Research Department
Federal Reserve
Bank of
San Francisco

September 17, 1982

FRBSF Weekly Letter

Risk, Insurance, and Central Banking

In the last two years, news of weakness in large domestic and foreign depository institutions has shaken the financial markets. The recent failure of some institutions has highlighted the increased level of risk and the role of monetary authorities in dealing with it.

When the subject of risk for depository institutions is raised, most people in the United States think of deposit insurance. However, this insurance is but one form of support which monetary authorities around the world provide to their financial systems. These various forms of support are designed to protect depositors and institutions from risk but they also directly affect the risks taken. Hence, the way in which authorities react to recent developments is of widespread concern. In this *Letter*, we attempt to put this issue in perspective by applying the economics of risk and insurance to the behavior of depository institutions.

The "moral hazard" problem

Individuals who are fully insured against loss (e.g., fire, theft) may be expected to take greater risks than if they were not fully insured. To counteract this tendency, insurance companies try to discriminate among individuals by charging higher premiums to those who take less care and hence undertake greater risks. However, the insurance company cannot always observe the level of care taken by the insured individuals and so must base its policy premiums on the average historical experience of the potentially insurable population. This inability to price actual risk and to influence risk-taking behavior tends to reduce the level of care taken by some insured individuals. As a result, insurance companies are exposed to the potential for large losses. This is known as the problem of "moral hazard."

To minimize this problem, the insurance company needs to provide some incentive to the insured to act more prudently. Most insurance policies contain this incentive in the form of a *deductible* and cover only losses above the deductible.

A similar moral hazard problem can occur in the relationship between banks and monetary authorities. The monetary authorities wish to assure their countries of a sound payments system by providing certain explicit and implicit assurances of aid to the financial industry in times of stress. However, they do not wish to make commitments which increase the likelihood that depository institutions will take on "excessive" or "imprudent" risks. Thus, although the payments system may be made more secure by stronger assurances of support to financial institutions, such assurances may induce those institutions to acquire more risky assets than they otherwise would have and so cause too many of society's savings to be channeled into highly risky enterprises. On the other hand, eliminating or greatly reducing such assurances increases the chance of disruption to the payments system and, at the same time, may cause institutions to channel too few resources into risky but potentially productive investments.

Insurance and assurance

Most depositors are familiar with the most prominent form of support provided to depository institutions in the U.S.—deposit insurance. All federally-chartered banks, savings and loan associations, and credit unions are required to carry deposit insurance. The vast majority of state-chartered banks and savings and loans are insured even though some states do not require coverage. However, a substantial number of state-chartered credit unions are not insured.

Deposit insurance, however, is not common around the world. Only thirteen countries possess deposit insurance and of these only a few are large industrial countries. There are no compulsory deposit insurance require-

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ments for commercial banks in Italy, France or Germany, although the last does have a voluntary industry-operated program.

Monetary authorities do provide a range of alternative support services to depository institutions. Instead of explicit insurance, they provide "assurance"—the assurance that the authorities will provide certain services when depository institutions face unexpected or uninsurable risks. This assurance is often implicit and influenced by the legal and socioeconomic customs of the country. In many countries, the existence of a central bank functioning as a lender of last resort to private financial institutions provides this assurance. In the U.S., for example, the assurance that the Federal Reserve will provide additional reserves to the banking system in times of financial crisis increases the public's confidence in the banking system, reduces the likelihood of "runs" on banks, and thus, lowers the risks they face.

The justification for having a lender of last resort and/or a deposit insurance scheme is twofold. First, because depository institutions do not match the maturities of their assets to those of their liabilities, their continued viability depends on their customers' confidence that deposits will be redeemable in cash when they are due. In the case of transactions deposits, of course, this means "on demand."

Second, these institutions function not only as financial intermediaries—channelling funds from savers to borrowers—but also as providers of our payments system. When an institution which issues transactions accounts fails, it disrupts the payments system and causes inconvenience and perhaps financial loss to individuals and businesses other than its own customers and owners. It is generally thought to be socially desirable to avoid these harmful "spill-over" effects by reducing the number of bank failures, or at least, by minimizing their disruptive impact.

Financial innovation

The moral hazard problem facing the monetary authorities is particularly acute in view of the major changes taking place in our financial system today. By any measure, depository institutions now have to cope with more competition and risk than ever before.

A wide variety of financial institutions now offer transactions deposits, a service which, until recently, was the sole prerogative of commercial banks. In June 1982, 58 percent of the short-term liabilities of banks and thrift institutions consisted of deposits whose yields fluctuated with market rates. This compares with only 12 percent five years ago. Nominal interest rates, both short and long, have become more volatile, while real interest rates—nominal market rates less observed inflation rates—have, until very recently, been at levels not seen since the 1930s. New institutions—including not only the money market mutual funds but also a growing number of conglomerates such as Sears Roebuck, Shearson-American Express, and Merrill Lynch—are offering financial services which encroach upon the traditional "turf" of banks and other depository institutions.

In the next few years, the Depository Institutions Deregulation and Monetary Control Act of 1980 will continue to liberalize our financial system by further raising interest rate ceilings and by creating new financial instruments. This liberalization will increase competition among financial institutions and raise questions about the types of insurance and assurance that monetary authorities traditionally have provided.

Regulation and deductibles

Historically, there have been two principal solutions to the moral hazard problem in the United States. First, the monetary authorities in their role of "insurer" observe and regulate the operations of the "insured" financial institutions. Much of this activity of both federal and state authorities is designed to ensure that depository institutions do not accept "undue" amounts of risk. For example, they monitor the capital adequacy and the loan

quality of institutions. Depository institutions are also barred by statute from engaging in certain types of financial activity, such as corporate and revenue bond underwriting, which are considered too risky. Some regulations have limited the yields which depository institutions may offer on their liabilities, and thereby reduced their cost of funds. These regulations were designed partly to channel low cost loans to particular sectors but also to discourage institutions from acquiring high-yielding, but risky, earning assets.

The second way of dealing with moral hazard has been via a "deductible." In the United States, deposits up to $100,000 per account are insured but those in excess of this level are not. At the end of 1981, only 70 percent of the deposits of insured banks were covered by insurance. Although not quite the same as a deductible in conventional insurance policies, this dollar ceiling serves the same purpose of discouraging excessive risk exposure.

The increased risk in today's financial market, coupled with reduced control of the insured institutions by regulatory authorities, would prompt a private insurer to raise the deductible in its insurance policies. Two recent cases suggest that the monetary authorities are doing likewise. These two recent illustrations of the moral hazard problem in banking, one domestic and the other international, are the Penn Square Bank and the Banco Ambrosiano S.A. of Milan, Italy, cases.

With most bank failures in recent years, the Federal Deposit Insurance Corporation has arranged for a healthy institution to take over the failing bank. All depositors—not only those with accounts of less than $100,000—were thus protected. In the Penn Square case, however, the FDIC chose to close the bank and pay off only the formally insured depositors. As a prominent business weekly put it, the regulators sent a "very expensive message: Be more careful" to banks and their depositors.

In the Banco Ambrosiano case, the central bank of Italy did not provide the same treatment to the creditors of the Banco Ambrosiano's holding company in Luxembourg as it did to the Milan bank's domestic creditors. A recent *Wall Street Journal* article by Paul Blustein quotes Beniamino Andreatta, Italy's Treasury minister, as saying that creditors knew of the additional risk of the Luxembourg affiliate and accordingly demanded a premium over loans made to the Milan parent. The Wall Street Journal quotes Mr. Andreatta as saying, "I think it's useful for the international community to know that banks are risky enterprises and that it's possible and necessary to evaluate risk."

Both explicit deposit insurance programs and implicit central bank assurances of help for commercial banks in times of stress change the behavior of the institutions. The deregulation of the financial system worsens the moral hazard problem. In the cases of Penn Square Bank and Banco Ambrosiano, the regulators appear to have reacted to these changes by re-defining the risks they believe the market should evaluate and bear. (There are already signs that the market is reflecting this in the higher deposit rates demanded from some institutions.) This apparent change in the regulators' behavior may be interpreted as an increase in the deductible designed to offset their reduced ability to control the assured institutions.

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 9/1/82	Change from 8/25/82	Change from year ago Dollar	Percent
Loans (gross, adjusted) and investments*	161,450	1,585	8,662	5.7
Loans (gross, adjusted) — total#	141,567	1,612	9,954	7.6
Commercial and industrial	44,921	919	5,104	12.8
Real estate	57,445	136	3,281	6.1
Loans to individuals	23,560	101	552	2.4
Securities loans	2,435	95	1,067	78.0
U.S. Treasury securities*	6,334	0	416	7.0
Other securities*	13,549	– 27	– 1,708	– 11.2
Demand deposits — total#	41,852	4,136	1,126	2.8
Demand deposits — adjusted	28,471	1,655	473	1.7
Savings deposits — total	31,221	442	1,388	4.7
Time deposits — total#	99,090	– 627	12,417	14.3
Individuals, part. & corp.	89,487	– 532	11,067	14.1
(Large negotiable CD's)	37,263	– 452	1,728	4.9

Weekly Averages of Daily Figures	Week ended 9/1/82	Week ended 8/25/82	Comparable year-ago period
Member Bank Reserve Position			
Excess Reserves (+)/Deficiency (–)	606	192	270
Borrowings	6	87	64
Net free reserves (+)/Net borrowed(–)	600	105	206

* Excludes trading account securities.
# Includes items not shown separately.

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