975 cycle. The failure rate in 1982 was more than double the 1975 rate, which had set a post–World War II record. In 1983, the failure rate rose again. Though it is too early to tell if the 1982–83 rates will revert to either the post- or pre-1975 levels, these data suggest that some factors other than ordinary cyclical ones have affected the U.S. banking structure.

The International Debt Problem

Beginning in the mid-1970s, and through the international debt crisis in the summer of 1982, the international lending activity of U.S. banks was marked by two parallel developments. First, there was a major expansion of the international assets and liabilities of U.S. banks held primarily at their foreign branch offices. As indicated in Table 1, total assets of the overseas branch of U.S. banks increased from roughly $152 billion in 1974 to more than $469 billion by the end of 1982. Much of this growth resulted from expanded interbank activity. Claims on U.S. parent banks and on other foreign branches of the U.S. parents increased from $32.1 billion in 1974 to $152.7 billion in 1982, while claims on other nonrelated foreign banks increased from $60.3 billion to $133.6 billion. Comparing these changes shows that more than 60 percent of the growth in assets at the foreign branches of U.S. banks came from an increase in interbank activity. Claims on nonbank foreigners increased from $46.8 billion in 1974 to more than $109 billion by December 1982, and exposure to foreign public borrowers increased from $4.1 billion to $24.1 billion. After the emegence of the international debt crisis in mid-1982, asset growth at the foreign branches of U.S. banks slowed sharply. By the end of 1983, claims on all foreigners fell to $342 billion, a $16 billion decline from the 1982 year-end level. The bulk of this decrease came from a reduction in claims on nonrelated foreign banks, as banks reevaluated their credit exposure to nonaffiliated banks.

A second major development in the Euromarkets, which also began in the mid-1970s, was the gradual shift away from corporate loans to credits granted directly to public borrowers, or credits with public-sector guarantees. Prior to the 1982 credit crisis, loan-pricing terms in the Eurocredit markets indicated that lenders viewed credits extended to a country or public authority (or credits to a borrower with a public guarantor) as lower risks than private-sector credits. Yet it is these public-sector credits which are now the main concern. Decisions were made to price loans to public borrowers as high-quality, despite that fact that information adequate to determine the credit-worthiness of many of the foreign borrowers was not available (Schweizer and Mattle 1978, pp. 18–22).

The ability to calculate the credit-worthiness of a sovereign borrower requires information on economic, political, and socioeconomic criteria. All of the major multinational banks allocated resources to analyzing country-risk exposure. It is now generally acknowledged, however, that lending decisions frequently were made without adequate attention to these analyses. Among the Eastern

TABLE 1

BANK ASSETS OF THE FOREIGN BRANCHES OF U.S. BANKS
(Billions of Dollars)

Year	Total Assets	Claims on All Foreigners	Claims on Parent Bank	Claims on Other Foreign Branches of U.S. Parent	Claims on Nonrelated Foreign Banks	Claims on Nonbank Foreigners	Claims on Public Borrowers
1974	151.9	138.7	4.5	27.6	60.3	46.8	4.1
1975	176.5	163.4	3.8	34.5	69.2	53.8	5.9
1976	219.4	204.5	4.3	46.0	83.8	64.2	10.6
1977	258.9	238.8	7.8	55.8	91.9	76.6	14.6
1978	306.8	278.1	12.8	70.3	103.1	80.9	23.7
1979	364.2	317.2	25.9	79.7	123.4	88.0	26.1
1980	401.1	355.0	20.2	77.0	146.4	103.5	28.0
1981	462.8	379.1	43.1	87.8	150.9	112.2	28.2
1982	469.4	358.3	61.6	91.1	133.6	109.4	24.1
1983	475.6	342.0	81.0	92.6	117.6	107.4	24.4

SOURCE: *Federal Reserve Bulletin*, selected issues.

European and developing countries, in particular, timely data needed to calculate the financial status of sovereign borrowers simply either were not available or were merely rough estimates of data prepared by agencies of governments involved in negotiating credit terms. Data constraints made it difficut to determine the validity of the country-risk studies. The constraints, however, did not reduce a bank's need to determine its underlying exposure to credit risk. The inattention to risk assessment by the major U.S. banks suggests that other factors were also at work altering the decision-making process at U.S. banks with respect to risk taking.

The international lending crisis is generally traced to the oil-price shock of 1973–74. The sharp adjustment in oil prices initially produced huge OPEC current-account surpluses and huge deficits in non-oil-producing countries, especially among non-oil-producing LDCs. Financial institutions, including U.S banks, became intermediaries in the financial adjustment process. As Robert Weintraub (1983a, pp. 4–5) aptly phrased it:

> The match was obvious. In the mid-1970s, banks recycled OPEC's surpluses to non-OPEC developing nations. If banks had not matched the new petro–deposits to the new credit demands of non-OPEC developing nations, if they had loaned the funds to other entities instead, some of these other entities or those to whom the funds were transferred to, further down the line, would have done the recycling.

Prior to the 1973 oil-price shock, U.S. banks had not engaged in substantial direct lending to foreign governments, except with third-party guarantees. The sheer magnitude of the oil-price increase, together with strong preferences among surplus countries to keep their funds in short-term money market instruments, imposed new demands on the process of financial intermediation. The lure of fee income, plus initially attractive interest-rate spreads, made bank participation in the recycling process appear profitable. The technique of syndicating or packaging loans made it possible for U.S. banks to participate aggressively in floating foreign loans of unprecedented magnitude. And, let it be said, public policy encouraged the process. Official support of aggressive foreign lending may have contributed to a climate in which U.S. bankers exercised less caution than they otherwise would have.

By 1978, however, the economic situation began to change. OPEC surpluses had almost disappeared. While they developed again in 1979–80 as a result of the Iranian revolution, they all but disappeared again by 1982. Borrowing demands by non-OPEC developing countries did not ebb, however, with the receding OPEC surpluses, and the

banks continued to extend new lines of credit to these borrowers at narrow spreads over their cost of funds.

The data provided in Table 2 provide an overview of the distribution of the exposure of U.S. banks to foreign debt at the end of 1982. Certainly not all of this foreign debt, not even all the LDC debt, is of doubtful quality. If we look at continents, for instance, most Asian debt is generally of high quality (trouble in the Philippines notwithstanding). The major problems facing U.S. banks have been concentrated in their exposure to Eastern Euopean borrowers and to developing countries in Latin America, the same areas where data constraints made assessments of credit-worthiness particularly difficult.

TABLE 2

AMOUNTS OWED TO U.S. BANKS BY FOREIGN BORROWERS AS OF DECEMBER 1982
(Billions of Dollars)[a]

Group of Ten (G-10) Countries plus Switzerland		161.9
Other Developed Countries		38.0
Eastern Europe		5.9
OPEC Members		24.4
Non-OPEC Developing Countries		107.3
Latin American & Caribbean	70.6	
Asia	32.7	
Africa	4.0	
Offshore Banking Centers		13.2
International and Regional Organizations		0.9
TOTAL		351.6

[a]All amounts are adjusted for guarantees and indirect borrowing.

SOURCE: Federal Financial Institutions Examination Council, Country Exposure Lending Survey, 1 June 1983.

It is now broadly acknowledged that many of the loans extended by U.S. banks were used either directly or indirectly to support consumption. Other credits were extended to support public-sector investment projects, many of which have turned out not to be cost-effective. Brazil, in particular, is saddled with large state enterprises that are overmanned and unmanageable. While some of Brazil's investments are promising, others appear to be of dubious commercial value. In effect, some public-sector "investment" would be bet-

ter labeled consumption. Borrowing for these purposes supported unsustainable levels of current consumption instead of providing the investment required for net increases in future consumption. If even the interest—not to mention the principal—on these debts is to be paid, real income and consumption in the overburdened borrowing nations must fall for some time.

The problems highlighted here differ among countries. Where private borrowers are involved, problems differ within countries. Despite important differences among countries, almost all of the credit problems are long term. The international debt problem is not primarily a problem of short-run liquidity. As Robert Weintraub (1983a, p. 4, n. 1) has pointed out, the short-term debt of non-OPEC LDCs in 1982 was almost matched by their short-term assets. There was a liquidity aspect to countries' debt-servicing difficulties, but this was caused by the inability of debtors to service medium- and long-term obligations. Economic recovery will ease these temporary liquidity difficulties, which are attributable to recessions. Nevertheless, the problems associated with foreign debts will be with us well into the 21st century. As the medium-term debt, which has been restructured and whose maturities have been extended, becomes due, liquidity problems will recur for some borrowers. It is this aspect of the dilemma that leads us to characterize it as a long-run concern for U.S. banks.

We have often heard it said that nations cannot go bankrupt. Nothing could be further from the truth. In fact, only comparatively recently have governmental obligations been considered the highest-quality debt. Britain established this pattern only in the 19th century, and Western democracies have generally (but not always) emulated her in the 20th. Adam Smith (1921, II, p. 471) had a sounder view of sovereign debt, not only for his time but for ours:

> When national debts have once been accumulated to a certain degree, there is scarce, I believe, a single instance of their having been fairly and completely paid. The liberation of the public revenue, if it has even been brought about at all, has always been brought about by a bankruptcy; sometimes by an avowed one, but always by a real one, though frequently by a pretended payment.

Countries make "pretended payment" by inflating, or, as Smith quaintly phrased it, by "raising the denomination of the coin." Inflationary finance can be less desirable than overt bankruptcy, because of its deleterious effects on society in general:

> A pretended payment of this kind, therefore, instead of alleviating, aggravates in most cases the loss of the creditors to the public; and without any advantage to the public, extends the calamity to a great number of other innocent people. [Smith 1921, II, p. 472]

Foreign governments, of course, cannot inflate away the real value of dollar-denominated assets. These governments, however, can erode the value of debts contracted in their respective domestic currencies. As is indicated in Table 3, this is still a common practice among Latin American Countries.

TABLE 3

PERCENT CHANGE IN CONSUMER PRICES FROM 12 MONTHS EARLIER

Country	December 1981	December 1982	June 1983
Argentina	131.3	209.7	340.1
Brazil	91.2	97.9	112.2
Chile	9.5	24.3	32.3
Ecuador	18.0	24.4	48.2
Mexico	28.7	98.9	112.5
Peru	72.7	72.9	107.7
Venezuela	11.0	7.7	5.4
WEIGHTED AVERAGE	50.9	82.6	105.8

SOURCE: *World Financial Markets*, Morgan Guaranty Trust Company of New York, September 1983.

Only some of the acceleration in inflation rates can be explained as the effect of devaluation. It appears that these governments are attempting to cope with the burden of foreign debt by reducing the burden of their domestic debt. This strategy will accomplish little in the long run, however, if it destroys the wealth of the domestic creditor class.

Others have offered explanations of these countries' massive debts, and have examined the possible impact on LDCs of the foreign-debt burden. In this paper, however, we concentrate on why the banks were willing to extend these loans under terms that did not reflect their own exposure to risk. Systematic evidence that banks underestimated risk is, of course, difficult to adduce. Nonetheless, Edwards (1983, pp. 4–5) found that "even though international banks have taken into account some of the borrowers' characteristics, they have tended to overlook others. In that sense, the results presented in this [Edwards'] paper provide some basis to presume that the present crisis is *partially* a result of banks' lending practices."[3] Indeed,

[3]Edwards gives more scope than we would to the role of exogenous shocks. He nonetheless notes that: "Even though these external factors indeed have had a role in the present crisis, it is important not to minimize the role of domestic policies. In particular, the fact that in most cases a large proportion of the new indebtedness was used to finance consumption should be pointed out . . ." [Edwards 1983, pp. 25–27].

Edwards (1983, p. 25) found, more specifically, that as late as 1980 (his latest data), "the international financial market had not predicted in any important way the future payment difficulties faced by Argentina, Mexico, Uruguay, and Venezuela." We look to the incentive effects of deposit safety-net mechanisms as a partial explanation for this miscalculation.

Deposit Insurance and Bank Risk Taking

Federal deposit insurance was authorized by the Banking Act of 1933 to restore public confidence in the U.S. banking system. The primary objective of deposit insurance was to maintain financial stability by forestalling deposit runs on commercial banks. This was accomplished by allaying depositor fears of capital loss from bank failure. It also satisfied a related but secondary objective of protecting small depositors from financial loss if a bank did fail.[4]

The FDIC was created as part of financial legislation to constrain risk taking by banks. Besides establishing deposit insurance, the Banking Act of 1933 prohibited banks from, among other things, underwriting corporate securities, paying interest on demand deposits, or paying interest on savings and time deposits in excess of allowed limits. These asset and liability constraints, together with restrictive chartering policies and limits to geographic expansion imposed by the McFadden Act of 1926, were intended to ensure safe banking by restraining competition and thereby reducing incentives to undertake excessive risk. It is difficult to determine whether these regulatory constraints, or sharply lowered risk preferences resulting from the dramatic increase in bank failures during the Great Depression, imposed effective constraints against excessive risk taking through at least the mid-1960s. Generally, however, analysts refer to that era as a period of binding regulatory constraints. The period from the mid-1960s through 1980 was a period of partial, de facto deregulation. Following the passage of the Monetary Control Act of 1980, the U.S. financial system entered a period of de jure deregulation.

A brief discussion of some of the financial innovations, which circumvented remaining regulatory constraints during the era of partial, de facto deregulation, helps to develop a causal link between deposit insurance and excessive risk taking. We certainly do not believe that financial innovation per se generates excessive risk taking. To the contrary, financial innovation can improve efficient capital

[4]As Kareken (1983, p. 199) observes, current FDIC policies make little sense if protection of the small depositor were the primary objective of deposit insurance. If, however, prevention of bank runs were the primary objective, then current policies make a great deal of sense.

flows, thereby making resource allocation more efficient. What we do argue is that the system of deposit insurance in the United States, together with the lender-of-last-resort function of the Federal Reserve System, have altered the pricing mechanism in the interbank market in a manner that has reduced constraints on risk taking.[5] Since this paper examines the international banking crisis, the overview of financial innovation presented here concentrates on Euromarket developments.

On the asset side, restrictions on international capital movements in the late 1960s, together with restrictions on domestic branching, played an important role in the formation of the intricate network of overseas branches established by the major U.S. banks during the 1970s. These constraints, together with tax laws, interest-rate restrictions, and reserve requirements, were key factors behind the rapid growth of the Eurodollar market and the expansion of international lending by U.S. banks (Mills and Short 1979). On the liability side, inflationary pressures induced banks to devise financial instruments paying market rates of interest to circumvent ceilings imposed by Regulation Q. Domestic rate ceilings on large certificates of deposit with maturities of 30 days or more were removed in two stages during the credit crunches of 1970 and 1973. But domestic interest-rate restrictions remained on demand deposits and on time and savings deposits of less than $100,000, as well as on large time deposits with maturities of less than 30 days. This led large multinational banks to raise a growing proportion of their short-term funds in the Euromarkets, where interest rates and deposit maturities are determined by the interplay of supply and demand rather than by national rules or regulations.

The ability to raise funds, for a price, at any maturity sharply removed bankers' concerns about obtaining adequate funding to meet loan commitments. As the size and depth of the Eurodollar market increased, concerns about liquidity were mitigated further. Moreover, by the mid-1970s, under the leadership of the European branches of U.S. banks, banks introduced the rollover credit, a variable-rate instrument that made long-term loans subject to periodic interest-rate adjustments. The rollover credit became the primary source of business financing by commercial banks in the Euromarkets.

[5]The current system of pricing deposit insurance transforms the role of the lender of last resort. Thus the FDIC's pricing policy is a necessary condition for reducing constraints on risk taking, and this policy, together with current lender-of-last-resort policies, are sufficient conditions for a reduction in constraints on risk taking. In this sense, the current system of deposit insurance adds to rather than relieves pressure on the lender of last resort.

Prior to the mid-1970s, international borrowers had relied primarily on capital markets to satisfy their medium and longer-term borrowing requirements. Variable-rate pricing techniques, together with the development of the loan syndication process, provided the basis for active bank participation in financing medium- and long-term loans. By directly linking interest rates on assets and liabilities with different maturity structures, the development of the rollover credit greatly reduced bankers' concerns about exposure to interest-rate risk.

The London Interbank Offered Rate (LIBOR) provided the underlying rate of interest on rollover Eurocredits. LIBOR is the rate at which three- or six-month money is offered by the leading London banks to other banks. Actual borrowing rates exceed LIBOR by specified margins or spreads, determined by competitive pressures among participating banks.

The decision to participate in large Euro-syndicated loans depends critically on the assumption that an adequate interest-rate margin be preserved on each loan throughout its term. The average cost of funds paid by the reference banks in a syndicated Eurocredit determines the base borrowing rate. The margin or spread over the base rate reflects the lenders' assessments of the borrower's credit risk. In determining whether to participate in a syndicated loan, each individual bank must judge whether the established margin adequately covers the credit risk. In addition, to preserve the margin on the credit, each participating bank must be able to continue to bid for funds throughout the term of the loan at a rate comparable to the average rate paid by the reference banks. Over time, bankers gained confidence that, at each rollover date, they would be able to obtain adequate funding at an interest rate preserving the margin established on the loan. Reduced concerns about liquidity constraints was a key motivating factor behind the sharp increase in U.S. bank participation in medium- to long-term financing to international borrowers.

The volume of syndicated loans made by banks of various sizes and origins, in both the domestic and international arena, increased sharply. Competitive pressures frequently reduced spreads over funding costs to as low as three-eighths of a percentage point on major Eurocredits. Such spreads would result in negative margins if differential pricing adjustments on deposits of as little as one-half of a percentage point developed among participating banks. Although risk premiums of such magnitudes are not uncommon among nonbank borrowers with different risk characteristics, such diffferentials have been rare in the interbank market.

Under normal conditions, major U.S. banks have been able to raise funds at roughly uniform rates in both the domestic and international

money markets. Moreover, rate differentials between the large multinational banks and the major regionals have been small. This has enabled banks of different sizes to participate in the same loans. Differential pricing adjustments on bank deposits do occur, but significant adjustments develop only *after* problems of crisis proportions have emerged. During financial crises, when the probability of bank failure is sharply heightened, interest-rate differentials on bank deposits widen. Banks deemed to have higher exposure to risk pay more for funds and, in some instances, deposit outflows from those banks cause liquidity problems. It must be underscored, however, that the emergence of sharply graduated or "tiered" interest-rate structures is an unusual development in the interbank market. During the past decade, large interest-rate differentials developed after the German Herstatt Bank failed in the summer of 1974. Similarly, concerns about excessive exposure to problem credits have created funding problems at several U.S. banks during the latest period of financial stress. Interest-rate tiering on bank deposits only occurs after information emerges that a bank, or group of banks is sufficiently overexposed to risk that failure is probable. In other words, pricing adjustments in the interbank market tend to take place in an ex post rather than in an ex ante fashion.

The development of unquestioned confidence among depositors in the ability of financial-sector safety-net mechanisms to prevent unexpected losses from bank failure appears to have played a significant role in altering pricing in the interbank market. Specifically, the existence of deposit insurance, and the manner in which the existing deposit insurance system operates, reduces the incentives for depositors to require risk-related premiums on bank deposits.

Within the current framework, domestic deposits at FDIC-insured banks are legally protected up to $100,000. To provide this coverage, the FDIC charges a fixed-rate premium of one-twelfth of one percent of all domestic deposits at each insured institution. Legally, then, domestic deposits held in excess of $100,000 at a single institution are not covered by FDIC insurance; nor are the deposits held at the foreign branches of U.S. banks. In practice, however, the manner in which bank failures have been settled by the FDIC has provided de facto 100-percent coverage to all domestic depositors. Over time, uninsured depositors have become increasingly confident that existing deposit safety-net mechanisms, including the availability of discount window borrowing for banks facing funding constraints, would provide adequate time for them to remove their funds from troubled institutions before incurring financial loss. This perception also has

reduced concerns about the financial exposure of Eurocurrency depositors.

Since the FDIC began operations, most bank failures and, until Penn Square Bank failed, all large bank failures, were settled with a purchase and assumption (P&A) transaction. In a P&A transaction, the FDIC transfers all the liabilities of a failed bank to the assuming (acquiring) bank. If accomplished overnight, a P&A transaction avoids any interruption in the availability of funds to a domestic depositor. Until Penn Square, P&A was always used in recent times to settle claims for larger institutions. Depositors were paid off only in failures of some smaller institutions. Only in those cases were depositors with accounts in excess of $100,000 at risk.

By leaving large depositors partially at risk, the FDIC's handling of the Penn Square Bank failure introduced some uncertainty into the bank deposit market. Penn Square involved potentially severe litigation that precluded assumption by another bank. When the First National Bank of Midland failed with over $1 billion in assets, however, the FDIC reverted to its P&A policy. Large depositors therefore still have good reason to believe that the probability of loss from bank failure is very low.[6]

Reduced concern about financial loss from bank failure has also spilled over to the international deposit markets. The deposits of the foreign branches of U.S. banks are not FDIC-insured, and the U.S. parent bank is not legally bound to cover losses incurred by the depositors of its foreign branches. By the late 1970s, however, the temporary effects of the Herstatt Bank failure on interest rates had passed, and risk premiums between the domestic and Eurocurrency deposits of U.S. banks virtually disappeared. After the 1982 debt crisis surfaced, interest-rate differentials consistent with the existence of risk premiums again emerged (cf. Kreicher 1982). It is only after problems of major proportions emerge, however, that significant risk premiums are required by uninsured bank depositors.

Depositors, including large uninsured depositors, perceive that the probability of financial loss from bank failure is minimal. This perception delays the timing and dampens the magnitude of interest-rate adjustments that would normally occur in money markets. Similarly, the interplay between the system of deposit insurance and the

[6]The FDIC (1983, chap. 1, p.1) itself observes that:

> Since the FDIC began operations, some portion of failed bank situations have been handled in ways that have provided *de facto* 100 percent insurance coverage to all depositors and general creditors. . . . Especially in large banks, there probably is the perception among depositors of minimal risk of loss, and therefore there are few incentives to choose between banks based on financial condition.

lender-of-last-resort function has sharply reduced bankers' concerns about their ability to obtain adequate funding at profitable interest rates. In the event that deposit outflows generate liquidity problems, a constrained bank is able to meet its funding commitments by borrowing from the Federal Reserve's discount window. The net result of this process, which has evolved over time, is that day-to-day pricing adjustments in the domestic and international money markets have not imposed adequate constraints on bank risk taking. By reducing the market discipline that would normally be imposed by differential pricing on bank deposits, these safety-net mechanisms temporarily reduce the cost of risk taking. This enables the banks to undertake more risk. The cost reduction is only temporary, however, as the opportunity cost of assuming excessive risk is revealed once a borrower is no longer able to service his debt. As long as the risk-assuming institution is subject to losses from its exposure to risk, the cost of undertaking excessive exposure to risk will eventually be revealed. By altering the manner in which risk is priced, however, safety-net mechanisms have distorted the day-to-day signals being sent to banks about the magnitude of their risk exposure.

In sharp contrast to other financial markets, the bank deposit market reacts after the fact to events that have altered the risk/return situation facing bank decision makers. Instead of risk being continually repriced to the accompaniment of deposit flows at the margin, there is a comparatively sudden and massive movement of uninsured funds from banks whose probability of failure is high. By diminishing the incentives of depositors to monitor the performance of the banks in which they maintain their funds, deposit safety-net mechanisms, including deposit insurance, have encouraged banks to assume more risk than they otherwise would have assumed. In so doing, banks generate a negative externality, one known in the economics literature as "moral hazard."[7]

The moral hazard problem we identify is not a necessary outcome of the provision of deposit insurance, but it is generated by the manner in which the deposit insurance is priced and provided. By relying on the P&A transaction to settle failed banks, and by charging a fixed-rate premium for coverage without regard to the risk exposure of the covered institution, the existing system of deposit insurance

[7]Moral hazard describes a situation in which the provision of insurance increases the probability that the event insured against will occur. For instance, the provision of fire insurance may increase the incidence of fires. In some cases, arsonists may exploit situations in which structures are insured for more than their market value. More generally, those protected by insurance face reduced incentives to avoid fires. The insurance company bears most of the risk of loss. See Arrow (1971 pp. 142–43).

contributes to current difficulties. Short and O'Driscoll (1983) have addressed the issue of deposit-insurance reform, and have presented a transition proposal for moving toward a system of private deposit insurance. By removing the subsidies to risk taking currently provided by deposit insurance coverage, this reform would also begin to address the difficulties resulting from previous overexposure to credit risk in the international arena.

A Transition Proposal for Competitive Deposit Insurance

The specifics of our proposal for a transition to a system of competitive deposit insurance are presented in this section.[8] Our commitment is to the goal of competitive pricing of deposit insurance, not to the specific transition proposal presented here. Nonetheless, this proposal has the advantage of not interrupting the present system of deposit insurance. The FDIC would continue to provide basic deposit insurance while private capital is attracted to the industry. Once the transition is completed, the FDIC would continue supplying deposit insurance as one among a number of competitors.

To reach a system of private deposit insurance, we offer the following four policy recommendations:

1. Eliminate de facto coverage of deposits above statutory limits, reduce coverage limits, and introduce some form of coinsurance.
2. Eliminate the statutory requirement that nationally chartered and state-chartered member banks, as well as banks associated with bank holding companies, purchase deposit insurance from the FDIC.
3. Impose a requirement that the FDIC utilize the best available information to determine risk categories; and that these risk classifications be used to set premiums that minimize cross-subsidization among risk categories.
4. Impose a requirement that the FDIC cover costs plus earn a reasonable return on capital.

The first recommended change, which is perhaps the most important, is needed to attract private firms to the deposit-insurance business. The policy of providing de facto 100–percent coverage to all depositors has lessened market discipline on banks by minimizing depositors' fears of loss. It has also effectively precluded a market for excess deposit insurance. Excess insurance would be insurance coverage over and above the limits of the basic policy. The market

[8]This section draws heavily from Short and O'Driscoll (1983).

for excess coverage is the most likely place for private competitors to enter. The scope for competitive entry would be increased by lowering the maximum deposit covered by the FDIC. In offering excess coverage, private insurers would price insurance to reflect expected losses, so risk would be priced on the margin. Basic FDIC coverage should also be altered to include some form of coinsurance.[9] If, for example, coverage could be reduced to 80 percent of losses, this too would reduce moral hazard by encouraging risk to be priced more accurately at the margin.

After substantial experience with excess coverage, some companies might choose to compete with the FDIC in providing minimum or basic insurance for depositors. Our second policy recommendation would have to be adopted to open the market for basic insurance coverage. At present, private deposit insurance is not prohibited by any federal or state statute, but most banks are required to purchase FDIC insurance. If broad-based coverage by private insurers is desired, this requirement would have to be lifted. When coupled with the FDIC's de facto provision of 100-percent coverage, there is little reason at present for banks to be interested in private insurance.

The third recommendation is motivated by the FDIC's reluctance to use information gained in the examination process when setting insurance premiums. Some of the FDIC's concerns in this regard are meritorious, but the best available information about risk characteristics is needed to price risk accurately. As Short and O'Driscoll (1983, pp. 18–20) argue, better information on risks is needed to reduce cross-subsidization among different risk classifications.[10]

The fourth recommendation is intended to make competition feasible for both basic and excess deposit-insurance coverage. The experience of public utility regulation suggests that determining what is a "normal" or "necessary" return on capital presents severe problems. Nevertheless, some thought must be given to the rate of return required on FDIC insurance operations. If the rate of return is set too low, the FDIC's pricing would preclude entry. If the rate of return is set too high, the FDIC's rates would act as an "umbrella" protecting private competitors. Entry would be restricted in the first case, while in the latter case, high short-run private returns would lead to excessive long-run entry.

[9]Because of the growing importance of money brokers, it is not sufficient to lower coverage. As Short and O'Driscoll (1983, p. 18) note, these brokers can economically bundle accounts as low as $1,000 into $100,000 lots, thus earning both higher interest and FDIC insurance protection.

[10]Cross-subsidization occurs if insurance premiums do not fully compensate the insurer for losses incurred within a given risk category.

The suggested changes could be implemented by using, as a transition model, the current system of pricing check-clearing services. In the Monetary Control Act of 1980, Congress mandated that the Federal Reserve System price its services, including check clearing, with the aim of promoting competition with private firms. Federal Reserve Banks have had to identify costs directly attributable to clearing checks, and they are required to earn a reasonable rate of return on imputed capital.

The judgment of Federal Reserve Banks about their relevant costs has not gone unchallenged, but the cost analysis used thus far has withstood criticism. As Frodin (1984) demonstrates, vigorous competition has developed in the area. The criteria and operating procedures used by Federal Reserve Banks can be expected to change in response to these competitive pressures, and have already done so in some respect. Any arbitrariness in cost and profit criteria can be reduced over time, as evidence accumulates about competitive practices in the industry. The same process would operate for the FDIC and other deposit insurers.

Our proposal goes further than the FDIC's own program in implementing the goal of pricing risk. The FDIC is concerned about the inequities and misallocations that can be generated by inappropriately pricing risk. Their proposal does not, however, adequately address these problems. Without a profit-and-loss test, all that can be determined is whether risk has been severely underpriced, and this can only be revealed after the fact and at great cost. If there is an institutional bias, it is toward underpricing risk. For this reason and others, we recommend that a system of competitive deposit insurance be implemented.

Conclusion

Our main focus has been to explain how the incentive structure provided by one public safety net contributed to the world debt crisis. Although we presented some brief evidence on the dimensions of the problem, we were interested not in demonstrating its severity but in analyzing its causes. We are by no means suggesting that there is a unique cause, or that any one policy action or set of actions will preclude a similar crisis from occurring in the future. We believe, however, that financial safety-net mechanisms played an important role in the present crisis. In particular, the present system of deposit insurance provided institutions with strong incentives to undertake undue risk. Because of the way in which the FDIC administers deposit insurance, even large depositors at U.S. banks and their

foreign branches perceive that their funds are not at risk. This has reduced incentives for depositors to demand risk premiums on bank deposits commensurate with the risk exposure of the bank. The lack of market discipline enabled banks to assume more risk than would otherwise have occurred.

The world-debt problem, along with problems from energy-related loans and the excess exposure of thrifts to interest-rate risk, are reflections of the incentive effects of public policy, including existing statutes on deposit insurance. If reform of deposit insurance is not implemented, we can only speculate on what problems will be added to those already mentioned.

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INTERNATIONAL LENDING AND THE ECONOMIC ENVIRONMENT

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The paper by O'Driscoll and Short argues that public safety-net mechanisms "played an important role in the present crisis" (p. 203) of international lending.[1] The one mechanism they explore, apart from a passing reference to other financial safety-net mechanisms including IMF lending and the Federal Reserve System's lender-of-last-resort function, is the present system of deposit insurance. They argue that deposit insurance encourages banks "to accept more credit risk than they would have accepted in the absence of this system" (p. 186), and that international debt problems are only one of several sets of financial sector difficulties attributable to overexposure to risk.

I believe O'Driscoll and Short's analysis of the moral hazard problem that the present system of deposit insurance generates is sound. Excessive risk that in retrospect the banks undertook, however, is only indirectly related to the effects of deposit insurance in my view. The banks' behavior is more immediately related to their projection of a continuation of inflation and their failure to foresee the change in circumstances they and the borrowers would face should world economic activity contract with a fall in U.S. inflation rates. An essential ingredient missing in the paper is the economic environment in which the international loans were extended and came to grief.

Let me first summarize in greater detail the argument of the paper before turning to the reasons that lead me to question its conclusion. The paper includes four sections. In the first one, the authors review areas of current financial sector weakness, including the plight of thrift institutions and domestic and international loans of key

Cato Journal, Vol. 4, No. 1 (Spring/Summer 1984).

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[1]Gerald P. O'Driscoll, Jr. and Eugenie D. Short, "Safety-Net Mechanisms: The Case of International Lending," *Cato Institute* 4 (Spring/Summer 1984): 185–204.

commercial banks. They cite the rise in the failure rate of commercial banks since 1975 as evidence of a permanent structural change rather than ordinary cyclical factors affecting the U.S. banking system.

In the second section, the authors briefly review the dimensions of the international debt problem. They note the expansion from the mid-1970s to mid-1982 of international assets and liabilities of U.S. banks held primarily at their foreign branch offices, a shift from private to public sector lending in Euromarkets, and the rating of public sector borrowers as lower-risk, despite the inadequacy of information to determine their credit-worthiness. The authors regard the cavalier treatment of risk assessment as an indication of an alteration in "the decision-making process at U.S. banks with respect to risk taking" (p. 191). The assumption is that it was deposit insurance that produced the alteration in the decision-making process, but I would argue that it was rather the inflationary environment.

Although the authors acknowledge that "Official support of aggressive foreign lending may have contributed to a climate in which U.S. bankers exercised less caution than they otherwise would have" (p. 191), in the main, they "look to the incentive effects of deposit safety-net mechanisms" (p. 195) to explain the banks' miscalculation in continuing to extend loans to non-OPEC developing countries when by 1978 OPEC surpluses were shrinking. The loans directly or indirectly supported consumption or dubious public-sector investment projects that were in effect also loans for consumption. Servicing the debt presents problems for the borrowers to the extent that the loans were not used productively. These are long-term problems because the liquidity problems will recur for borrowers whose medium- and long-term debt maturities have been extended. Latin American governments have resorted to inflation to erode the value of debts contracted in domestic currencies, possibly as an offset to the burden of their U.S. dollar debt that cannot be reduced in real value by such inflation. An unintended consequence of domestic inflation, the authors note, may be the destruction of the wealth of domestic creditors.

In the third section, to account for the systematic underestimation of risk in international lending by U.S. banks, the authors focus on the role of the banks' circumvention of regulatory restrictions. To restrain risk taking, in the past the FDIC relied on entry restrictions, limitations on costs through Regulation Q, and asset restrictions through the separation of commercial from investment banking.

However, the banks found ways to escape the restrictions. The paper makes a useful contribution in reviewing the devices the banks innovated. In particular, in response to capital controls and domestic

branching restrictions, major U.S. banks established a network of overseas branches during the 1970s. Tax laws, interest rate restrictions, and reserve requirements led to the growth of the Eurodollar market and the expansion of international lending by U.S. banks. Because of Regulation Q, large multinational banks turned increasingly to Euromarkets for financing, since interest rates and deposit maturities there were market determined. Concerns about liquidity constraints diminished as the banks were able to raise funds for a price at any maturity. The financial innovation of the rollover credit, a credit variable rate tied to the London Interbank Offered Rate at which banks borrowed, enabled them to limit exposure to interest-rate risk. The spread between interest rates on their assets and the interest rates on their liabilities with different maturity structures induced banks to participate in large Euro-syndicated credits. Although large multinational banks and regional banks normally pay uniform rates on the funds they raise in both the domestic and international interbank markets, significant differences appear only after a crisis develops.

The authors' explanation for the characteristic uniform pricing of deposits in the interbank market seems to me correct. It is that financial safety-net mechanisms will prevent unexpected losses from bank failures. The mechanisms also reduce the incentives for depositors to require risk-related premiums on bank deposits. Depositors have no incentive to place deposits only with prudently managed banks, since deposit insurance makes less prudently managed banks equally safe for depositors. Banks in turn need not be concerned with the possibility of deposit outflow.

In the new deregulated environment, continued subsidies by deposit insurance to risk taking contribute to the increase in bank failures. In effect the FDIC subsidizes risk taking by covered banks, freeing depositors from the responsibility to monitor the soundness of banks, and fostering instability in the banking system, at the ultimate expense of taxpayers. Moral hazard is the upshot. Moral hazard arises because the FDIC transfers all the liabilities of a failed bank to an acquiring bank with no interruption in availability of funds to a domestic depositor and charges a fixed rate premium for coverage without regard to the risk exposure of the covered institution.

In the final section of the paper, the authors review changes that they have proposed now that the FDIC no longer can rely on restrictions on bank behavior to restrain risk taking. Under their recommendation, to attain competitive provision of deposit insurance by private firms, risk would be priced, with competition offering a profit-

and-loss test that insurance risk covering deposits has been appropriately priced.

Having summarized the contents of the paper, let me turn to the basic problem that I find with it. Is it the effect of deposit insurance that accounts for the plight of thrift institutions and the troubled energy-related credits and international debt portfolio of large commercial banks? The plight of thrifts, I believe, is more directly related to the regulations under which they operated and the gathering inflation since the mid-1960s. Limited by regulation with respect to certain asset categories, limited by regulation with respect to the interest they could pay on shares—as deposits at thrifts were known—thrifts were not meant to operate in an environment in which interest rates included a growing inflation component. The institutions were hemmed in with long-term low-interest-rate mortgages and short-term sources of funds that leaked away from them as markets offered competitive rates. The thrifts could not afford to pay competitive rates even if permitted by the regulators. I do not believe the example of the thrifts can be cited in support of the argument that the current deposit insurance system provides incentives for excessive risk taking. If anything, the example of the thrifts supports the argument for deregulation and for a stable monetary system.

What about the international debts of commercial banks? Can they be directly linked to the effects of the deposit insurance system? Now we know that it is not only large U.S. banks that have underestimated interest rate risk and credit risk on their international loans. English, German, Japanese, and Swiss banks are also in the same boat. It has been reported that the English provide partial deposit insurance, but none of the other countries do. We also know that at other times what turned out to be imprudent foreign loans, as in the late 19th century, were made by English banks to Latin American countries and in the 1920s by U.S. banks to a varied group of countries. These loans were extended before deposit insurance existed. Does this record prove that excessive risk taking was responsible? I believe that a case can be made for the banks in the 1920s: Ex ante they evaluated risk adequately by charging higher interest rates on more risky loans. Ex post, in a world in depression, the loans turned out to be imprudent.

The authors cite the crumbling of regulation after 1974 as removing constraints that formerly restricted U.S. banks. Clearly, however, the crumbling of regulation occurred because inflation stimulated financial innovation and technological changes that led to de jure deregulation. It was not the availability of deposit insurance that accounts for that result. Given the sorry record of attempts to curb inflation

since the mid-1960s, it is not hard to credit the banks' belief that inflation would be the dominant influence on world economic developments over the short-run maturity of most foreign loans that they extended in the late 1970s and early 1980s. The same belief applied to energy-related credits. The banks turned out to have been wrong. That it was deposit insurance that led them to entertain such a belief also strikes me as less obvious than it is to the authors.

Finally, what explains the low bank failure rate in most of the post-World War II period—regulatory restriction or a relatively stable economy with a low inflation rate? In my view, the explanation is the condition of the economy. Bank failure rates may well decline to match earlier postwar levels if we can restore a stable economy and eliminate high and variable inflation rates.

Nevertheless, reform of the deposit insurance system is desirable and I applaud the recommendations that O'Driscoll and Short have made to that end. In short, the paper is a first-rate analysis of the shortcomings of the present deposit insurance system, but I doubt that it adequately explains why large banks in the industrialized world now have problems collecting interest on and the principal of the loans they made to foreign governments and firms.