



THE FINANCIAL MARKET ACTIVITIES OF INSURANCE AND REINSURANCE COMPANIES

Insurance and reinsurance companies are an important and growing class of financial market participants. They insure a wide variety of business and household risks, thereby facilitating economic and financial activity. In addition, amid a drive to raise profitability they have become increasingly important investors and intermediaries in a broad range of financial markets around the globe. They bring innovative insurance approaches to capital markets, providing insurance cover for financial risks, intermediating their own insurance risks in the markets, and in the process developing new instruments that help to bridge the gap between banking and insurance products. Insurers and reinsurers have broadened the range of available instruments, increased the diversity of market participants, created new opportunities for corporations and financial institutions to fund their activities and hedge risks, and contributed to liquidity and price discovery in primary and secondary markets.

Compared with commercial and investment banking, much less is known about the financial activities of insurance and reinsurance companies and the overarching environment in which insurance and reinsurance companies conduct their core businesses. This chapter tries to fill part of this gap by identifying issues that are likely to attract increasing attention and that may have medium-term implications for financial stability and/or efficiency. The first section of this chapter discusses the size and structure of insurers' and reinsurers' financial activities and how they have evolved in recent years. The second section explores some of the more forward-looking financial stability issues, including those

surrounding a number of uncertainties about insurers' and reinsurers' financial market activities, and the attendant potential implications for financial efficiency and stability in the medium term.

Insurance and Reinsurance Financial Activities

Insurance companies' asset holdings grew substantially during the 1990s, including relative to banks. Between 1990 and 1999, the financial assets of insurers in seven major countries grew by 150 percent to over \$10 trillion, while the assets of banks in the same countries grew by 50 percent to \$25 trillion (Figures 3.1 and 3.2).¹ In most countries, insurance companies hold larger amounts of financial securities than banks (Figure 3.3). Moreover, their holdings of international and domestic securities are large relative to domestic markets (Figure 3.4).² For example, U.S. insurers are the largest domestic investors in corporate and foreign bonds (Figure 3.5). Insurance companies' large asset pools are mainly invested conservatively, consistent with regulatory restrictions, although the composition of asset portfolios varies substantially across countries (Figures 3.6 and 3.7).³

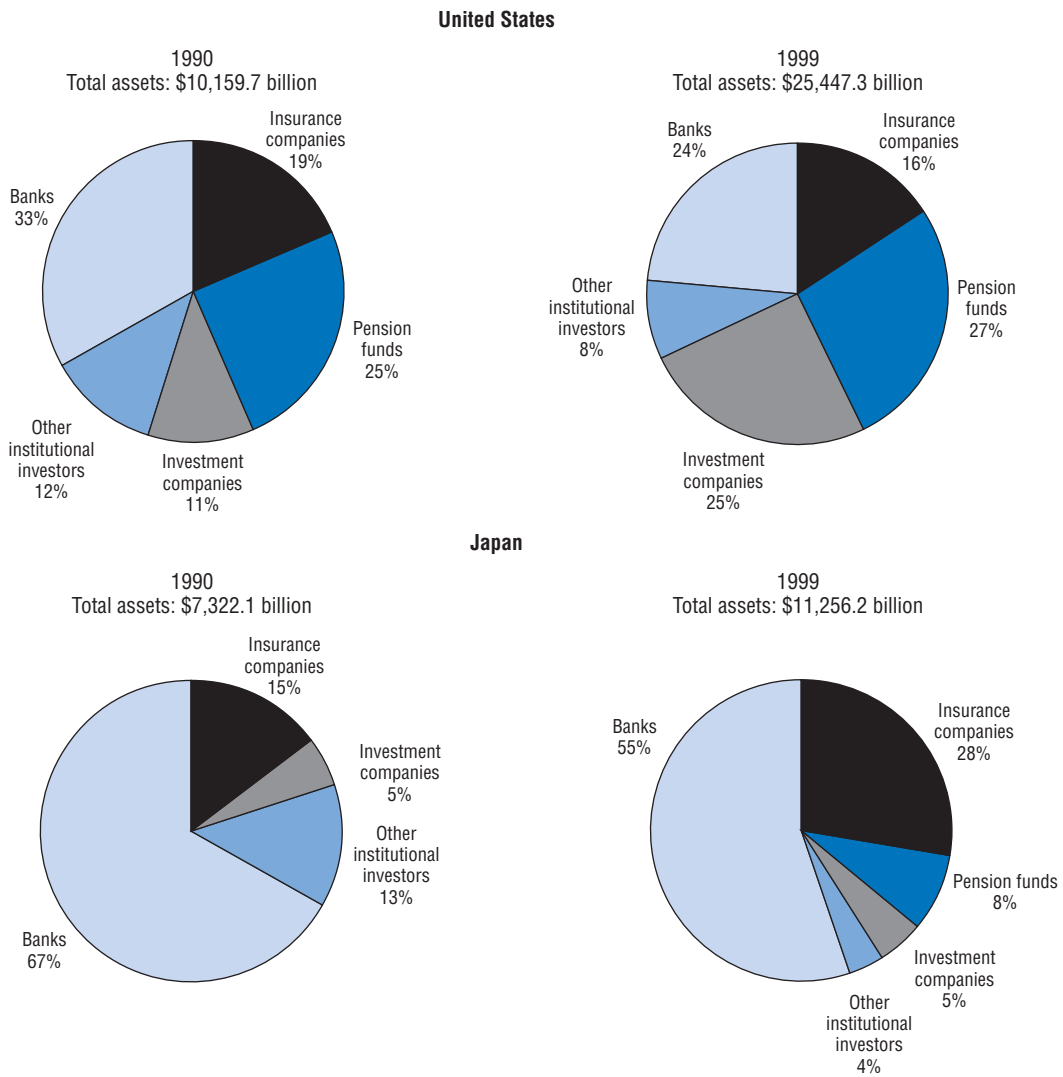
In addition to investing, life insurance companies offer retail financial products in the form of hybrid insurance contracts/mutual funds. These are growing rapidly in some countries. In the United States, about half of all new life insurance policies are unit-linked (linked to market returns). Such products are also popular in Europe, where they may have tax advantages

¹The seven countries are France, Germany, Italy, Japan, Switzerland, the United Kingdom, and the United States.

²For most countries, holdings of securities are not broken down into domestic and foreign. It is therefore impossible to make cross-country comparisons of domestic holdings relative to domestic market size.

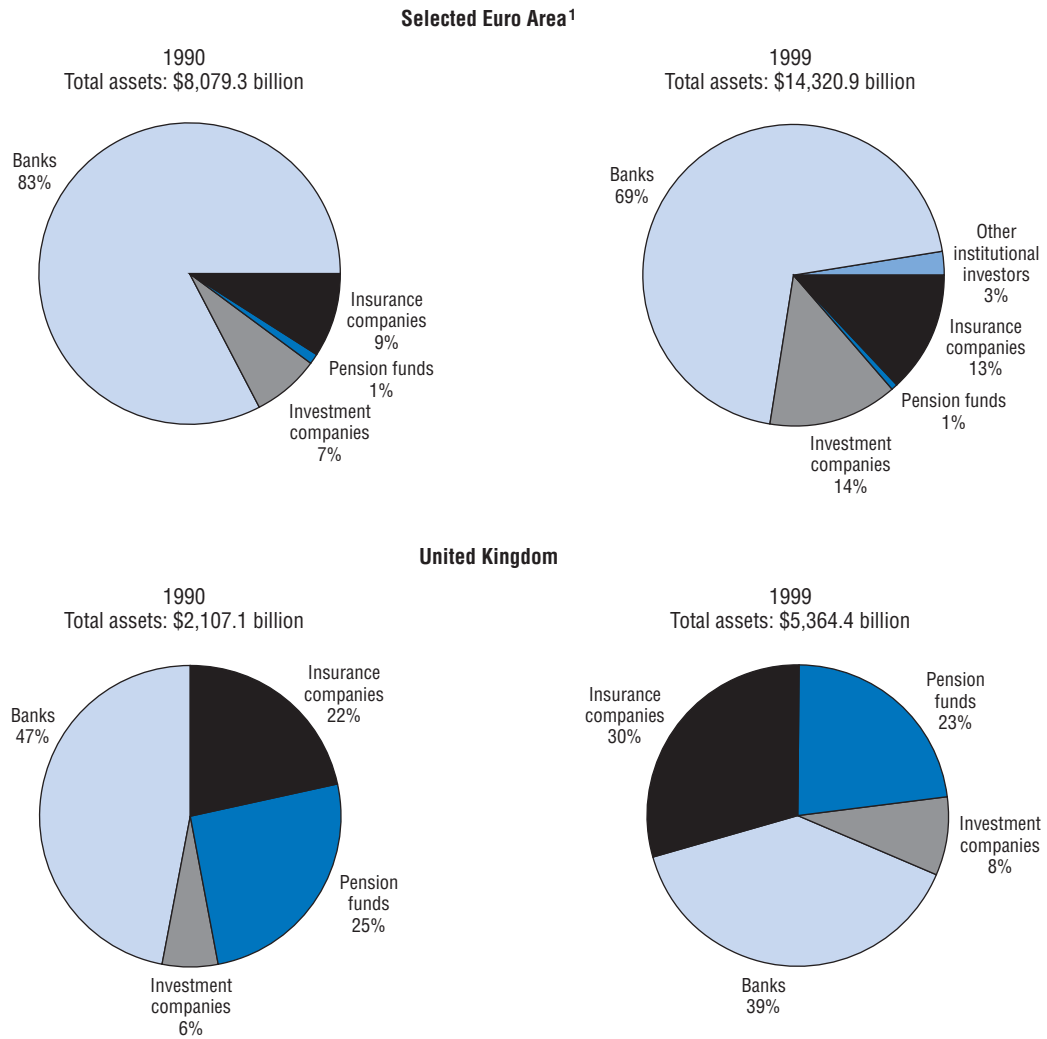
³See Joint Forum (2001a) for more detailed explanations of regulatory restrictions.

Figure 3.1. Total Financial Assets of Institutional Investors and Banks: United States and Japan



Source: Organization for Economic Cooperation and Development.

Figure 3.2. Financial Assets of Institutional Investors and Banks: Selected Euro Area Countries and United Kingdom



Source: Organization for Economic Cooperation and Development.
¹Selected euro area countries are France, Germany, and Italy.

Table 3.1. Life Insurance: Premium Growth Rates

	Single Premiums as a Percent of Total Life Business		Average Annual Growth Rates 1995–2000 (in percent)	
	1995	2000	Single premiums	Annual premiums
United States ¹	12.7	16.2	8.1	2.1
Japan	9.8	6.8	-10.6	-3.1
United Kingdom	47.4	76.9	29.8	-0.1
France	69.2	71.7	6.1	3.5
Germany	9.3	11.6	9.3	4.0
Italy	36.9	60.1	36.9	13.4
Australia	59.7	82.3	19.6	-4.8
Netherlands	38.7	46.3	12.9	6.2
Switzerland	48.8	55.4	7.4	1.9
South Africa ²	9.0	8.4	7.2	9.2

Source: Swiss Re, *sigma* No. 6/2001.

¹Only personal life business.

²Time period 1995–99.

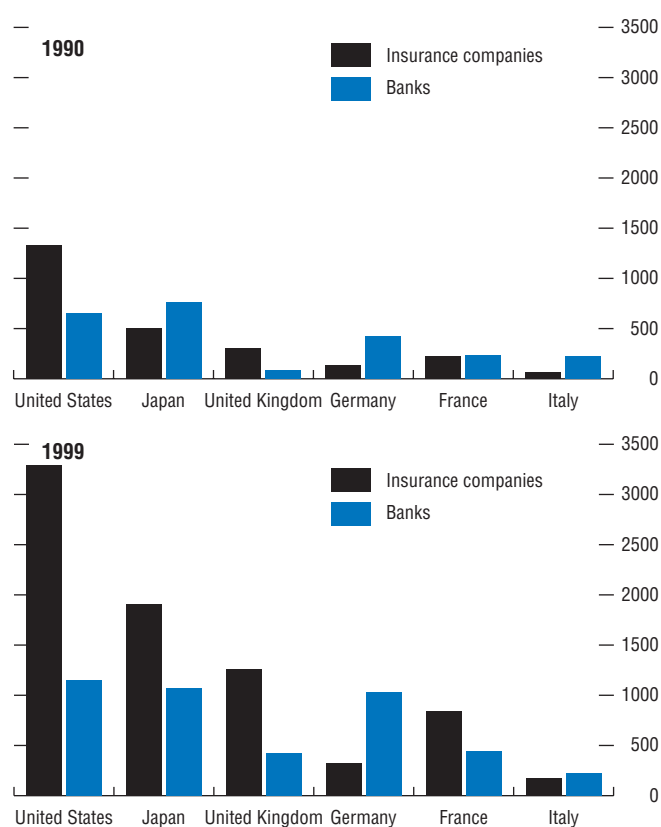
over mutual funds. In Italy, they include single-premium, unit-linked products, which exchange a large up-front payment for a mutual fund that incorporates a life insurance policy. Such products are often sold through *bancassurance* groups or joint ventures between banks and insurance firms.

Influences on Insurers' Profits and Approaches to Their Financial Activities

The overall profitability of an insurance company depends on the net profitability of its insurance underwriting and financial activities. Three main factors influence this profitability. First, the incidence and size of claims. Notable increases in non-life insured losses arose following Hurricane Andrew in 1992 and September 11 in 2001 (Figure 3.8). Second, the prevailing level of premiums. During the 1990s, premiums have tended to grow at an inflation-adjusted rate of about 5 percent (higher for life, lower for non-life)—well below average rates attained during the 1980s (see Figure 3.8 and Table 3.1). Third, the performance of financial markets. Since the early 1980s, insurance companies in the major countries have been increasingly successful in reaping investment returns that compare favorably with the yield on domestic government bonds (see Figure 3.8).

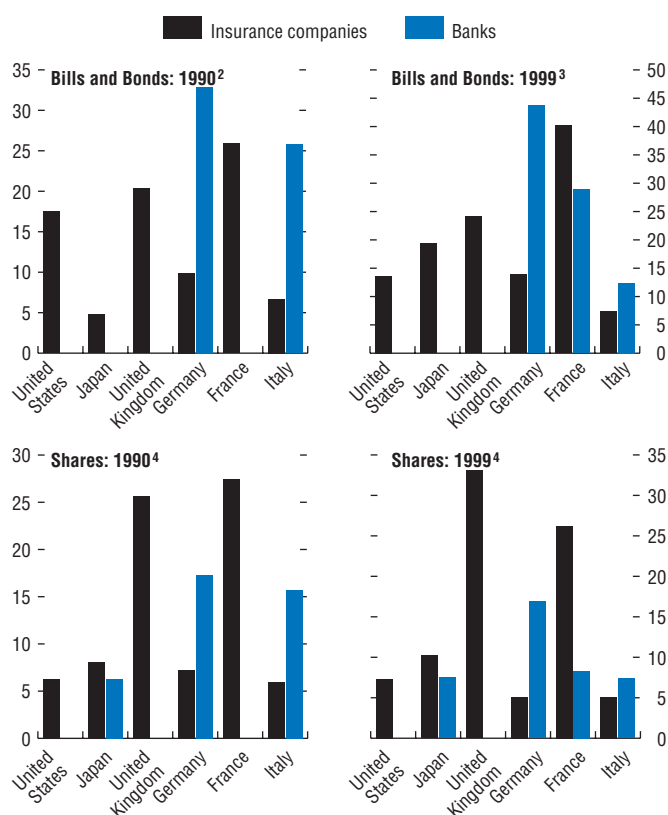
Figure 3.3. Holdings of Financial Securities by Insurance Companies and Banks

(In billions of U.S. dollars)



Source: Organization for Economic Cooperation and Development.

Figure 3.4. Holdings of Securities Relative to Domestic Market Size¹
(In percent)



Source: Organization for Economic Cooperation and Development.
 Note: For banks, if a bar is not shown, data are not available.
¹Bank holdings include resident and nonresident holdings.
²For France, Germany, and Italy, data refer to resident and nonresident holdings.
³For France and Germany, data refer to resident and nonresident holdings.
⁴Holdings of shares include resident and nonresident holdings.

Since the mid-1990s, non-life insurance loss ratios (relative to premiums) ranged from 57 percent in Japan to 85 percent in France (see Table 3.2). Expense-to-premium ratios ranged from 23 percent in France to 36 percent in Japan. Adding these two ratios into the “combined ratio” gives a standard, widely used measure of the overall profitability of an insurance company’s core underwriting business (apart from the return on its market investments). As Table 3.2 and Figure 3.9 show, in most countries, non-life insurers had combined ratios above 100 percent, implying that on a cash-flow basis and excluding investment returns, insurance underwriting was loss-making. Except in Germany and Japan, losses plus expenses exceeded premiums by 5 percent to 14 percent. In Japan and Germany, returns on underwriting were 3.3 percent and 1.5 percent, respectively.⁴

Non-life insurers in these countries made up for underwriting losses, or augmented underwriting returns, through investment. Investment yields ranged from 2.9 percent in Japan (reflecting low government bond yields and declining stock prices) to 9 percent in the United Kingdom, and translated into investment results (expressed as a percent of premiums) ranging from 12.5 percent to 24.6 percent in the respective countries. Net of taxes and other expenses, underwriting and investment results translated into profit margins from 0.8 percent (Italy) to 10.7 percent (United Kingdom), and returns on equity from 2.9 percent (Germany) to 10.1 percent (United Kingdom).

Reaping strong investment returns has been especially important for life insurance companies that have high guaranteed rates of nominal return on existing policies. In the 1980s and early 1990s, insurance companies offered high guaranteed returns on insurance policies, reflecting the ability to earn very strong market returns on asset portfolios, high premium in-

⁴In the late 1990s, the positive results in Germany and Japan partly reflect accounting conventions that exclude some expenses or include investment income in the combined ratio. See Swiss Re (2001).

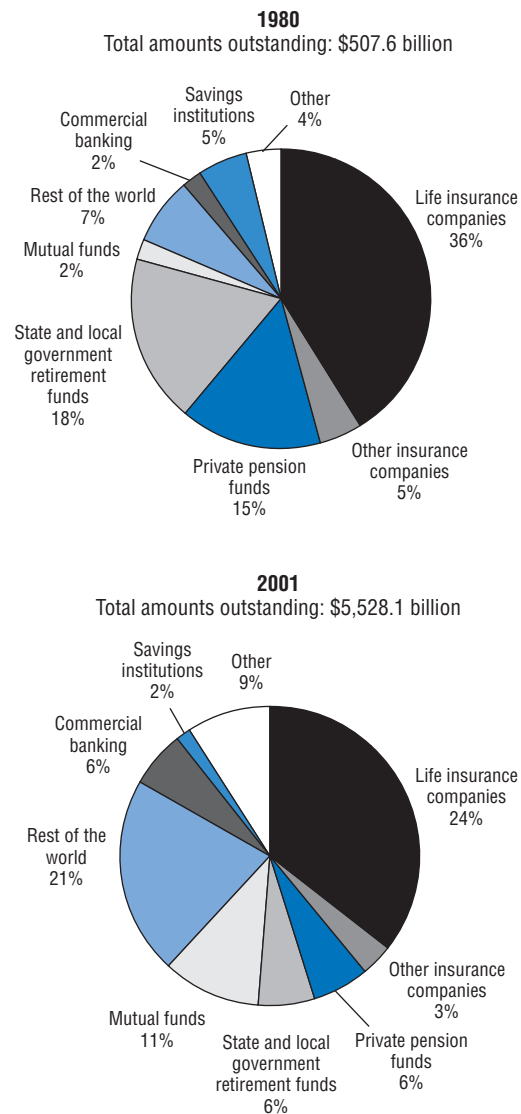
comes, and, in some countries, high minimum rates mandated by regulators. As nominal bond yields sank during the 1990s amid declining inflation and the euro area convergence process, meeting these guarantees became more challenging. In Japan and Switzerland, government bond yields slid below guaranteed rates on existing policies.

During the 1990s, insurers responded to an environment of lower real premium growth by managing asset portfolios more actively and shifting the asset mix into potentially more volatile investments. Between 1990 and 1999, insurers' investments in corporate equities rose from 17 percent to 27 percent in the euro area, from 53 percent to 61 percent in the United Kingdom, and from 10 percent to 31 percent in the United States.⁵ In addition, the development of emerging market and corporate bond markets, including the market for lower-rated credits, offered insurance companies opportunities to raise investment returns. Active asset management together with realized capital gains from rising bond and share prices enabled insurance companies in most countries to earn an investment yield above that of the long-term government bond yield in their home country (see Figure 3.8).

The Recent Shift into Newer Financial Market Activities

In the 1990s, periods of soft premiums and low bond yields also spurred innovations that fostered convergence between insurance and capital markets. Insurers divested less profitable insurance risks in the form of catastrophic risk ("Cat") bonds—bonds with payoffs linked to a catastrophic event. Reinsurers have also diversified their insurance business by developing the profitable "alternative risk transfer" (ART) market for customized reinsurance products that

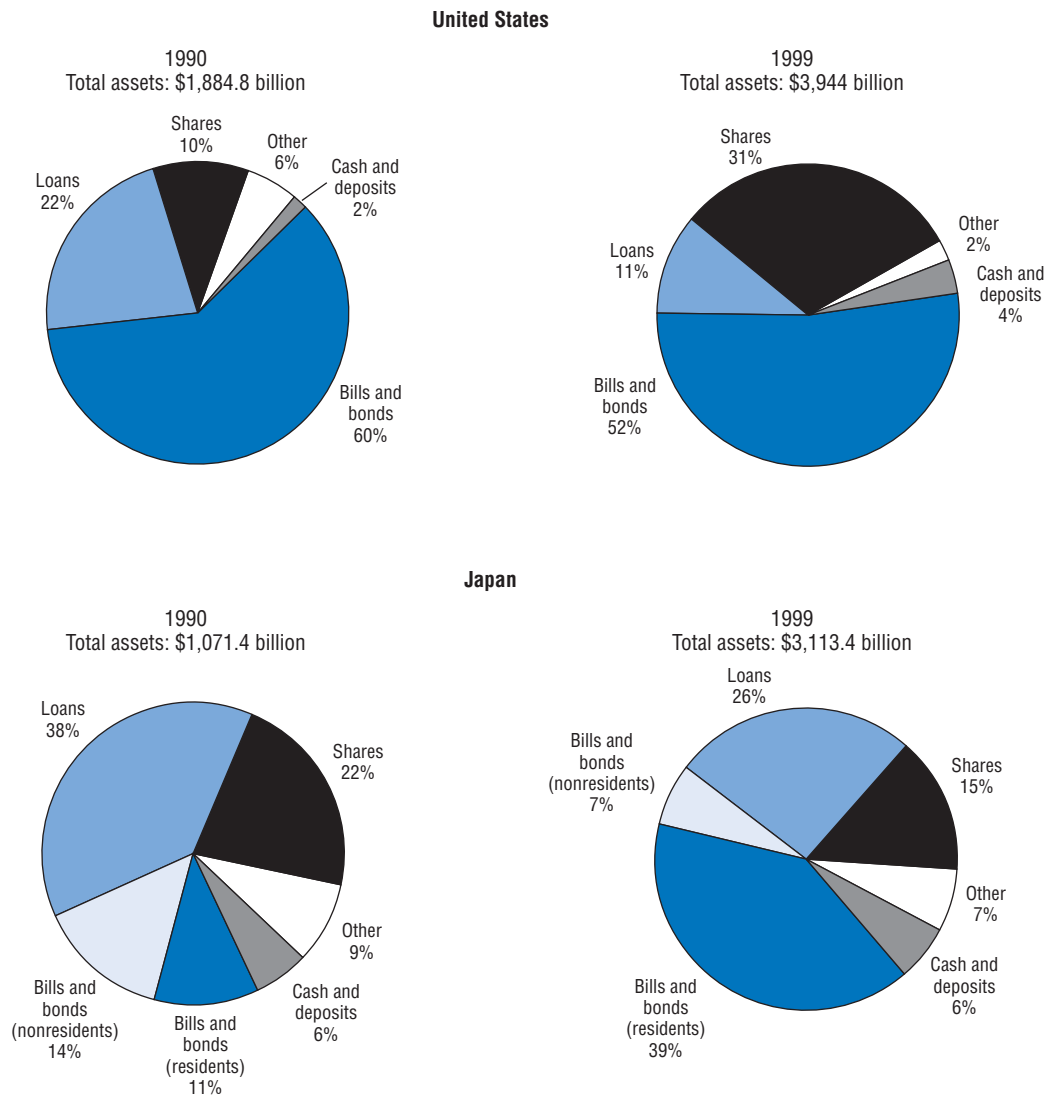
Figure 3.5. United States: Corporate and Foreign Bonds
(As a percentage of total amounts outstanding; end of period)



Source: U.S. Flow of Funds.

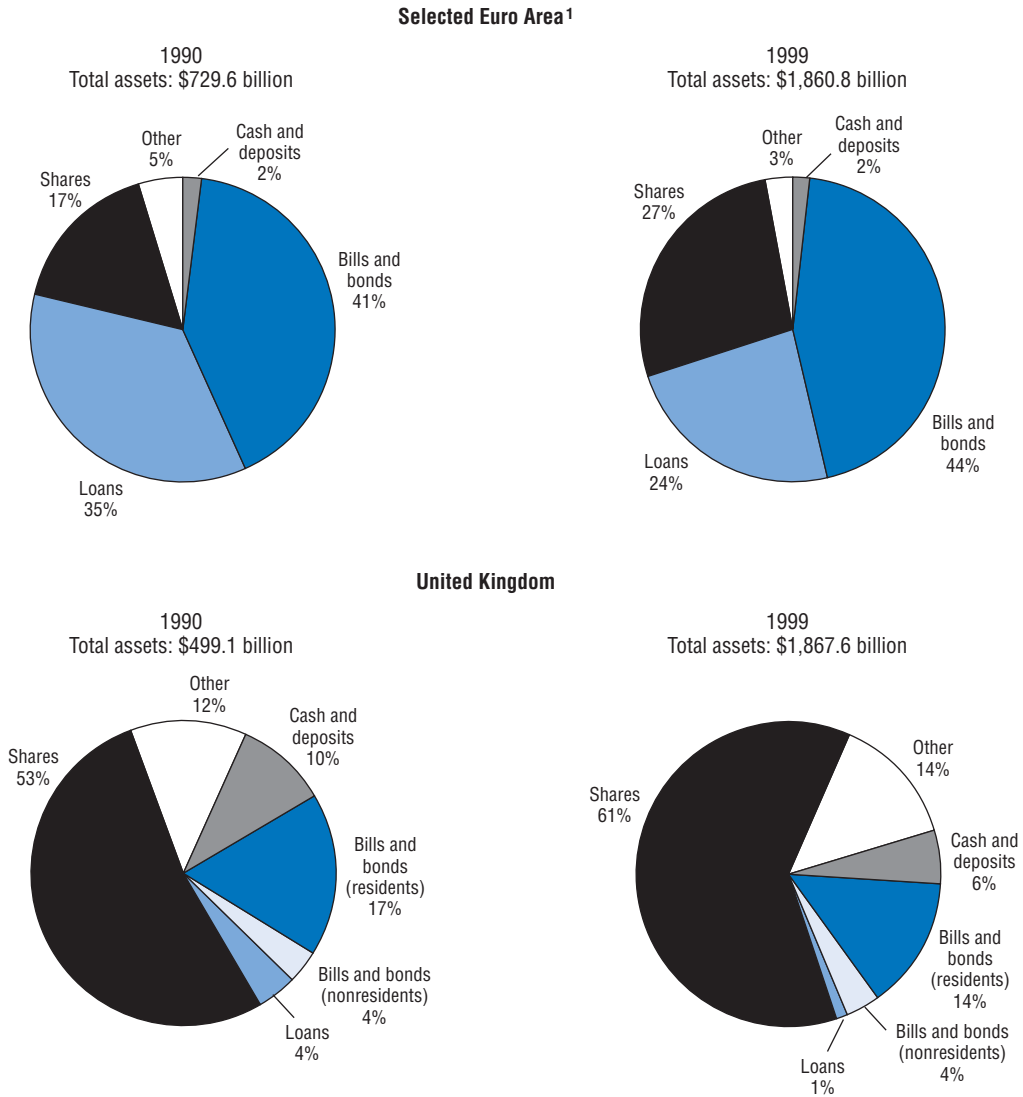
⁵Some of the shift in equity allocations may reflect stock price changes. In Japan, for example, the share of insurers' assets allocated to shares shrank from 22 to 15 percent.

Figure 3.6. Balance Sheet Assets of Insurance Companies: United States and Japan



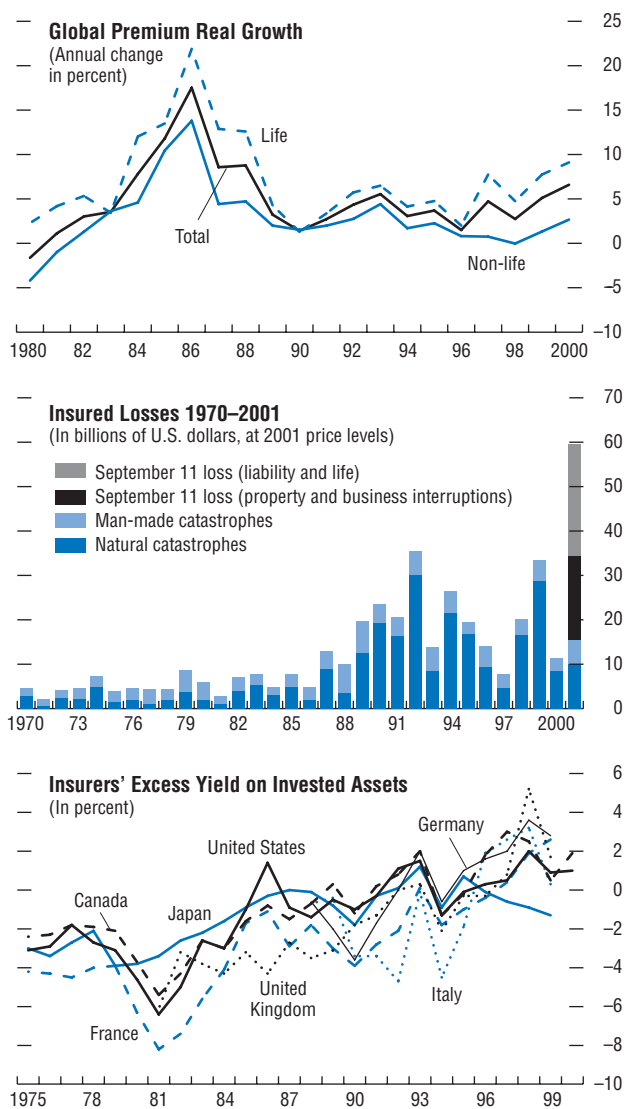
Source: Organization for Economic Cooperation and Development.

Figure 3.7. Balance Sheet Assets of Insurance Companies: Selected Euro Area Countries and United Kingdom



Source: Organization for Economic Cooperation and Development.
¹Selected euro area countries are France, Germany, and Italy.

Figure 3.8. Global Insurance Industry Results



Source: Swiss Re Economic Research and Consulting.

bridge the gap between traditional insurance and banking products.⁶ Examples include contingent capital, which gives an insurance company the option to replenish its capital if it is adversely affected by a natural catastrophe; captive insurance, which permits large conglomerates to insure themselves by pooling risks in a separate entity; and finite reinsurance, which is a form of self-insurance that permits a policy holder to spread an insurance loss over a predetermined period of time.

Insurance companies also sought to diversify their large investment portfolios and funding sources. For example, they became more important participants in credit derivatives markets, helping banks to hedge and diversify their credit exposures.⁷ Market participants have also characterized them as more active buyers of collateralized debt obligations (CDOs), private equity, funds of hedge funds, and reverse convertible securities. On the funding side, U.S. life insurance companies have issued funding arrangements (FAs) and guaranteed investment contracts (GICs), issuance of which grew rapidly to about \$40 to \$50 billion (JP Morgan, 2001). According to market participants, funds were generally invested in higher-yielding securities with similar maturities to the FA/GIC, generating a positive spread.

In 2001, the deterioration in credit and equity markets and huge claims associated with September 11 adversely affected insurers' profits and caused the failure of a few weaker, lower-tier institutions. Subsequently, an improved appreciation of the risks in newer activities, and a firming of insurance premiums amid an increase in

⁶Major reinsurers characterize rates of return on equity in the ART business as in the range of 20 to 25 percent, well above typical rates for traditional reinsurance business.

⁷See International Monetary Fund (2002), Chapter III. It has frequently been suggested that differences in the regulatory treatment of financial risks between banks and insurers may have created opportunities for regulatory arbitrage, but the Joint Forum cautions that "comparisons of individual elements of the different capital frameworks are potentially inappropriate and misleading" (Joint Forum 2001a, p. 5).

Table 3.2. Profitability Decomposition of Major Non-Life Markets
(In percent of net premiums)

	United States 1996–2000	Canada 1996–2000	United Kingdom 1996–99	Germany 1995–99	France 1995–99	Italy 1995–99	Japan 1995–99
Loss ratio	77.5	73.4	75.4	70.5	84.5	85.7	56.7
Expense ratio	27.4	32.0	32.5	25.3	22.5	27.1	35.7
Underwriting result ¹	-6.5	-5.7	-7.9	1.5	-8.3	-14.1	3.3
Investment yield ²	7.0	8.3	9.0	7.2	5.8	7.8	2.9
Net investment result	18.8	16.5	24.6	15.7	15.4	15.8	12.4
Other expenses/earnings	-0.1	0.9	-2.7	-6.6	-1.5	1.9	-11.8
Profit margin (pre-tax)	12.2	11.7	14.0	10.5	5.7	3.1	3.9
Tax rate ²	21.2	29.4	24.0	60.3	41.6	87.6	69.9 ³
Profit margin (after-tax)	9.6	7.9	10.7	4.1	3.4	0.8	1.0
Solvency	106.1	84.9	102.7	145.4 ⁴	111.5
ROE ²	9.1	9.4	10.1	2.9 ⁴	3.2

Source: Swiss Re, *sigma* No. 5/2001.

Note: Loss, expense, policyholder dividend and combined ratios for the United States, Canada, and the United Kingdom are net of reinsurance, whereas for Germany, France, Italy, and Japan they are for direct business (prior to cessions to reinsurers).

¹Includes policyholder dividend.

²Level, rather than in percentages of net premiums.

³Excludes 1999 because in 1999 taxes were paid despite pre-tax losses, resulting in a calculated negative 631 percent tax rate for 1999.

⁴For 1998 and 1999.

demand for insurance, led a number of insurance companies to re-evaluate their capital markets activities. In addition, market participants suggest that a number of less-active firms withdrew from activities such as ART and credit derivatives. As a consequence, these newer activities are seen as concentrated among a few, large players. Over time, higher premiums may heighten competition in the insurance business, putting downward pressure on premiums and leading to a renewed interest in newer activities.

Financial Efficiency and Stability Questions Raised by Insurers' Financial Activities

As noted above, much less is known about the environment in which insurance and reinsurance companies operate, and about important aspects of the regulatory framework. The remainder of this chapter examines five forward-looking financial stability issues with the objective of understanding the challenges that lie ahead for the insurance and reinsurance industries and more generally for the international fi-

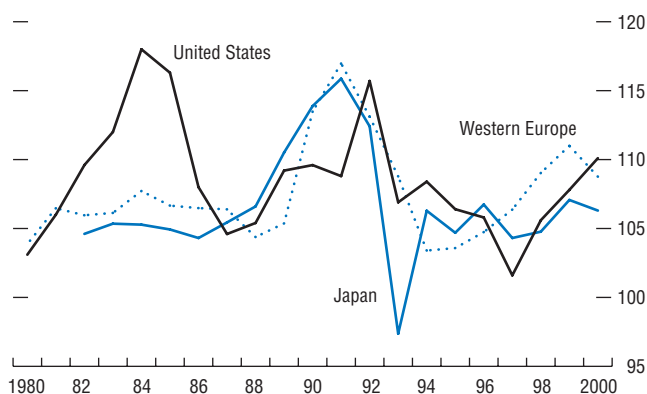
ancial community: the balance of official oversight and market discipline; information about financial markets activities; the legal frameworks for insurance and financial markets; leverage in individual firms and the overall industry; and systemic implications, if any, of insurance- and reinsurance-company instability.

Official Oversight and Market Discipline: Is the Balance Still Right?

As with commercial and investment banking, the soundness of insurance and reinsurance companies and the financial stability of these industries rely on both official oversight and private market discipline. The regulatory and supervisory framework for insurance is primarily oriented toward policyholder protection, by ensuring that reserves and capital are adequate, and investments are relatively safe and liquid, so that insurers can pay claims and other cash flows to policyholders on a timely basis. Insurers usually face restrictions on the concentration of balance-sheet investments in asset classes such as fixed income, equity, and real estate.⁸

⁸See EU Directives 92/49/EEC and 92/96/EEC, Articles 21–22.

Figure 3.9. Non-Life Insurance: Combined Ratios in the Industrial Countries
(In percent)



Source: Swiss Re Economic Research and Consulting.

Regulation of off-balance-sheet instruments ranges from broad guidelines to outright prohibition of derivatives transactions that do not directly hedge risks associated with insurance business.⁹

Reflecting its policyholder protection orientation and the fact that insurers are not deposit-taking institutions, official oversight of the insurance industry in many jurisdictions is less focused on financial market risks compared with the official oversight of commercial banks. For example, EU capital requirements exclusively reflect the volume of insurance business. In Australia, Canada, Japan, and the United States the regimes include capital charges for risks on the asset side of the balance sheet, but questions nonetheless remain about whether the underlying risks are adequately measured and fully reflected in capital.¹⁰ The major Australian insurer HIH filed for liquidation in March 2001, but its administrator reported that it was insolvent as early as June 2000 and possibly earlier.¹¹ In Japan, there are questions raised by the extent to which capital is in the form of deferred tax credits and one year's future income, and whether risk weights for equity and other exposures are adequate (see Fukao and JCER, 2002).

Reinsurance regulation is less uniform across countries than insurance regulation. In some countries—including Australia, Denmark, Finland, Japan, Portugal, the United Kingdom, and the United States—reinsurers face regulations similar to those applied to primary insurers; in others they are unsupervised. Many reinsurers are located in offshore centers where

⁹For example, relevant EU Directives provide that derivatives may be used to hedge risks or “facilitate efficient portfolio management,” whereas the German regulatory authority publishes a list of permitted derivatives instruments and restricts how they may be used.

¹⁰In 2001, the U.K. Financial Services Authority proposed the introduction of more flexible prudential standards for insurance companies, along the conceptual lines of the Basel Capital Accord’s three-pillar approach (Davies, 2001).

¹¹Improved insurance legislation will come into effect in Australia on July 1, 2002.

they face particularly light regulation and supervision, reflecting a view that the wholesale participants in the reinsurance market are more sophisticated and well-informed than the retail participants in the primary insurance market, and therefore are better able to assess the risks of their counterparties. Nevertheless, the limited regulation of reinsurers in some jurisdictions has raised concerns that reinsurance regulation may need strengthening, and that reinsurance arrangements may reduce the transparency of insurance company accounts and/or transfer less risk than is apparent.¹²

Supervisory frameworks for insurers and reinsurers have been under active discussion in the official community. The Joint Forum of banking, securities, and insurance supervisors has underscored key differences in risk management practices and regulatory capital requirements across the three sectors (Joint Forum, 2001a and b). The International Association of Insurance Supervisors (IAIS) “Principles on Capital Adequacy and Solvency” recommend that capital adequacy and solvency regimes should be sensitive to risks in investments and off-balance-sheet exposures. The IAIS expects to have principles for the supervision of reinsurance companies ready for members’ approval at the 2002 Annual Meeting. The 2002 EU “Solvency I” Directives improved solvency requirements, increased supervisors’ powers for early intervention, and allowed member states to put in place more stringent solvency requirements. An ongoing “Solvency II” project will consider issues including asset-liability matching, treatment of reinsurance cover, accounting and actuarial policies, and “double gearing” within financial conglomerates. In addition, observance of insurance core principles in IMF member countries are assessed under the IMF/World Bank Financial Sector

Assessment Program (FSAP) (see IMF and World Bank, 2001).

Because official oversight is oriented more toward policyholder protection than managing financial market risks, the soundness of insurers and reinsurers relies heavily on market discipline. For example, credit rating agencies inform policyholders and creditors about insurers’ financial strength and insurers strive for high ratings to maintain investors’ and policyholders’ confidence. In addition, risk managers at some banks partly rely on credit ratings in evaluating their counterparty risk exposures to insurers and the risks in financial products sold by insurers. Finally, counterparties increasingly use Standard and Poor’s assessments of risk-based capital that are based on its proprietary capital adequacy model.

Reflecting these considerations, market participants—and some officials—see the credit rating agencies as the virtual de facto regulators for insurers and reinsurers.¹³ Ratings agencies are uncomfortable with this perception and role. Seasoned analysts see insurance companies as opaque and complex, and find it difficult to fully evaluate insurers’ financial market activities and assess whether the risks are well managed. Similarly, some counterparty institutions of insurers and reinsurers question whether ratings fully reflect the potential counterparty risks. These institutions have further developed their internal credit analysis of their exposures to insurers and reinsurers, and tightened counterparty risk management vis-à-vis insurers, including by taking more collateral.

Are Disclosure and Transparency Adequate?

Less information seems to be available—to officials and private financial stakeholders—on the

¹²IAIS (2000), p. 4; and European Commission (2002a). IAIS (2002) discusses supervisory standards for evaluation of reinsurance cover. The Chairman of the U.K. Financial Services Authority recently remarked that a collapsed U.K. insurance company had “financial reinsurance treaties, of doubtful value, with unregulated reinsurers” (Davies, 2002).

¹³For example, IAIS (2000, p. 51) refers to rating agencies as “private market supervisors.” IAIS (2002, p. 3) notes that “reinsurers in some jurisdictions are directly supervised; other jurisdictions rely on rating agencies in assessing the security of a reinsurer.” European Commission (2002a, Chapter 9) discusses the rating agencies’ role in the market disciplining mechanism for insurance companies.

market activities of insurance companies compared with the activities of commercial and investment banks, particularly in four areas.

First, there are limited official data to assess whether capital adequately supports insurers' financial risks. Regulatory reports typically contain limited information on risks in the asset side of the balance sheet and on off-balance-sheet activities in the derivatives markets. In addition, features of accounting standards, such as limited application of mark-to-market or fair-value accounting to liabilities and the opacity of often subjective actuarial assumptions underlying valuations (including of liabilities), may reduce the usefulness of reported data.

Second, relatively little is known about whether insurance companies' management of market and credit risks has kept pace with their growing involvement in the markets. Although some major insurers have sophisticated financial modeling systems, market participants, credit rating agencies, and officials have raised questions about the effectiveness of some insurers' and reinsurers' internal risk management and controls for managing their asset-market activities as well as the market risks (mostly interest-rate risk) embedded in their liabilities.¹⁴ For example, life insurers have relied on careful analysis of mortality probabilities, based on detailed and lengthy panel data, in pricing insurance premiums. Because mortality risk is relatively stable over time, profit and loss flows on portfolios of life insurance contracts have been fairly predictable. Market participants suggest that some insurers have tried to adapt the actuarial approach to managing the risks in their financial activities. This strategy is seen as having drawbacks, particularly for credit investments where data are lacking and where default probabilities can change sharply and unpredictably

with economic and financial developments. These insurers have reportedly since bolstered their credit risk analysis to bring it closer to the standards attained by banks, but the actual extent of progress is unknown.¹⁵

Third, regulatory and shareholder reports do not consistently disclose the size of or amount at risk in off-balance-sheet positions, or the extent to which derivatives are used for hedging versus yield enhancement. The only aggregate information on insurers' involvement in over-the-counter (OTC) derivatives appears to be the survey figures compiled by the British Bankers Association on the credit derivatives market.

Fourth, the migration of financial risks between insurance companies and other financial institutions makes it more challenging to track the distribution of risks in financial systems.¹⁶ This raises questions about the extent of their participation in segments such as CDOs and asset-backed commercial paper. More generally, it would be appropriate for insurers to disclose information by risk type across all products. There are also questions about the extent to which financial institutions have used financial insurance contracts, particularly in place of derivatives contracts, to hedge financial risks.

How Well Understood Are the Legal Risks in Financial Insurance Contracts?

Financial insurance contracts between insurance companies and the internationally active commercial and investment banks have given rise to some high-profile legal disputes. For example, in the "Hollywood Funding" transactions, structured notes issued to finance a number of films to be made by Flashpoint Ltd. included credit enhancements in the form of insurance policies written by Lexington Insurance, a sub-

¹⁴The IAIS recently noted that "it is questionable whether insurance undertakings—and the insurance supervisors—still have adequate insight into the professionalism and appropriateness of the reinsurance companies, and in the risk exposure policy of globally active reinsurance companies" (IAIS, 2000, p. 4).

¹⁵See FSA (2002, p. 31). European Commission (2002b, p. 53) suggests that "asset risk...is often more significant in the risk profile than many insurers believe."

¹⁶International Monetary Fund (2002), Chapter III, suggested that the activities of nontraditional investors in credit risk transfer markets might distort prices in credit markets.

sidiary of American International Group. Bondholders evidently understood the credit enhancements to be in the form of credit guarantees, which require the insurer to pay the bondholders upon default. Lexington has argued that the contracts allowed it to refuse to pay if a specified number of films were not produced, and also allowed it to dispute or investigate claims prior to paying. In the event, Flashpoint defaulted before the specified number of films was made, and Lexington asserted a right to investigate the claim and delay payment. The matter is still under dispute.

In another high-profile case, JP Morgan and Enron were counterparties in forward contracts involving physical delivery of natural gas and oil to JP Morgan involving a special purpose vehicle, Mahonia. Through this vehicle, JP Morgan obtained surety bonds from insurance companies to mitigate the risk that Enron would fail to deliver.¹⁷ When Enron filed for bankruptcy protection, JP Morgan sought payment of some \$1 billion on these bonds from the insurers. The insurers refused to pay on the grounds that the counterparties never intended to settle the forward contracts with physical delivery, and claimed that the contracts were a front to obtain the surety bonds as collateral against what JP Morgan and Enron intended as loans from JP Morgan to Enron.¹⁸ A trial to determine whether the insurance consortium must pay has been set for December 2, 2002.

These two disputes illustrate the key differences in the legal and operational frameworks underlying insurance and financial contracts. For example, under U.K. law, insurers can delay payment by invoking a “material disclosure” provision to claim that their (non-life) financial insurance counterparty withheld material information about the underlying risk. By contrast, no such provision applies to OTC derivatives docu-

mented under International Swaps and Derivatives Association (ISDA) contracts. In addition, ISDA contracts require immediate payment, whereas insurance contracts may pay off over a period of years, particularly if insurers exercise their right to dispute the claim.

Reflecting these disputes, some of the major global banks no longer use insurance instruments to manage financial risks and instead use ISDA derivatives contracts, particularly when dealing with insurers. Others have become highly selective in choosing insurance transactions and counterparties that have a track record of timely payment. In addition, some London market participants now craft contracts to limit the use of “material disclosure” provisions. One major rating agency now examines “willingness to pay” in rating insurance policies that are used to provide credit enhancements and/or financial guarantees. Notwithstanding this progress, the understanding and management of these risks may need to evolve further in the period ahead.

Leverage: Does the Consolidated Insurance and Reinsurance Sector Need More Capital?

At first glance, balance sheet information suggests that insurance companies are typically overcapitalized to a much larger extent than commercial banks. Major insurers’ capital ratios typically exceed the regulatory minimum by two to four times, compared with approximately one to two times for banks.¹⁹ A closer look suggests that insurers hold excess capital in part to cover financial risks that are not covered in their regulatory requirements.²⁰ As noted above, capital requirements in some countries primarily reflect insurance risks—the liability side of the balance sheet—rather than investment risks on the asset side. Rating agencies and counterparties there-

¹⁷A surety bond is a contract issued by the surety guaranteeing that he will perform certain acts promised by another or pay a stipulated sum, up to a limit, in lieu of performance should the principal fail to perform. See IMF (2002).

¹⁸“Enron Fallout: Why Insurers Fail Banks,” (2002).

¹⁹Joint Forum (2001a), p. 53.

²⁰Insurance regulations are typically entity-based and do not mandate capital requirements for the consolidated group.

fore look for capital ratios that are well above minimum standards. They see insurers as becoming more sensitive to risk-based capital allocation and moving to upgrade their internal capital management systems.

Despite this progress, questions have been raised about whether some Japanese and European life insurance companies are adequately capitalized on a risk-adjusted basis relative to their financial and insurance risks.²¹ For example, insurance companies' capital may not fully reflect the substantial implicit options embedded in their balance sheets. On the asset side, some insurance companies hold securities such as convertible bonds that have embedded options. On the liability side, many life insurers have issued guaranteed return policies that amount to call options on interest rates sold to policyholders. Falling interest rates increase both the value of these options to policyholders and the implicit corresponding liability for insurers. For a variety of insurance companies, market returns on safe instruments have fallen below promised rates on existing policies originated earlier. In Japan, guaranteed returns average 3.6 percent, compared with investment returns of less than 2.3 percent; in Switzerland, insurers are mandated to offer guaranteed returns of 4 percent on compulsory private "second-pillar" pensions, compared with 10-year bond yields of about 3.6 percent.

There are also broader questions about whether capital in the global insurance/reinsurance industry is sufficient to support prudently the total amount of insurance risk in the global financial system, both presently and in the immediate future as demand for insurance products grows. The global insurance industry experienced significant shocks in 2001. First, total insured losses to the non-life industry from natural disasters are estimated to have

amounted to \$11.5 billion, up from \$7.5 billion in 2000. Second, equity market declines are estimated to have erased some \$20 billion from insurers' balance sheets. Third, Enron's collapse is estimated to result in \$4 billion to \$5 billion in losses on securities and insurance policies. Finally, September 11 is estimated to cost insurers \$50 billion to \$60 billion worldwide. Overall these estimated losses total some \$90 billion, only about \$20 billion to \$30 billion of which has been replaced by fresh inflows of capital (total capital in the insurance industry is estimated at around \$480 billion).²²

Would Insurance Company Failures Be Likely to Cause Systemic Financial Problems?

Extensive discussions with both market participants and officials suggest there is a body of opinion in the international financial community that insurance company insolvencies would be unlikely to have systemic effects on financial stability, for several reasons. First, in most cases the existing combination of market discipline and official oversight is seen as having detected and addressed insurers' financial fragility before it posed significant risks to financial market stability, notwithstanding the fact that some problems have been privately and socially costly. For example, the March 2001 failure of Australian insurer HIH does not seem to have caused significant or persistent volatility in either Australian or global capital markets. This is notwithstanding its international presence, including operations in Europe, Asia, North America, and Latin America; an estimated \$2.8 billion in losses for the firm; and the risk to some two million policyholders and a number of creditors, including globally active banks in Europe and the United States.

²¹See Fukao and JCER (2002) and Procter, Nordhaus, and Hocking (2002).

²²The figure for total capital is from Bureau van Dijk's Insurance Information and Statistics (ISIS) database. There are questions about whether the non-life industry was overcapitalized during the 1990s, but the large estimated losses relative to new inflows may have motivated the U.K. Financial Services Authority chairman's recent remark that "we believe it important for the long-term health of the [non-life insurance] industry, and its clients, that there is some strengthening of the industry's capital base" (Davies, 2002).

Second, liquidity and solvency problems involving insurance companies are generally seen as unlikely to be associated with a rapid liquidation of investment portfolios—including derivatives positions—and market turbulence. In a typical insolvency proceeding, life insurers stop taking on new policies, and their remaining long-term policies—some with maturities of decades—are sold off to other insurers and are allowed to run off over a period of years. Similarly, property and casualty insurers tend to pay off claims slowly, reducing the potential immediate pressure on liquidity. On occasions when a sharp increase in insurance claims potentially puts pressure on liquidity, litigation and/or investigation of claims may delay payment, and increasingly financial counterparts rely on collateral arrangements to manage counterparty and credit risk exposures.

Third, the newer financial market and insurance activities, although evidently rapidly growing, are viewed as relatively small in relation to both insurers' balance sheets and to overall capital markets. Although precise estimates of market size are not available, only about \$13 billion in ART is estimated to have been issued since 1996, and total capital devoted to ART amounts to only about \$20 billion. In addition, the share of CDOs held by insurers is unknown, but even if they held all of the \$500 billion current total, it would constitute a small fraction of the \$10 trillion in financial assets held by insurers in the major countries at the end of 1999. This suggests that a disruption in these newer activities or deterioration in these assets would be unlikely to affect the viability of a major insurer.

Some Concluding Thoughts

As the preceding discussion suggests, and despite the limited information, many observers—including many involved with the industry in some meaningful ways—have reached a comfort level with the judgment that the international

systemic risks associated with the financial market activities of insurance companies are relatively limited compared to that of the major internationally active banks and commercial banks. Nevertheless, there remain uncertainties about whether insurers hold adequate capital against financial risks, whether their management of market risk has kept pace with their expanding involvement in the market, the size and extent of their off-balance-sheet activities, and the potential migration of financial risks from banking to insurance sectors. In this light, it might be worthwhile asking whether some combination of limited information and regulation and high leverage could make insurers and reinsurers more vulnerable to rapid and turbulent collapses.

An insurance or reinsurance company collapse could affect financial stability through at least two channels. First, it could affect the financial conditions of counterparty commercial banks, investment banks, and other financial institutions through direct credit exposures such as loans and credit lines. Financial stress at a large global insurance or reinsurance company could thereby adversely affect a major financial institution that plays a key role in the major payment and securities settlement systems. It could also adversely affect bank balance sheets if the affected firm were part of a bancassurance conglomerate.²³ Banks that belong to bancassurance conglomerates may be more vulnerable to market risks than solo banks, because of the more stringent regulatory restrictions that apply to banks' market exposures, and may also be exposed to reputational risk if their insurance arm experiences financial distress. At the same time, few groups exist that include both a large insurance company and a large complex banking operation. Second, the failure of a large reinsurer could adversely affect OTC derivatives counterparties and bank counterparties in credit-risk transfer transactions such as credit derivatives.

²³See International Monetary Fund and World Bank (2001), page 5.

Other questions can be raised about the financial stability implications of financial problems of reinsurers. Major insurance companies actively hedge insurance risks with reinsurance companies and thereby have extensive counterparty relationships with reinsurers. In effect, the reinsurance companies are part of the risk management framework and an important line of defense against insurance company illiquidity and insolvency, because they help to pool the insurance risk. Over the years, counterparty exposures may have become more concentrated amid consolidation in the global reinsurance industry. This relationship poses risks: could a systemic insurance event—possibly the confluence of several major catastrophes to which a critical mass of reinsurers are exposed—create the strong potential for financial distress involving a number of reinsurers simultaneously?

If several major reinsurers simultaneously experienced financial stress, this could pose the risk for a large number of major primary insurers that their reinsurance hedges could fail to perform as expected, and leave many primary insurers with unhedged financial and insurance exposures. It is difficult to know how insurers would rebalance their activities and exposures to manage the sudden change in their risk profiles but adjustments could include cutbacks in the provision of insurance, withdrawals from capital markets, and attempts to unwind OTC derivatives hedges and liquidate part of their portfolios in order to return their financial and insurance risk profiles to more desirable positions.

In order to assess these risks and have a more credible understanding of these potential scenarios, the international community would need better information about the financial activities of insurers and reinsurers. Information would be particularly needed on the size, extent, and nature of reinsurance cover, and the potential for a critical mass of major reinsurers to simultaneously experience financial difficulties. In addition, it may be desirable to assess further whether the limited regulation of insurers' and reinsurers' financial activities creates an

unlevel "playing field" vis-à-vis banks (Joint Forum, 2001a).

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