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4 The Evolving Role of Banks in International Capital Flows

1. Bankim Chadha and David Folkerts-Landau

4.1.1 Introduction

The role of commercial banks in intermediating cross-border financing has been fundamentally transformed during the past twenty-five years. The traditional international financing role of these institutions as the dominant providers of long-term on-balance-sheet syndicated credits and trade financing has during the past ten years shifted toward one in which they are the dominant providers of short- to medium-term structured finance. Such "tailor-made" financing is designed to meet a variety of specific cross-border sovereign and corporate financing needs, including project and trade finance, bridge finance, and liquidity and risk management facilities. Banks' international financing activities have been supported by the export into local currency markets of their expertise in capital markets, trading, and risk management. These changes in the type of cross-border financing have coincided with far-reaching changes in the way international banks organize themselves and in their menu of products and activities. In particular, a more liberal regulatory environment has made it possible to exploit obvious complementarities among the areas of banking, security markets, and risk management, which has led to various types of cross-border financing activities—balance sheet lending, capital market fi-

The views expressed in this paper are the authors' own and do not necessarily reflect those of the International Monetary Fund. The authors thank Anne Jansen and Ken Wood for excellent research assistance.

nancing, off-balance-sheet risk management, and liquidity standby facilities—being combined within globally integrated financial intermediaries. Hence, the pure commercial bank of the 1970s has largely disappeared from international markets.

Section 4.1.2 of this paper reviews the changes in the role of banks in international financial flows. Section 4.1.3 discusses forces that are driving the changes in cross-border banking. Section 4.1.4 reviews the role of banks in the growth of global derivative markets. It also discusses the role of banks in providing credit to leveraged players such as hedge funds, and their role in currency crises. Section 4.1.5 discusses the challenges for policy created by the transformation of cross-border finance and the emergence of the universal global banking firm. Section 4.1.6 concludes.

4.1.2 The Changing Role of Banks in Cross-Border Lending

The flow of OPEC current account surpluses into deposit liabilities in the 1970s and early 1980s created the means for banks to play a lead role in intermediating international financial flows, leaving the direct capital markets relatively unused by cross-border borrowers. A number of institutional and financial market features gave banks a competitive edge, relative to capital markets, in the pricing of credit and further promoted a lead role for bank lending (see Folkerts-Landau 1985). These included, first, a growing perception during the recycling of the OPEC surpluses that financial authorities in the mature markets were increasingly ready to protect the deposit liabilities of large money center banks—the too-large-to-fail doctrine emerged. The cost of deposit liabilities for banks, therefore, became largely independent of banks' choice of assets, which provided incentive for banks to expand into new areas of lending, particularly as it was combined with low capital requirements. Second, in the syndicated loan market, international bank lenders were able to form credible coalitions through the use of restrictive loan covenants (cross-default and pari passu clauses) that could exert credit discipline by denying delinquent borrowers access to refinancing in the banking markets. This mechanism raised the cost of default to borrowers, encouraging renegotiation rather than outright default on bank debts in the event of borrower distress, leading to the view that "countries don't default." The higher expected salvage value of bank loans then allowed banks to charge lower margins on their loans than was acceptable in capital markets without enforcement mechanisms.

The late 1980s and 1990s witnessed a sea change in the composition of international financial flows. In 1980, medium- and long-term syndicated bank loans represented the bulk of international lending, accounting for over half—around 55 percent—of the total of global international primary market financing flows (syndicated loan plus security issuance) (fig. 4.1*A*). The share of syndicated bank loans then declined steeply, falling to around 20 percent of total financing in 1996, while the volume of international bond issuance grew to exceed that

of syndicated bank loans, accounting for about 30 percent in 1996.[1] Relative to the overall volume of flows, international equity placements have remained modest; they accounted for less than 5 percent of total financing in 1996.

Reliance on bank lending over the period has been greater for emerging market borrowers than for those from the mature markets, and the growth in importance of direct borrowing from international capital markets has been a more recent phenomenon. For emerging market borrowers, medium- and long-term syndicated bank lending continued to account for over half of their total borrowing through the 1980s, representing 55 percent of total international fund-raising in 1990 (fig. 4.1*C*). But capital market financing by emerging market entities soared during the 1990s, with bond issuance, for example, rising to 40 percent by 1993 and international placements of equity to 10 percent, while the share of syndicated bank lending to emerging market borrowers declined to about 30 percent. It is notable that international placements of equity by the emerging markets, reflecting large privatizations of public enterprises, have been a more substantial component of international fund-raising than that by entities from mature markets.

As the Mexican peso crisis and subsequent tequila effect caused a deterioration in the perceived credit quality of emerging markets in late 1994 and early 1995, the share of capital market borrowing contracted, and the share of syndicated bank lending rose again during 1994–95. Although the share of such bank lending fell back again in 1996, to around 40 percent, its share in total flows remains sizable and is double that for entities from mature markets. The increased recourse to the syndicated loan market during times of credit deterioration reflects, as it did in the previous decade, the greater ability of banks to resolve debt problems flexibly. Furthermore, it also reflects the fact that the deterioration in the banks' own credit ratings means that banks are more likely to find it profitable to provide on-balance-sheet financing to borrowers of lower credit quality. With the resolution of the crisis in emerging markets, direct borrowing by emerging markets on international capital markets once again exceeded syndicated bank lending in 1996.

Across the major emerging market regions, there have been substantial differences in the composition of flows reflecting the differing use of funds in the regions (figs. 4.1*D* and 4.1*E*). The predominant share of syndicated lending to emerging markets in recent years has been to Asian emerging markets, with the share of syndicated lending flows to emerging markets destined for Asia rising from around 30 percent in the early 1980s to an average of around 60 percent during 1993–96. Asian emerging markets have continued to rely on syndicated bank lending as the dominant source of external primary market financing. Since 1993, the share of syndicated bank lending has been relatively

1. Note that to conserve on words we often use "syndicated loans" to refer to medium- and long-term syndicated bank loans, although "short-term" facilities are also syndicated. While the former represent actual lending flows comparable to those on capital markets, as discussed below, the latter are predominantly credit facilities that may or may not be drawn down.

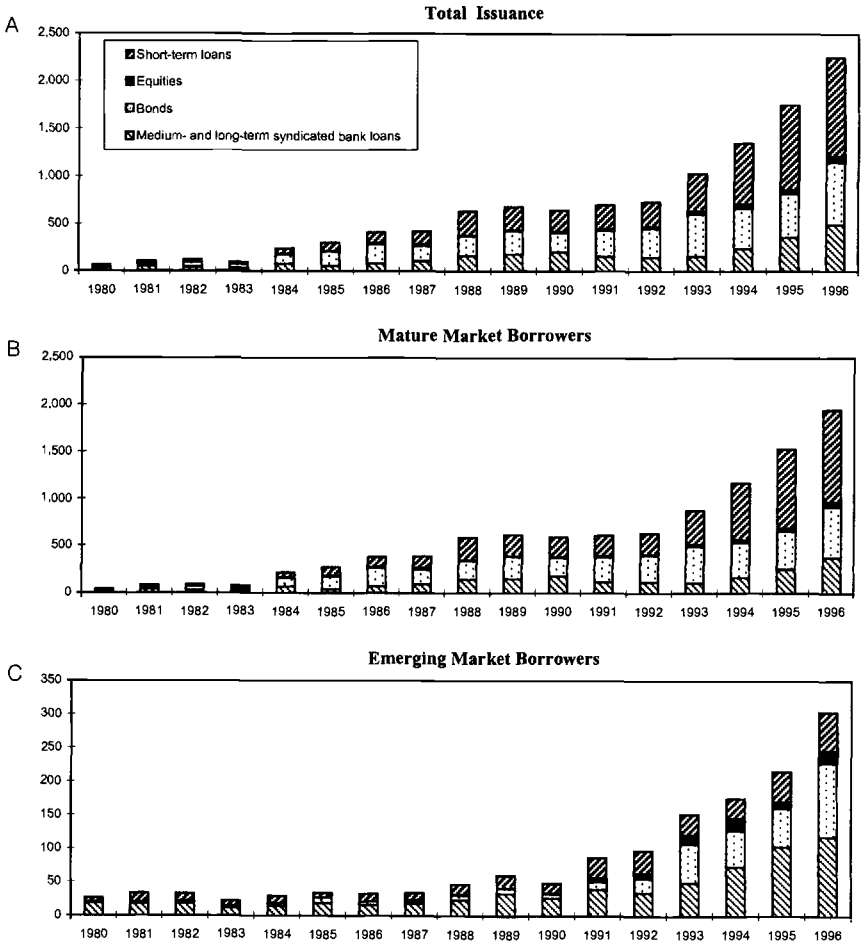
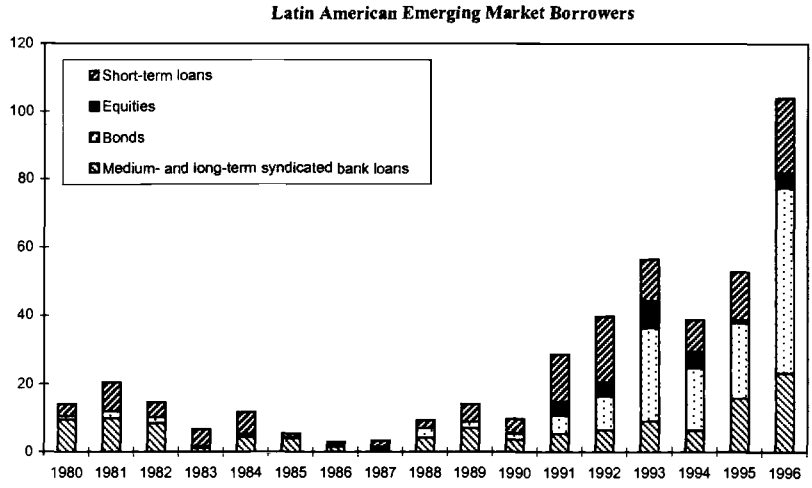


Fig. 4.1 International primary market activity, 1980–96 (billions of U.S. dollars)
Source: Capital Data, Ltd.

steady, rising modestly to account for about 50 percent of total financing in 1996. The relatively more modest securitization of external primary market financing flows to the Asian region, and the greater reliance of the region on syndicated bank lending, has reflected the comparative advantage of international banks vis-à-vis international bond markets to tailor the features of credit to meet the needs of infrastructure and project finance, which remains the main source of demand for external funds in the region.

Bank loans continue to be critical elements of structured and project finance packages, and project finance has been a significant component of international bank lending flows over the period, with the ratio of international project-

D



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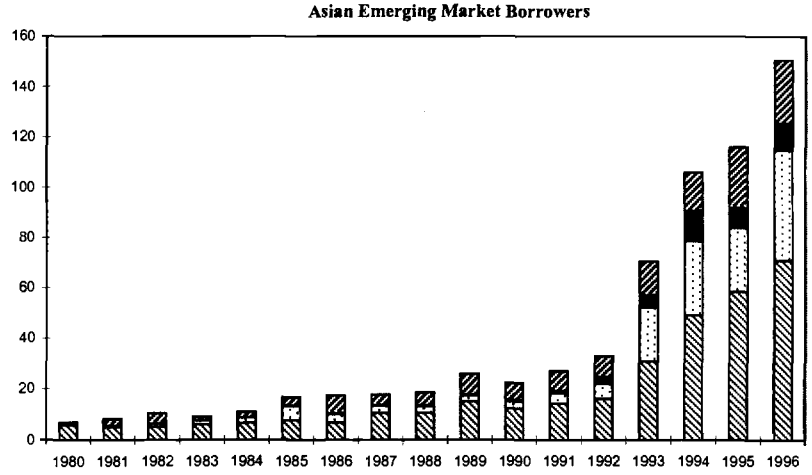

Fig. 4.1 (cont.)

finance-related lending to medium- and long-term syndicated bank lending for all borrowers averaging almost 10 percent between 1980 and 1996 (fig. 4.2). Spurred by deregulation, privatization, the greater need for infrastructure, and rapid economic growth in emerging markets, project finance has both represented a relatively larger ratio of syndicated bank lending to emerging markets—averaging 22 percent over the period—and, since 1992, accounted for a larger share of global project finance than in mature markets. The main driving force for these developments has come from Asia, where rapid economic growth put existing infrastructure under strain. During 1994–96 project financing to Asian emerging markets exceeded $20 billion a year.

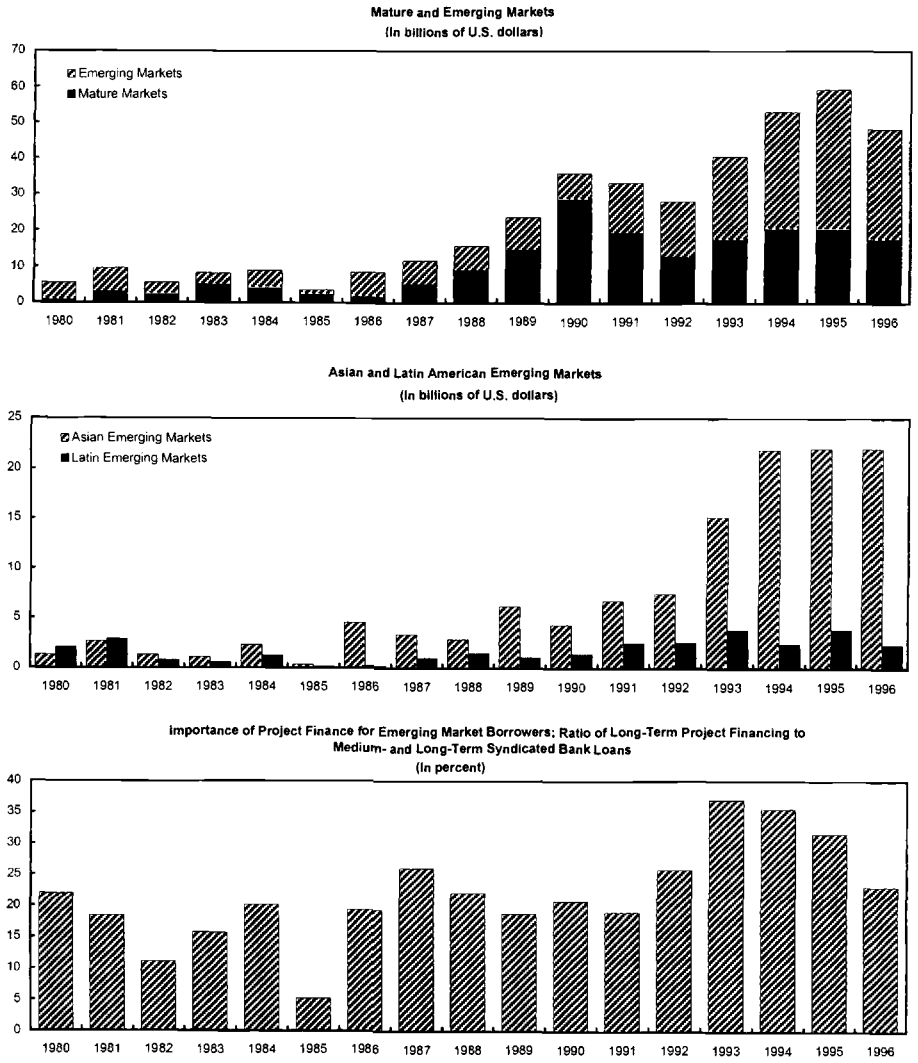

Fig. 4.2 Project financing, 1980–96
Source: Capital Data, Ltd.

A notable change in the composition of financing flows over the period has been the rapid growth in importance of loans classified as "short term." These loans are essentially liquidity-related credit consisting of trade credits, term loans with maturities of less than one year, and revolving credits. The share of short-term loans in total international financing has risen steadily from around 20 percent in 1980 to 45 percent in 1996. Since 1985 the volume of such short-term loans has in each year exceeded the volume of medium- and long-term

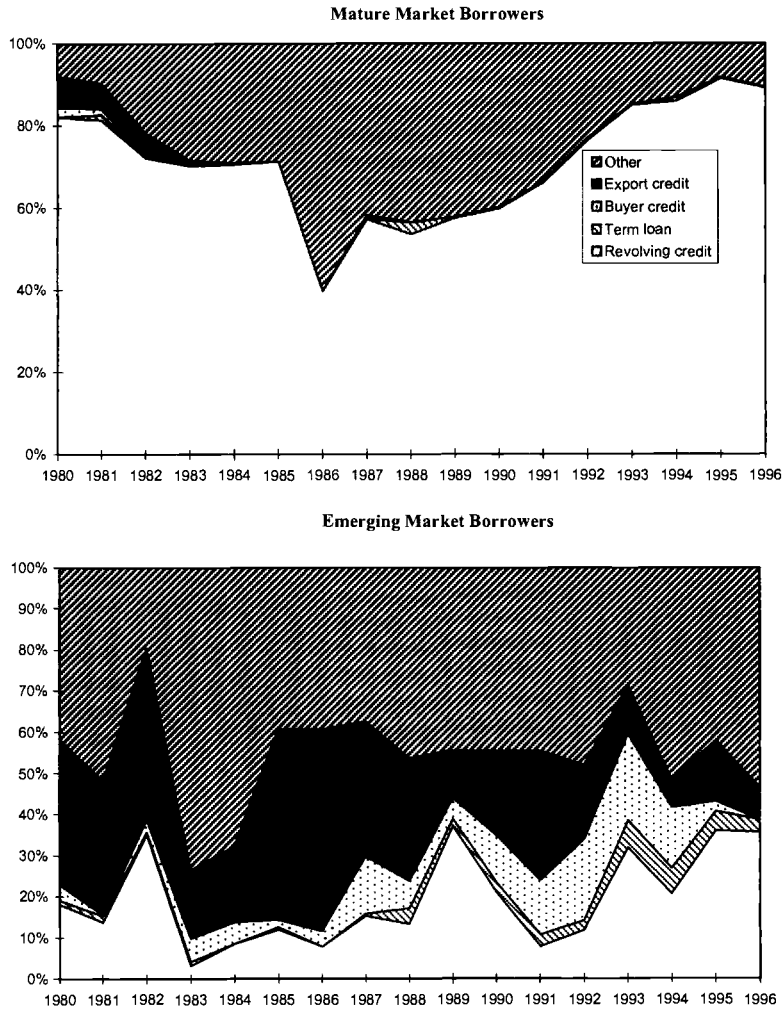

Fig. 4.3 Composition of short-term loans, 1980–96
Source: Capital Data, Ltd.

syndicated bank lending, and since 1993 it has been more than double the volume of medium- and long-term syndicated bank lending.

Figure 4.3 details the composition of "short-term" loans, dividing them into revolving credits, term loans with maturities of less than one year, buyer credits, export credits, and "other." The bulk of international short-term loans for entities from mature markets has been in the form of revolving credit facilities (90 percent), while short-maturity term loans and buyer and export credits have had very modest shares. For entities from emerging markets, revolving credits

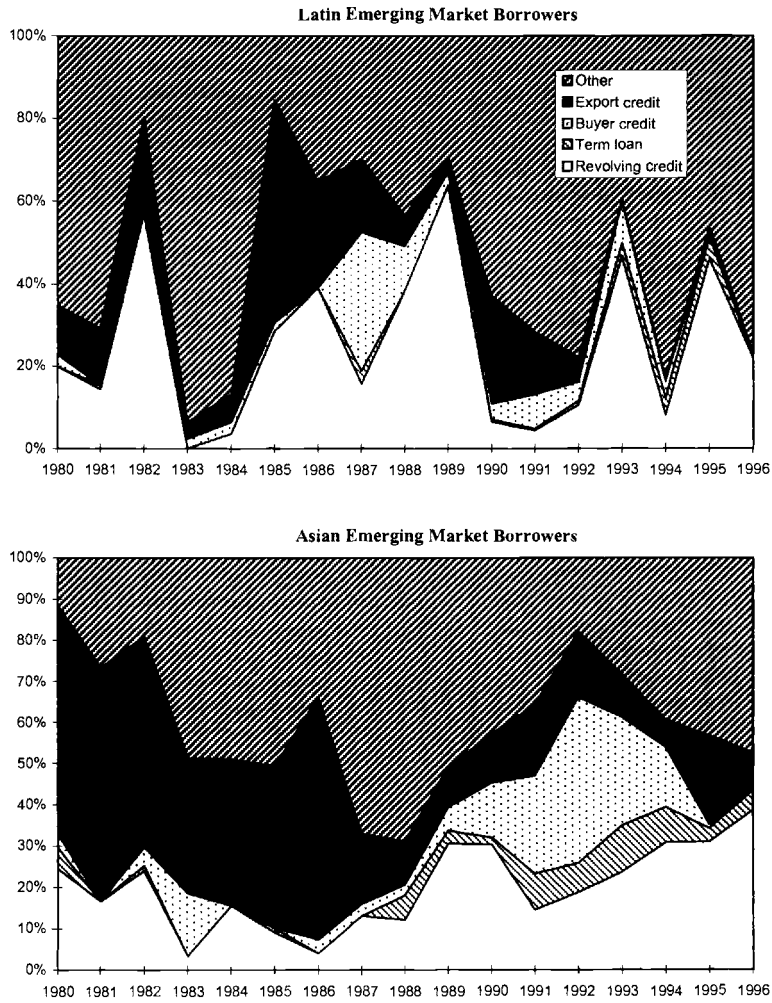

Fig. 4.3 Composition of short-term loans, 1980–96 (cont.)

have represented a much more modest share of around 35 percent, while trade credits—buyer and export credits—represented 10 percent of short-term loans during 1995–96.

The rapid growth of credit facilities, and in particular the increasing importance of revolving credits, illustrates the changing role of bank lending from the provision of medium- and long-term finance to the provision of contingency finance or liquidity insurance. This growth has been encouraged both by the securitization process itself, with contingency finance providing insurance for the borrower's debt securities, and by the regulatory advantage of

lower capital cost to banks for off-balance-sheet financing than for traditional on-balance-sheet lending. Contingency finance or lending facilities can take a number of forms. A revolving credit facility, for example, is a contract that obliges the bank to provide funds, on demand, up to a certain maximum amount and for an agreed period under an agreed interest formula. The bank earns an up-front commitment fee for standing ready to lend, whether or not such lending actually occurs.[2] Such lending represents a backup line of credit to the borrower that serves to assure investors in the borrower's debt securities that liquidity will be available to the borrower when the security matures, and in the event the borrower has difficulty rolling over these securities on capital markets. The insurance provided by the presence of such facilities, therefore, reduces the cost of funds to the borrower on capital markets, with part of this difference being earned by banks in the form of commitment fees for the provision of the insurance service.[3]

4.1.3 The Forces behind the Change in Cross-Border Bank Lending

A number of factors propelled the growth of direct capital market borrowing and the changing composition of bank lending toward shorter term and structured finance. These changes were largely driven by developments in financial markets in the major industrial countries.

An important reason for disintermediation from the international banking sector into international capital markets was the decline in the credit standing of banks in mature markets relative to that of corporate and sovereign borrowers. The erosion of the asset quality of banks due to the developing country debt crisis of the 1980s and country-specific business and credit quality cycles in the United States, Europe, and Japan acted to raise the cost of funds to banks to the point where sovereigns, public sector entities, and highly rated borrowers were increasingly able to obtain financing on capital markets more cheaply than could be provided by banks. The deterioration in the credit quality of banks and their present credit standing relative to (potential) borrowers is illustrated most starkly by the number of AAA ratings of banks. Banks have ceased to be the highest rated entities, and therefore, their ability to intermediate international capital flows across their balance sheets for the high end of the market has been increasingly limited relative to direct capital market lending. In the view of all the major credit rating agencies that rate banks—Moody's, Standard and Poor's (S&P's), and IBCA—the credit standing of (major global) banks has continued to deteriorate over the past ten years.[4]

2. For a listing and discussion of various lending facilities, see Lewis and Davis (1987) and Smith and Walter (1997). Lending facilities are also distinguished into "committed facilities" and "uncommitted facilities," which are not legally enforceable and have lower fees.

3. Rating agencies such as Moody's and Standard & Poor's, e.g., require issuers of commercial paper to have such facilities in place.

4. The following table is from IBCA (1997). This list does not include a number of German Landesbanks that have AAA ratings due to a constitutional maintenance guarantee.

	Number of AAA Banks	
	1989	1996
Moody's	24	3
S&P's	10	3
IBCA	9	5

Of the twenty-four banks rated AAA by Moody's in 1989, ten have fallen into the AA category and eleven into the A category, and by 1996 only three banks retained a AAA rating. With the recent downgrade of Union Bank of Switzerland by S&P's there is now exactly one major global bank—the Rabobank from the Netherlands—with a AAA rating from all three agencies. This compares with nine sovereigns that are universally rated AAA and fourteen corporates that earn such a rating.[5]

Regulatory changes provided additional incentive for securitizing international syndicated lending. The imposition of risk-based capital requirements on banks in the late 1980s forced more precise accounting of how capital was used, increasing pressure to charge higher spreads and fees in order to recover the increased cost of capital, thereby reducing the competitive price advantages of bank loans. Table 4.1 shows that for most countries the ratio of commercial bank capital and reserves to the size of total balance sheets increased over the period. For France, Germany, Japan, and Switzerland, the capital and reserve ratio peaked in 1994, the last year of the sample, rising between 0.9 percentage points (Switzerland) and 1.6 percentage points (Japan) relative to 1985. For commercial banks in the United States, the capital and reserve ratio peaked in 1993, having risen a full 2 percentage points above the ratio in 1985. The one exception to the general trend of increased capital ratios is the United Kingdom, where capital ratios increased in the mid-1980s, peaking in 1988, but declined afterward.[6]

As the relative credit quality of banks deteriorated, increasing their own cost of funds, and risk-based capital requirements increased the costs of lending, the composition of bank borrowers changed dramatically during 1980–96. Governments, public sector entities, and highly rated corporate issuers turned away from bank lending and began to borrow directly on international capital markets, where they could obtain funding at better rates than banks could offer. The share of borrowing on the syndicated bank lending market by sovereign

5. The universally AAA rated sovereigns are Austria, France, Germany, Japan, Luxembourg, Switzerland, the Netherlands, the United States, and the United Kingdom. The corporates identified with international long-term AAA ratings are Siemens, Hitachi, Toyota, Shell, Unilever, CIBA, Nestlé, Novartis, Marks and Spencer, Amoco, Exxon, General Electric, Johnson and Johnson, and Merck and Company. The count excludes separate subsidiary and joint venture ratings.

6. The behavior of the aggregate capital ratio in the United Kingdom may reflect differing coverage of banking sectors across countries—see the notes to table 4.1.

Table 4.1 **Composition of Bank Balance Sheets: Capital and Reserves, Securities, and Loans, 1985–94 (percent of year-end balance sheet total)**

Country	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Change over Period	Peak Relative to 1985[a]
						Capital and Reserves						
Canada	4.7	5.2	5.0	5.4	5.5	5.7	**6.0**	5.5	5.5	5.3	0.6	1.3
France	–	–	–	2.5	2.2	2.4	2.6	2.4	3.7	**3.8**	1.3	1.3
Germany	4.4	4.8	5.0	4.7	5.2	5.2	5.1	5.3	5.2	**5.5**	1.1	1.1
Japan	2.0	1.9	2.2	2.5	2.7	2.9	3.1	3.4	3.6	**3.6**	1.6	1.6
Switzerland	5.9	6.0	6.1	6.1	6.5	6.3	6.3	6.2	6.4	**6.8**	0.9	0.9
United Kingdom	4.5	5.2	5.4	**5.7**	5.0	4.8	4.6	3.8	3.8	4.1	−0.4	1.2
United States	5.1	5.3	4.7	5.3	5.1	5.4	5.8	6.8	**7.4**	7.1	2.0	2.3
						Securities						
Canada	10.2	10.9	9.4	10.4	10.2	10.2	13.2	15.6	17.9	**18.7**	8.5	8.5
France	–	–	–	7.6	7.7	10.4	15.9	16.5	19.9	**20.4**	12.8	12.8
Germany	14.0	14.1	13.0	11.8	12.3	12.3	12.4	13.0	**17.3**	17.2	3.1	3.3
Japan	10.5	10.8	10.9	10.7	11.0	11.0	10.8	11.8	11.9	**12.7**	2.2	2.2
Switzerland	13.0	13.0	12.1	9.7	10.4	11.3	11.8	13.0	17.3	**17.6**	4.6	4.6
United Kingdom	6.7	7.1	7.8	6.6	6.9	7.5	8.5	13.0	16.1	**17.5**	10.7	10.7
United States	12.2	13.8	14.4	14.1	14.6	15.3	18.2	20.8	**23.1**	19.6	7.5	10.9
						Loans						
Canada	73.4	71.9	74.9	75.9	77.0	77.7	75.5	73.2	71.1	69.3	−4.1	−8.3
France	–	–	–	45.1	46.5	47.0	**47.8**	45.9	44.0	44.7	−0.3	−3.1
Germany	53.6	54.2	54.6	56.7	56.8	57.2	**60.5**	58.4	55.4	53.8	0.2	−6.7
Japan	52.7	52.5	52.9	51.3	49.6	54.1	57.6	62.9	63.5	**63.7**	11.0	0.0
Switzerland	46.2	45.3	47.7	52.9	59.4	61.1	**63.4**	62.3	58.2	58.3	12.1	−5.1
United Kingdom	59.5	57.1	59.3	61.2	62.0	**62.1**	60.5	58.2	54.5	52.0	−7.5	−10.1
United States	65.1	64.2	63.8	64.7	65.3	**65.7**	63.3	61.4	60.6	60.3	−4.8	−5.4

Source: OECD (1996).

Note: Coverage, extent of consolidation of bank balance sheets, and timing of fiscal years, for which the data are reported rather than the calendar years noted above, differ across countries. For Canada and the United Kingdom, the data cover commercial banks. For France, Switzerland, the United States, Germany, and Japan, the data cover the large commercial banks. For details see source. Numbers in boldface are peaks.

[a]For loans, change from peak.

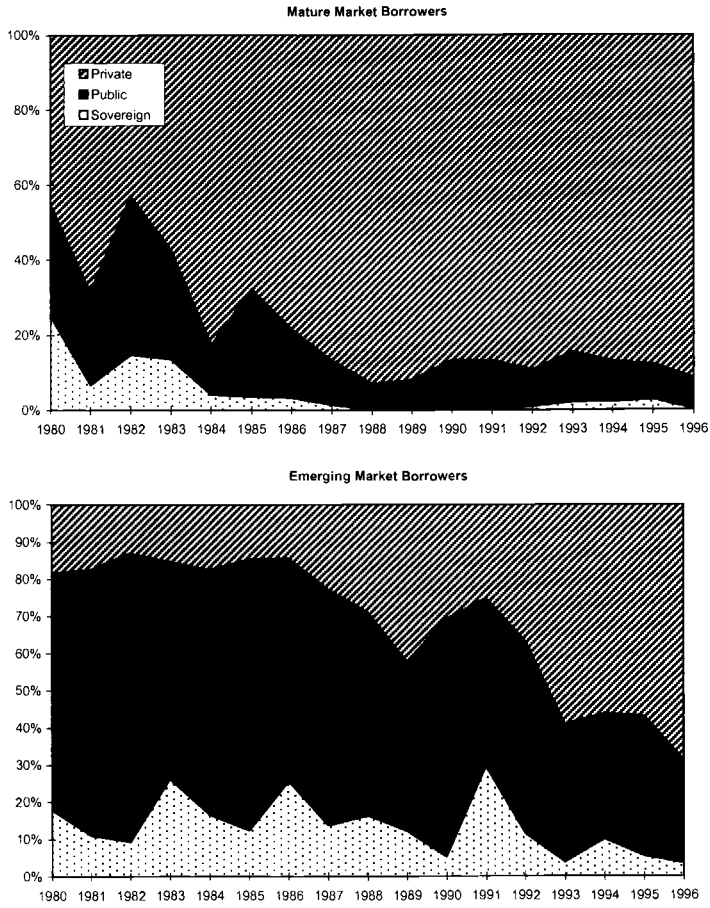

Fig. 4.4 Borrower mix of medium- and long-term syndicated bank loans, 1980–96
Source: Capital Data, Ltd.

entities from mature markets fell from around 25 percent in 1980 to below 3 percent in 1996 and has remained below this level since (fig. 4.4). The share of borrowing by private sector entities from mature markets, on the other hand, has risen from 45 percent in 1980 to 90 percent in 1996. The composition of emerging market entities borrowing on the international medium- and long-term syndicated loan market has evolved in a similar manner, though the decline in the shares of sovereign and public sector issuance occurred later—in the 1990s—and may not yet have run its course. The share of public sector entities also remains sizable at almost 30 percent in 1996, while private sector borrowing accounted for around 65 percent.

The decline in the relative credit quality of banks and the regulation-induced

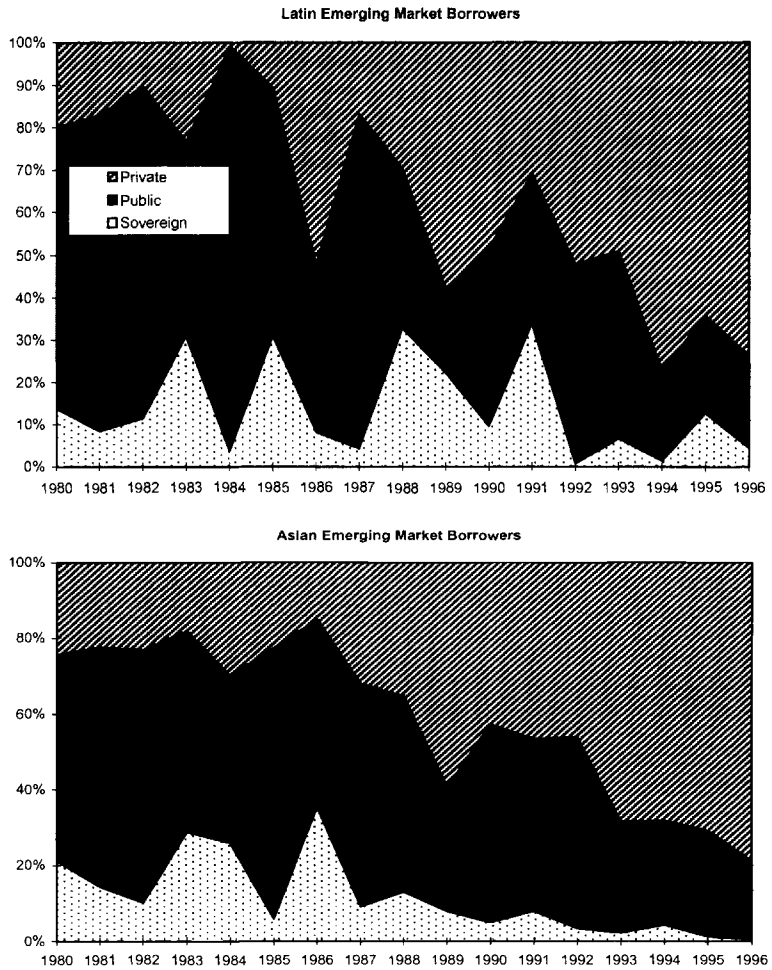

Fig. 4.4 (cont.)

increase in the cost of leveraging bank capital in lending, which prompted banks to shift the focus of their lending activities lower down the credit spectrum in search of higher yields, are evidenced by the behavior of spreads charged by banks. Average interest margins on international medium- and long-term syndicated bank lending, which averaged about 70 basis points during 1980–84, rose uninterruptedly during the latter half of the 1980s, almost doubling to around 130 basis points by 1989 (fig. 4.5). It is notable that the sustained increase in interest margins during 1984–89 was accompanied by relative stability in the average maturity of such loans. While average spreads

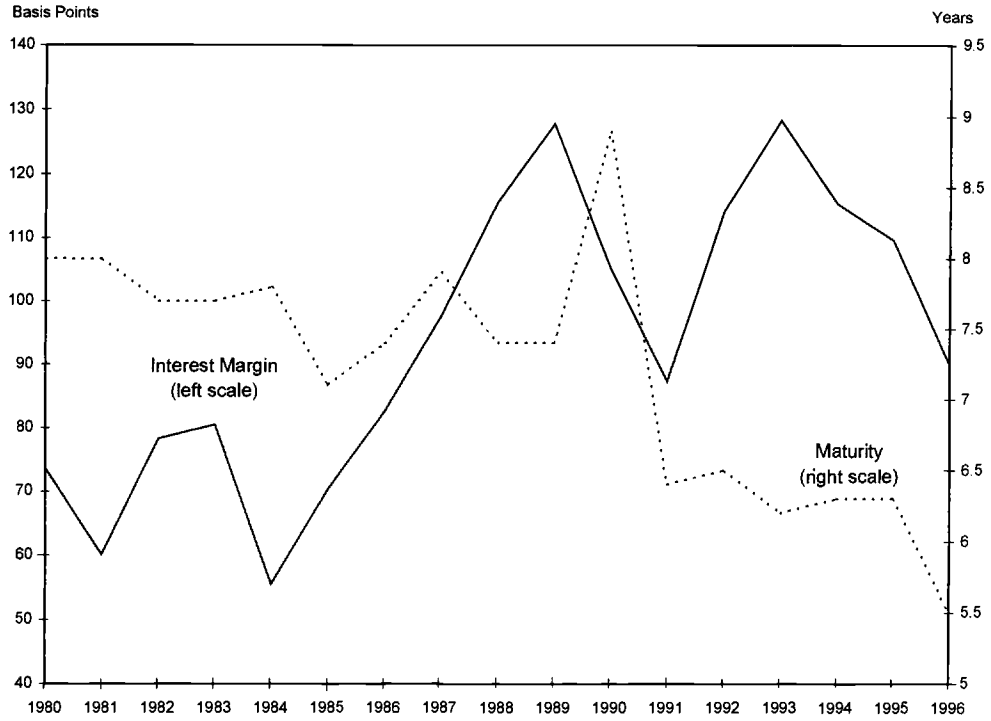

Fig. 4.5 All borrowers: terms of international medium- and long-term syndicated bank loans, 1980–96
Source: Capital Data, Ltd.

have fluctuated during the 1990s, reflecting a host of factors and in particular competitive pressures, they have remained at much higher levels than during the early 1980s.

Some of the pressures for securitization have been technical, spurred by efforts by the banks themselves to better manage their liquidity and risk exposures. The move toward capital market borrowing was also facilitated by improved disclosure standards for borrowers, advances in information technology that increased the public availability of information on borrowers, and an expansion of the universe of entities rated by international credit rating agencies, all of which reduced the value of superior or inside information in conventional bank lending contracts.

The changes in the composition of international financial flows coincided with structural changes in the financial industry. The severe competitive pressures on banks created by the liberalization of domestic markets—including the removal of restrictions on interest rates, the introduction of negotiated brokerage commissions, and shelf registration—the shift in individual investor preferences away from bank deposits, the cyclical deterioration in the quality

of bank balance sheets, and the increased cost of leveraging capital in bank lending as compared to participation in direct capital market lending activity, in secondary market trading, and in asset management services forced an unprecedented wave of mergers and acquisitions in the banking industry. The easing of restrictions on the lines of business and geographical location and operation of financial businesses encouraged consolidation and concentration across segments of the financial industry and across international borders. Spurred in the 1990s by the ongoing process of globalization, international portfolio diversification, and growing demand for risk management products, the universal global banking firm—combining traditional on-balance-sheet deposit taking and lending with fee-based security market, risk management, and asset management activities—has emerged as the dominant global financial intermediary.[7]

The decline in the relative importance of traditional bank lending activity is reflected in changes between 1985 and 1994 in the relative contributions of interest and noninterest income to total commercial bank income, and in the shares of bank balance sheets devoted to security holdings and loans. For commercial banks from Canada, France, Switzerland, the United Kingdom, and the United States, there is a clear secular downward drift in the contribution of net interest income to total gross income over the period (see table 4.2).[8] For Canadian and French banks the decline has been particularly sharp, with the ratio declining over the period by over 20 percentage points, while it has been significant for British and American banks, for whom the ratio has declined by a little less than 10 percent.

The evolution of the share of commercial bank balance sheets devoted to security holdings is relatively uniform across countries, with the shares for each country increasing over the sample period and peaking in the last two years (1993–94) for which data are available (table 4.1). The increase is more notable for Canada, France, the United Kingdom, and the United States, with the shares for these countries increasing by between 8 and 13 percentage points. The increase has been more modest for Switzerland (5 percentage points), Germany (3 percentage points), and Japan (2 percentage points). The share of bank balance sheets devoted to loans in each of the countries, with the exception of Japan, peaked in 1990–91 and has fallen since by between 3 percentage points (France) and 10 percentage points (United Kingdom; table 4.1). In Japan, the share of commercial bank balance sheets devoted to loans continued to increase over the period.

7. On the decline of traditional banking in the United States, see Edwards and Mishkin (1995); on the changing borders of banking, see Borio and Filosa (1994) and Bisignano (1997); on the evolution of the universal global banking firm, see Smith and Walter (1997); and on the leading role played by a limited set of "core" integrated global financial firms, see Group of Thirty (1997).

8. For the United States, Edwards and Mishkin (1995) showed that noninterest income from fees and trading as a proportion of the total income of American commercial banks rose from an average of 19 percent in 1960–80 to 35 percent in 1994.

Table 4.2 **Relative Contributions to Gross Income of Commercial Banks: Interest versus Noninterest Income, 1985–94 (percent of gross income)**

Country	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Change over Period	Change from Peak or Trough
						Net Interest Income						
Canada	**76.3**	75.3	71.7	72.6	70.8	69.1	69.9	69.0	67.8	55.0	−21.3	−21.3
France	–	–	–	**75.1**	68.6	66.8	66.8	70.6	50.5	55.1	−20.0	−20.0
Switzerland	51.8	50.3	48.7	**52.6**	49.7	49.1	48.8	49.9	49.6	45.4	−6.4	−7.2
United Kingdom	**65.5**	63.7	62.6	63.8	62.1	61.1	59.3	57.5	55.5	56.8	−8.7	−8.7
United States	**68.0**	64.0	62.4	62.7	60.0	59.1	58.3	58.3	56.3	59.6	−8.4	−8.4
Germany	68.9	**72.5**	69.9	68.6	66.4	65.1	71.3	67.6	65.4	70.5	1.7	−1.9
Japan	73.4	75.5	67.8	60.0	62.8	64.1	81.9	94.2	98.8	**100.6**	27.2	0.0
						Noninterest Income						
Canada	**23.7**	24.7	28.3	27.4	29.2	30.9	30.1	31.0	32.2	45.0	21.3	21.3
France	–	–	–	**24.9**	31.4	33.2	33.3	29.5	49.5	44.9	20.0	20.0
Switzerland	48.2	49.8	51.3	**47.4**	50.3	50.9	51.2	50.1	50.5	54.6	6.4	7.2
United Kingdom	**34.5**	36.3	37.4	36.2	37.9	38.9	40.7	42.5	44.5	43.2	8.7	8.7
United States	**32.0**	36.0	37.6	37.3	40.0	40.9	41.7	41.7	43.7	40.4	8.4	8.4
Germany	31.2	**27.5**	30.1	31.4	33.6	34.9	28.7	32.4	34.6	29.5	−1.7	2.0
Japan	26.6	24.5	32.2	40.1	37.2	35.9	18.1	5.8	1.2	**−0.6**	−27.2	0.0

Source: OECD (1996).

Note: Coverage, extent of consolidation of bank balance sheets, and timing of fiscal years, for which the data are reported rather than the calendar years noted above, differ across countries. For Canada and the United Kingdom, the data cover commercial banks. For France, Switzerland, the United States, Germany, and Japan, the data cover the large commercial banks. For details see source. Numbers in boldface are peaks for net interest income and troughs for noninterest income.

Out of these developments has emerged a set of highly competitive international banking firms, almost all headquartered in the G-5 countries, that are supported by an effective regulatory, supervisory, legal, and payments and settlement infrastructure and that have over the past five years gained a strong competitive advantage in international financial intermediation. The choice of cross-border financial instrument, ranging from syndicated bank loans to structured bank finance to long-term bond or equity finance, is now more likely to be made on the basis of technical financial and economic criteria relating to liquidity and risk management concerns.

Hence, while the organization and the activity mix of global bank intermediaries has changed significantly in response to changes in the financial environment, these institutions have remained key participants in intermediating international capital flows. Their strong presence has been supported by a number of factors. First, bank lending remains important as a source of cross-border structured finance—custom tailored to the needs of the international sovereign and corporate borrower. The flexibility of international bank lending in drawdown and repayment terms remains an important advantage in project and bridge finance, as well as trade finance. Similarly, such flexibility of financial terms remains important in short-term lending to finance merger, acquisition, and leveraged buyout transactions, as well as leverage finance for hedge funds and other high-leverage participants in international markets.

Second, while there has been a decline in the role of medium- and long-term syndicated bank lending in global financial flows, money center banks have increasingly exploited their comparative advantage as flexible suppliers of liquidity. The growth of foreign currency external liabilities has brought with it a growing demand for cross-border contingency financing—backup lines of credit, revolving credits, and standby credit facilities. Much like in the domestic markets in the United States, banks stand ready to lend when access to capital markets dries up temporarily or when the rolling over of short-term international obligations meets with resistance. This suggests a changing emphasis in the role of banks (as lenders) from providers of medium- and long-term finance to providers of contingency liquidity finance.

Third, the development of over-the-counter derivative markets—risk management finance—during the past ten years has been an important source of fee income for internationally active banks. Banks have been able to compete effectively with the organized futures exchanges by supplying hedging products that are tailored to clients' needs. Banks have become the main suppliers of derivatives—particularly swap contracts—used to modify the risk characteristics of international capital flows. Hence, even though banking entities have lost some of their advantages in extending on-balance-sheet commercial and industrial loans, they remain at the core of the financial industry, albeit embedded in larger financial service firms.

Fourth, while local restrictions continue to apply in some markets, on a global basis, the investment banking arms of the larger international universal

commercial banks have played an important role as underwriters of international security issues, again suggesting an undiminished if evolving direct role for commercial banks in the international financial intermediation process. The dominance of the global universal banking firms in international primary market finance is apparent from table 4.3.[9] The majority of firms in the table have significant market share in arranging international loans and in the underwriting of debt and equity securities, that is, in both banking and investment banking. Three firms—J. P. Morgan, Deutsche Morgan Grenfell, and Credit Suisse First Boston—rank in the top ten firms in terms of market share in each of the loan, bond, and equity subsectors. The table also indicates that the international primary market finance industry is heavily concentrated, with the top two firms accounting for almost a fifth of business, the top five for a third, the top ten for a half, and the top twenty-five firms for 70 percent of the industry. It is also dominated by twelve U.S. firms, which take all five of the top positions in terms of total market share, represent one-half of the top twenty-five firms, and account for almost half (47 percent) of the global market.

Fifth, banks have not only facilitated the process of securitization, they have also become increased proprietary investors in (both domestic and) international securities and foreign exchange. Also, as asset managers and advisers, either directly or through their subsidiaries, commercial banks play an important role in the international allocation of funds.

Sixth, international banks have become key participants in domestic local currency markets, not only in emerging markets but also in other industrial countries. This internationalization of local currency markets has provided an important vehicle for the transfer of financial expertise in the capital market area, in trading, and in market infrastructure (settlement and market making). Indeed, internationally active institutions, operating in a well-regulated and supervised home jurisdiction with strong legal and market infrastructure have a major comparative advantage in the intermediation business, and this advantage is allowing them to make significant inroads into the intermediation business outside the major industrial countries.

We have discussed various forces driving the change in the composition of international primary market financing flows away from syndicated bank lending toward direct capital market lending. We would emphasize, however, that there are many similarities between syndicated bank lending and debt securities. Syndicated bank lending can, in fact, be characterized as a hybrid between traditional bank lending—that is, relationship and privileged information bank lending—and debt securities. The syndicated bank lending market has many features in common with that for debt securities. Risk is shared between a num-

9. These tables can be, and are, often constructed in a variety of ways, such as full credit to lead manager, etc. The proportional credit method adopted here avoids double counting when there is more than one lead manager, e.g., and yields measures of industry size comparable to the primary market financing flows presented in fig. 4.1.

Table 4.3 **Global Wholesale Banking and Investment Banking Industry, 1996**

Bank	Country	Loans[a] Rank	Loans[a] Amount (million US$)	Bonds[b] Rank	Bonds[b] Amount (million US$)	Equity[b] Rank	Equity[b] Amount (million US$)	Total[c] (million US$)	Share (%)
1. Chase Manhattan Bank NA	United States	1	251,174	26	5,700			256,874	11.7
2. J. P. Morgan & Co.	United States	2	130,998	3	38,308	10	1,484	170,791	7.8
3. Citicorp	United States	3	126,618	22	6,820	73	12	133,450	6.1
4. Bank of America	United States	4	110,002	0	0	0	0	110,002	5.0
5. NationsBank	United States	5	80,322	0	0	0	0	80,322	3.6
6. Deutsche Morgan Grenfell	Germany	6	44,308	9	26,305	9	1,499	72,112	3.3
7. Credit Suisse First Boston	Switzerland	8	37,153	8	27,245	4	3,809	68,207	3.1
8. Union Bank of Switzerland	Switzerland	9	36,599	11	23,625	13	1,261	61,485	2.8
9. SBC Warburg	Switzerland	22	14,103	4	38,084	3	6,757	58,944	2.7
10. Merrill Lynch & Co.	United States	68	2,151	1	51,671	5	3,672	57,494	2.6
11. Lehman Brothers	United States	16	23,088	7	28,872	6	2,382	54,342	2.5
12. Goldman Sachs & Co.	United States	54	2,999	5	35,607	1	10,866	49,472	2.2
13. Morgan Stanley & Co. Inc.	United States	94	1,111	2	39,138	2	7,456	47,705	2.2
14. NatWest Markets	United Kingdom	10	35,938	27	5,227	23	569	41,734	1.9
15. BZW	United Kingdom	7	37,379	0	0	–	0	37,379	1.7
16. Nomura Securities Co. Ltd.	Japan	77	1,493	6	33,796	28	345	35,634	1.6
17. First Chicago NBD Corp.	United States	11	33,323	–	0	–	0	33,323	1.5
18. ABN-AMRO Bank NV	Netherlands	12	33,309	–	0	–	0	33,309	1.5
19. Société Générale SA	France	20	16,287	20	8,816	41	141	25,244	1.1
20. Bank of Nova Scotia	Canada	13	26,561	0	0	–	–	26,561	1.2
21. Salomon Brothers Inc.	United States	0	–	10	23,719	12	1,412	25,131	1.1

(continued)

Table 4.3 (continued)

Bank	Country	Loans[a] Rank	Loans[a] Amount (million US$)	Bonds[b] Rank	Bonds[b] Amount (million US$)	Equity[b] Rank	Equity[b] Amount (million US$)	Total[c] (million US$)	Share (%)
22. Bankers Trust Co.	United States	14	24,153	42	2,388	–	0	26,541	1.2
23. HSBC Group	United Kingdom	25	10,878	17	11,282	19	807	22,967	1.0
24. CIBC Wood Gundy	Canada	15	23,741	47	1,675	–	–	25,416	1.2
25. ABN AMRO Hoare Govett	Netherlands	–	–	13	18,853	14	1,212	20,065	0.9
Industry totals			1,500,922		638,989		61,419	2,201,330	100.0
Top 2 (% of total)			25.5		0.0		0.0		19.4
Top 5 (% of total)			46.6		7.9		2.4		34.1
Top 10 (% of total)			55.5		34.1		30.1		48.6
Top 20 (% of total)			69.6		57.8		65.5		66.1
Top 25 (% of total)			73.5		66.8		71.1		71.5

Source: Capital Data, Ltd.

Note: Dashes indicate amounts less than $1 billion.

[a]Proportional credit to arranger.

[b]Proportional credit to book runner.

[c]Loans, bonds, and equity combined.

ber of participants. Pricing is competitively determined through an auction-type format, again involving a number of participants. There is secondary market trading, albeit mostly among a restricted class of investors, other banks. While an informal interbank market for loan participation has existed since the inception of the syndicated loan market, negotiability has been aided by the increased use of transferable participation certificates, which allow lenders to sell and transfer their shares in a loan and register the change in ownership legally. Nearly 20 percent of syndicated loans issued in 1995–96 were transferable, compared to 3 percent in 1985–86. Finally, since participation in a syndicate typically involves numerous banks, information regarding the loan contract is usually public knowledge.

At least three institutional characteristics distinguish syndicated bank lending from capital market financing, however: distinct investor classes for the two instruments, allocation of interest rate risk between borrower and lender, and the type and severity of restrictions imposed on borrowers in covenants. These differences have affected the relative importance of the two forms of finance in primary market financial flows, and changes in these characteristics will drive their future evolution.

First, participation in syndicated loans and investment in debt securities is undertaken by behaviorally distinct investor classes. The primary participants in syndicated loans have (so far), of course, been banks. Investors in debt securities represent a much broader class of participants—including retail investors, large institutional investors, and banks. These investor classes are fundamentally distinct both in their appetite for gauging and bearing credit risk and in their ability to salvage value in the event of borrower distress or default. Syndicated bank lenders consist of a relatively homogeneous set of creditors credibly able to form coalitions that can impose substantial costs on borrowers by denying them access to the international banking market, thus raising the cost to borrowers of defaulting to them. In the event of default, similarity of interests among members of the syndicate increases the incentive for cooperation among creditors. Some of the incentives for cooperation among creditors in the event of default are institutionalized in syndicated lending contracts. These include "sharing clauses," which require that any member of the syndicate receiving payments from a defaulting borrower share these with members of the syndicate who have not received similar amounts, including the proceeds of any litigation. In contrast, due to the relatively large number and diversity of investors in debt securities, and the absence of contractual incentives for cooperation, it is in general much more difficult to develop a common negotiating position that is in the collective interest of the bondholders.[10] The expected salvage value of debt securities in the event of borrower distress is, therefore, lower.[11]

10. The specific legal rights of international bondholders are determined by the local jurisdiction in which bonds are issued and can vary greatly.

11. Moody's (1996) reported recovery values during the 1990s (per $100 face value) of $71 for defaulted senior secured bank loans, $57 for senior secured bonds, $46 for senior unsecured bonds,

Second, international syndicated lending is at floating rates of interest, quoted as a spread over some rate representing banks' own cost of funds, while the majority of bonds are fixed coupon bonds. During 1980–96, for example, fixed rate bonds made up 76 percent of total issuance, floating rate notes (FRNs) 19 percent, and convertibles 5 percent. It should be noted further that the market for FRNs is dominated—on both sides—by financial institutions and can, therefore, be thought of as being to a considerable extent an interbank market.[12] Thus the bulk of interest rate risk is borne by the (nonfinancial corporate or sovereign) borrower on the syndicated loan market, while it is borne by the lender (investor) on bond markets.[13]

Third, one of the features of conventional bank lending that distinguishes it from direct capital market lending is the lack of public disclosure requirements as compared to direct borrowing on capital markets through security issuance. This feature of bank lending has survived the transformation from relationship to wholesale syndicated lending. The difference in public disclosure has traditionally been compensated for by stronger restrictions imposed on borrower behavior in covenants in bank lending—such as restrictions on the gearing ratio of the borrower and the double pledging of assets as collateral—than in security issuance.

In our view, the difference in appetite for risk between the two sets of investor classes, the relative allocation of interest rate risk between borrowers and lenders in the two instruments, and the relatively more burdensome covenant restrictions on syndicated loans have naturally strengthened the incentives for borrowers to access capital markets directly in "good times" and revert to bank borrowing in "bad times," heightening the role for banks as lenders of "next to last resort." During good times borrowers favor direct borrowing on the capital markets, for example through bond issuance, because it typically implies lower interest rate risk to the borrower and less burdensome covenant restrictions than bank lending. When borrowers face bad times, the lower tolerance for risk among investors in capital markets causes the terms of such lending to shift more sharply against borrowers, who then revert to bank lending. As discussed above, some of the change in the role of banks from providers of medium- and long-term financing to contingency financing has been formalized by the rapid growth of revolving credits and longer term credit facilities. In our view the medium- and long-term syndicated lending market also stands ready to extend new credit when borrowers face bad times.

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and $34 for subordinated bonds. While these estimates are consistent with our hypothesis, we would emphasize that they underestimate the higher relative salvage value of bank loans compared to bonds because earlier and more frequent renegotiation of bank loans prevents actual defaults.

12. Financial institutions accounted for 71 percent of net FRN issuance in 1995 and 76 percent in 1996. Nonfinancial corporate issuers meanwhile accounted for 17 and 13 percent, respectively. See Bank for International Settlements (1997).

13. Banks do bear the more modest interest rate risk between repricing dates. They also bear the risk of changes in the average level of spreads over the duration of the loan.

While evidence for this hypothesis requires examples of good and bad times for individual borrowers, the aggregate patterns of borrowing by Latin American emerging markets during the 1990s boom in capital inflows to the region provide support for this view. Figure 4.6 presents quarterly data for external primary market financing for Latin America during the Mexican crisis. From the upper panel it is evident that despite the sharp contraction in total flows to Latin America in the first quarter of 1995, following the devaluation of the Mexican peso in December 1994, syndicated bank lending actually rose. The lower panel, which plots the shares of bonds, equities, syndicated bank lending, and short-term loans, indicates that during the first quarter of 1995, the share of international bond and equity issuance from the region reached its lowest point in the 1990s, with no equity issuance during the quarter. The share of syndicated lending, on the other hand, reached its highest point during the 1990s, accounting for about 50 percent of total flows. The price response was much more severe in bond markets than in loan markets. With regard to pricing, average spreads on new medium- and long-term syndicated sovereign loans to the region remained unchanged, at a little over 60 basis points, between the first quarter of 1995 and the last quarter of 1994.[14] In bond markets, on the other hand, the stripped yield spreads on Latin Brady bonds rose from around 750 basis points in October 1994 to 1,750 basis points in March 1995.

With regard to prospects for change in the institutional features that distinguish syndicated bank lending from debt security markets, we offer some observations. First, a number of new participants—institutional investors and, in particular, insurance companies and mutual funds—have recently begun to enter the syndicated loan market as suppliers of funds. As noted, these institutions have very different appetites for risk because they do not have a base of insured deposit liabilities as banks do. Nor are they subject to the same regulations and supervision. It is still, however, somewhat early to judge how their entrance will affect the syndicated loan market, and how it will affect banks. Second, competition—among banks for mandates within the syndicated bank loan market, between banks and other financial intermediaries, and between the syndicated loan market and capital markets—has in recent years created pressure for the relaxation of covenants on bank lending, bringing them, in a sense, closer to those embodied in debt securities. The relaxation of loan covenants has been most evident at the high-yield end of the market, such as on loans to emerging market entities, and in mid-1996, for example, three unsecured loans by Argentine companies were reportedly put up for syndication without any financial covenants (Loan Pricing Corporation, various issues). These developments prompted the U.S. Office of the Comptroller of the Currency (1996) to express concerns last year about the relaxation of lending standards to higher risk borrowers.

14. Average maturities also remained relatively stable at around three years.

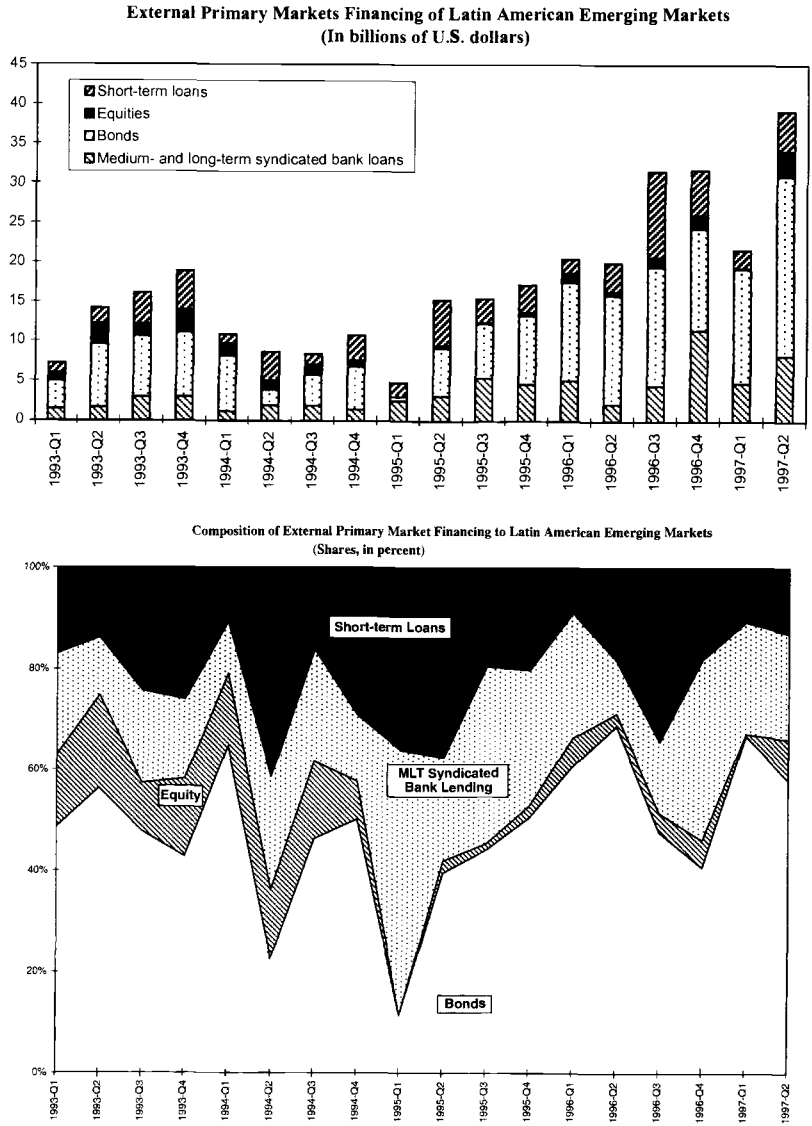

Fig. 4.6 Mexican peso crisis, 1993:1–97:2
Source: Capital Data, Ltd.

4.1.4 Cross-Border Derivative Transactions

Arguably the most significant development accompanying the globalization of international capital markets in the 1980s and 1990s has been the proliferation of financial derivative products, with profound implications for international capital flows. First, the use of derivatives has revolutionized the ability

of participants in international capital markets to unbundle and manage risks—interest rate and currency risks and increasingly now credit risks as well—thereby greatly enhancing the attractiveness of cross-border investments. Second, as a ready means for arbitraging differences in funding costs and returns across market segments and international borders, derivatives have increased pressures for the integration of world capital markets.[15] Third, by lowering the transaction costs of carrying out complicated investment and hedging strategies, which would otherwise require several transactions in the underlying instruments, derivatives have increased the efficiency of international capital markets. It is interesting to note that out of a total volume of $47 trillion (in March 1995) of over-the-counter derivative products, $22 trillion, or about half, involved a cross-border counterparty; hence derivative markets are to a large extent international.[16] The enormous volumes measured in terms of notional principal suggest that derivative transactions have in many cases displaced transactions in the underlying markets, and although the use of derivatives does not increase net financing flows, it has been responsible for a massive increase in gross flows. Indeed, the extensive use of cross-border derivatives is obscuring the meaning of the traditional capital account categories in balances of payments. Existing capital accounts data are likely to be strongly compromised by the extensive use of derivatives. Fourth, derivatives are being used extensively to circumvent remaining domestic financial regulation in countries, particularly emerging market countries, and they thereby achieve a closer integration of these markets into the global market (see Folkerts-Landau and Garber 1998). For example, a bank constrained by regulation from taking on domestic equity price risk can acquire a U.S. government security position and enter into a total return swap with an investor who is allowed to buy the equity risk but who wants to hold a position in U.S. government securities. An international bank will most likely act as principal intermediary.

Swap contracts represent the predominant and pervasive derivative product (see table 4.4). The familiar method by which swaps provide a ready tool for arbitraging funding differentials between markets is that associated with the issuance of debt securities. Swaps used in conjunction with international bond financing lower the cost of funding by exploiting the comparative advantage of counterparties in the swap across segments of international capital markets that may exist for a variety of reasons. It is estimated, for example, that Eurobond transactions involving swaps have sometimes made up more than two-thirds of new issues (see Smith and Walter 1997). More recently, swaps have facilitated the "repackaging" of securities to arbitrage yield differentials across

15. For evidence on the integration of world capital markets during the period, see Goldstein and Mussa (1993).

16. These data are based on the Bank for International Settlements survey carried out in March 1995—see Bank for International Settlements (1996). They do not conform with the time-series data provided in table 4.4, which are based on reporting by members of the International Swaps and Derivatives Association.

Table 4.4 **Markets for Selected Derivative Financial Instruments: Notional Principal Amounts Outstanding, 1986–96 (billions of U.S. dollars)**

Instrument	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Exchange-traded instruments	618.2	729.9	1,304.7	1,766.9	2,290.3	3,519.3	4,634.4	7,771.1	8,862.5	9,188.2	9,884.5
Interest rate futures	370.0	487.7	895.4	1,200.8	1,454.5	2,156.7	2,913.0	4,958.7	5,777.6	5,863.4	5,931.1
Interest rate options[a]	146.5	122.6	279.2	387.9	599.5	1,072.6	1,385.4	2,362.4	2,623.6	2,741.8	3,277.8
Currency futures	10.2	14.6	12.1	16.0	17.0	18.3	26.5	34.7	40.1	38.3	50.3
Currency options[a]	39.2	59.5	48.0	50.2	56.5	62.9	71.1	75.6	55.6	43.2	46.5
Stock market index futures	14.5	17.8	27.1	41.3	69.1	76.0	79.8	110.0	127.3	172.2	198.6
Stock market index options[a]	37.8	27.7	42.9	70.7	93.7	132.8	158.6	229.7	238.3	329.3	380.2
Over-the-counter instruments[b]	–	865.7	1,657.1	2,489.0	3,450.3	4,449.5	5,345.7	8,474.6	11,303.2	17,712.6	21,069.0
Interest rate swaps	–	682.9	1,010.2	1,502.6	2,311.5	3,065.1	3,850.8	6,177.3	8,815.6	12,810.7	15,584.2
Currency swaps[c]	–	182.8	319.6	449.1	577.5	807.2	860.4	899.6	914.8	1,197.4	1,294.7
Interest rate options[d]	–	0.0	327.3	537.3	561.3	577.2	634.5	1,397.6	1,572.8	3,704.5	4,190.1

Sources: Bank for International Settlements, "International Banking and Financial Market Developments" (Basel, various issues), and International Swaps and Derivatives Association, Inc. (ISDA).

[a]Calls and puts.

[b]Data collected by ISDA only; the two sides of contracts between ISDA members are reported once only.

[c]Adjusted for reporting of both currencies; includes cross-currency interest rate swaps.

[d]Caps, collars, floors, and swaptions.

investor bases. For example, on the market for emerging market debt, which remains particularly segmented, issuers have bought and transferred Brady bonds to offshore trusts or special purpose vehicles, which have then issued asset-backed securities in Germany, where demand for emerging market credit denominated in deutsche marks has been particularly strong. By swapping the income from the Brady bonds into deutsche mark, the investor can lock in the yield differential.

International banking firms are the main suppliers of over-the-counter (OTC) derivatives, particularly swap contracts. Relatively scarce before 1980, cross-border swaps and their family of related products (forward swaps, collars, caps, swaptions) and transactions have come to represent a substantial component of international financial market activity. Banks have a natural demand for swaps to take advantage of swapping opportunities across their loan books, as a means of lowering funding costs, in managing funding gaps, for improving lending profits, and in managing interest rate and currency exposures from their loan or investment portfolios. Banks are also naturally positioned as counterparties in derivative transactions through their ability to supply liquidity to this market when needed.

Global derivative markets have grown exponentially over the past decade (table 4.4—based on reporting by members of the International Swaps and Derivatives Association). This has been the case for both exchange-traded and OTC products, though the flexible customized nature of OTC contracts and regulatory advantages have led to the increasing concentration of activity in the OTC market. According to a comprehensive survey conducted by the Bank for International Settlements in early 1995, the notional value of outstanding OTC derivative (including foreign exchange, interest rate, equity, and commodity) contracts totaled $47.5 trillion (after adjusting for double counting and including estimated gaps in reporting) at the end of March 1995 (see Bank for International Settlements 1996). About 98 percent of this total was accounted for by interest rate derivatives ($28.9 trillion) and currency derivatives ($17.7 trillion). In addition to OTC derivatives, intermediaries who were involved in the survey reported that they were engaged in a further $16.6 trillion of exchange-traded derivatives. In aggregate, therefore, respondents to the survey (from twenty-six countries) revealed that (after adjusting for double counting) they were involved in about $64 trillion, by notional principal, of derivative contracts. To put this in perspective, the aggregate market value of all bonds, equity, and bank assets in Japan, North America, and the fifteen EU countries totaled $68.4 trillion at the end of 1995, which is only about 7 percent larger than the size of derivative markets as measured by the above survey.

We would emphasize two other roles of banks that stem from their being the primary providers of credit to the international financial system, which have fundamentally altered its operation and the dynamics of financial crises. First, international bank lenders are the main suppliers of credit used to leverage

the capital of high-risk, high-return investors, such as the macro–hedge funds, proprietary traders, and risk-tolerant mutual funds, imparting an aggressive speculative bent to a formidable quantity of international capital flows. Registered offshore (Bermuda, Cayman Islands), macro–hedge funds are subject only to the regulatory requirements in the markets in which they operate and are not subject to the disclosure and fiduciary regulation customary in the major capital markets. These funds are increasingly able to circumvent local prudential restrictions through the use of off-shore derivative transactions. It is estimated that speculative macro–hedge funds have about $100 billion under management. With an average leverage ratio of about ten, their total resources exceed $1 trillion. Without such leverage the impact of this new investor class in global financial markets would be more limited.

Second, banks play a key role in exchange rate crises, with obvious severe implications for capital flows. Speculation against a currency requires domestic currency credit, either implicitly (off balance sheet) or explicitly (on balance sheet), and banks are the major source of this credit. Speculation against a currency can be carried out directly by taking a position on the forward market—selling the currency forward—typically to a domestic bank as counterparty, who then bears the investor's credit risk, and the forward contract represents an implicit or off-balance-sheet extension of credit. As the domestic bank then hedges its position, entering into an offsetting transaction with the central bank or acquiring foreign exchange on the spot market, these transactions create pressures for the forward and spot rates to depreciate and for domestic interest rates to rise. Settlement of forward sales of a currency by a foreign speculator also typically involves the extension of domestic currency credit. Speculation against a currency can also be carried out by the use of explicit domestic currency credits that, when converted into foreign currency, create a short position in the domestic currency. The conversion of domestic currency credit into foreign currency represents a capital outflow, placing downward pressure on the spot exchange rate, and to the extent that these pressures are offset by central bank intervention, they result in a loss of reserves. Derivatives, such as structured and equity-linked notes, increase the channels through which leveraged positions can be taken against the domestic currency (see Garber and Lall 1998).

4.1.5 Policy Challenges

Resolution of Sovereign Debt Crises

The concentrated nature of syndicated debt holdings has been helpful in the resolution of international sovereign debt problems. History has amply demonstrated that the likelihood of achieving a negotiated debt workout and the provision of additional liquidity funding, without debilitating legal attachment of sovereign assets with disruption of international trade and finance, is much

higher in the syndicated loan market than in international bond markets. During earlier periods of high capital mobility—in the nineteenth century and the interwar years—when international flows predominantly took the form of bond finance, free rider problems among bondholders made the provision of new money, which required large numbers of diverse individual investors to go along, difficult, and outright defaults were common (Eichengreen and Portes 1989; Eichengreen 1991). The readjustment of defaulted debts involved protracted negotiations that were complicated by the multiplicity of bondholders and by uncertainty about their representation, often requiring up to a quarter-century to complete. Furthermore, the fact that trade finance was provided by the banks, while long-term loans were extended by individual investors, separated the interests of the creditor groups and severely restricted the sanctions that bondholders could bring to bear against defaulting borrowers. Hence, the recent shift, or reversion, from bank to bond finance is likely to have made future debt crises more protracted and severe, unless better mechanisms can be found to achieve speedy and orderly workouts in international bond markets.

Regulatory Challenge

The emergence of a small group of highly innovative, adaptive, and competitive global banking institutions poses a major challenge to banking and securities supervisors. These institutions intermediate—on and off balance sheet—a significant portion of total international cross-border flows. They have the ability to book transactions in jurisdictions with low tax and regulatory restrictions. Their overall net firmwide exposures are difficult for supervisors to assess. The concern, therefore, is that these international institutions still lean heavily on the public sector financial safety net without being effectively constrained in their risk-taking activities.

The recent restructuring of the Basle risk-weighted capital requirement to allow for greater use of firms' own risk management models in arriving at regulatory capital requirements is removing a distortion from the risk-taking behavior of the firms, but whether capital requirements based on value at risk (VAR) models sufficiently restrict aggregate risk taking by international banks is an open question. Indeed, one might ask whether capital requirements that are sufficiently high to force banks to internalize the negative externalities of a solvency crisis—that is, pricing the financial safety net efficiently—might not make banking so unprofitable as to force most if not all banking business into nonbank financial institutions.

Derivatives

The already extensive and still growing practice of using cross-border derivative transactions to circumvent domestic financial regulation is contributing to the integration of emerging market countries and the smaller industrial countries into global capital markets. However, it is wresting control over the

speed of deregulation away from policy authorities. It also raises prudential problems, since banks in these countries use derivative transactions with international banks to circumvent domestic prudential restrictions on their leverage and risk positions. In the absence of sophisticated risk management systems such position taking may undermine the stability of the domestic financial system. It is difficult, if not impossible, to avoid this problem, except to make sure that the domestic supervisory and regulatory architecture is sufficiently strong to ensure the integrity of the domestic financial system (Folkerts-Landau and Lindgren 1997).

Exchange and Financial Crises

International banking firms are the main providers of leveraged finance to highly leveraged macro–hedge funds. These funds have been heavily involved in taking leveraged positions when there is reason to believe that asset prices, including exchange rates, are out of line with underlying fundamentals. Although such pressure may be useful in forcing an adjustment in prices, it frequently precipitates adjustment far more rapidly than might be considered optimal. The question, therefore, arises whether the financing extended to high-leverage speculative position takers can, or should be, restricted through prudential regulation in the interest of international financial stability.

4.1.6 Conclusions

The international financial system is undergoing a major structural change, with the emergence of a small set of globally active financial firms, which have captured a large part of the international intermediary business. The composition of financial flows is shifting from medium- and long-term syndicated bank lending to greater direct capital market financing, and bank financing is shifting toward shorter term structured finance, including off-balance-sheet contingent liquidity and risk management finance. These changes have been driven by a deterioration of bank creditworthiness, increases in regulatory capital requirements, and significantly greater competition from nonbank financial institutions.

These developments have made the workout of sovereign debt difficulties far more difficult, and hence they have increased the potential disruptive impact of such crises. The evolving environment also poses major regulatory challenges. Is and can the financial safety net still be adequately priced without greatly diminishing the size of the banking business as it currently operates? International financial institutions have been the main suppliers of leverage finance for the speculative macro–hedge funds, thereby raising the issue of whether such financing is contributing to greater volatility in international markets.

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2. *Mervyn King*

At the annual IMF and World Bank meetings, there is intense competition to produce the most bland official pronouncement. Following an economic crisis, countries face "policy challenges." There are several policy-challenged governments around the world, and international capital movements seek them out.

Such capital movements are large. Net private sector capital flows to emerging markets in 1997 will, in all likelihood, exceed $250 billion. That is around 1 percent of world GDP, a not insubstantial figure. Those flows have increased substantially over the past decade. And many of them involve banks. But as the paper by Chadha and Folkerts-Landau illustrates, the role of banks has been diminishing. Bank-intermediated flows this year are sharply down over 1995 and 1996, especially to Asia. As Chadha and Folkerts-Landau argue, "The pure commercial bank of the 1970s has largely disappeared from international markets." Nevertheless, banks, and the health of the banking system more generally, are central to the diagnosis of the causes of the recent crises, such as that in Thailand, and have played a major part in the discussion at this conference.

At the risk of being too provocative, I want to pose three questions. First, are we in danger of focusing too much on banking supervision of individual institutions—which is rapidly becoming the mantra of international meetings of officials—rather than on an analysis of the risk exposure of the banking system as a whole? Second, should we not focus on the net risk exposure of a country's financial system as a whole rather than simply the banking system? Third, how should we think about and organize any international lender-of-last-resort facility?

Banks can be dangerous institutions. They engage in massive maturity transformation. Borrowing short and lending long can be a good way to make money. But it is also risky. A large enough capital base can provide some insurance against the risk of a run on an individual financial institution. That is why banks are prudent—the good ones by choice and the bad ones at the invitation of the regulator. But when the financial system as a whole hits trouble, a number of banks, indeed the system as a whole, may find themselves unable to meet the demands of their creditors, and a major financial crisis ensues. That is usually bad news for taxpayers. All finance ministries should carry a sign saying "Banks can be dangerous to your wealth."

All this is fairly obvious. But the issue is normally discussed in a domestic setting. Now we see it raised in the international context. It is striking that the

common theme to almost all of the international financial crises that we have seen in the era of floating exchange rates involves a crisis of the banking system. Or, to be more precise, it involves a crisis of institutions with significant mismatch—of either maturities or currencies.

At one level, the solution is straightforward. Sound banking supervision combined with an international lender of last resort should both minimize the risk of a crisis erupting and provide a means of dealing with it when it occurs. And over the past two or three years significant progress has been made in extending both elements of the safety net. The Basle Committee, working in association with a number of emerging market countries, has enunciated twenty-five core principles for banking supervision, and the resources of the IMF have been significantly increased (with its new Emergency Financing Mechanism and the creation of the New Arrangement to Borrow—EFM and NAB, respectively), enhancing its ability to act as an international lender of last resort. But the question that should concern us all is the moral hazard that results. By that I do not mean that the borrowers themselves—sovereign borrowers in this context—are likely to pursue significantly inferior macroeconomic policies as a result of the existence of the IMF, although the recent suggestion of an Asian Monetary Fund creates doubts in my mind that a regional body would impose such tight conditionality as can a less political international body such as the IMF. No, the real moral hazard is that of the lenders. Are international capital markets lending to emerging markets or to the G-10?

In the domestic context, the classic statement of the lender-of-last-resort role was provided by Bagehot (1873): "In time of panic it [the central bank] must advance freely and vigorously to the public out of the reserves. . . . These loans should only be made at a very high rate of interest. This will operate as a heavy fine on unreasonable temerity and will prevent the greatest number of applications by persons who do not require it." The key principle is the willingness of the central bank to lend freely against good collateral. Where the proposed collateral takes the form of marketable securities, it is easy to calculate the appropriate degree of collateral that should be provided. But where collateral takes the form of illiquid loans and investments in nonmarketable assets, a central bank rarely has the opportunity to value with any precision the collateral offered. Rather, lender-of-last-resort support becomes a public investment to reduce the risk of a systemic crisis. But if the lenders know that the authorities will step in whenever such financial institutions—mainly banks—get into trouble, then there is little incentive to price such loans appropriately.

To remove the moral hazard requires a way of penalizing the creditors in such a situation. As a matter of public policy we have not been very successful in ensuring that lenders suffer some of the loss. Deposit insurance is often extremely generous in the case of domestic banking systems. And internationally, the various rescue packages have protected the investments of foreign investors who lent to either governments or the domestic banking system in foreign currency loans. Here the maturity mismatch has two components. First,

in several instances, such as Thailand recently, the domestic banks borrowed short to invest in rather dubious long-term assets such as speculative real estate ventures. Second, lending in foreign currency protected the overseas investors from a consequence of a crisis that led to a sharp fall in the exchange rate. In contrast, investors who put their money into the equity market did indeed lose a great deal, because of both the fall in the equity market and the change in the exchange rate.

The mere existence of international rescue packages creates a moral hazard for lenders. Investors are encouraged to channel funds to emerging markets via forms of investment that are more likely to receive assistance. Following the Mexican crisis, the G-10 set up a working party to produce proposals that would convince private sector markets that bond finance was not underwritten by the G-10. Plans for workouts of private bond finance were published and put forward for discussion by the market. They have largely been ignored. And over the past two years secondary market spreads on international bonds have fallen significantly. Spreads on Brady bonds have halved, and in some cases have more than halved. Even with a widening of spreads on some Asian bonds following the flotation of the Thai baht, spreads on bonds in other regions continued to decline. In Thailand many of the overseas investors were able to lend in foreign currency, and their investments have been underwritten by the international rescue package. In those circumstances it is not surprising that the true risk is not priced into private sector loans. That encourages excessive short-term capital flows.

Many of these crises are associated with, or exacerbated by, banking crises. One of the main lessons of the background papers is that in too many parts of the world the banking system is weak. For example, in their background papers Sebastian Edwards (chap. 1.1) shows that the Chilean crises of 1982–83 and the Mexican crisis of 1994 were associated with problems in the banking system and Peter Garber (chap. 7.2) shows that the Mexican banks had little incentive to price Tesobono risk properly. The conventional conclusion, and indeed the universal recommendation of all official meetings in recent years, is that banking supervision must be improved. Although I would not wish to argue that supervision should be *less* rigorous, is it not time to ask whether the implicit government guarantee is not itself an important part of the cause of the problem because of the moral hazard created?

There is only one logical end to continuing increases in the degree of banking supervision—and that is public ownership of the banks. It is simply unrealistic to expect supervisors to regulate all capital transactions unless they end up managing the institutions themselves. And even then the managers seem to have difficulty controlling what goes on. Are we expecting supervisors to perform the impossible? Perhaps the time has come to consider whether or not governments should step back somewhat from the regulation of such a wide swath of the financial services industry.

The experience of emerging markets in recent years surely shows that the

high degree of maturity transformation associated with the banking system is not a free good. Undoubtedly it conveys benefits. But it certainly involves costs. Some risks faced by banks are subject to the law of large numbers. Some default risks and the risk of individuals withdrawing deposits because they need cash may be uncorrelated. But important risks are highly correlated. These include the impact of the business cycle on default risk, the impact of changes in interest rates on values of long-term assets, and the risk of having to refinance short-term liabilities at different interest rates. In the era of global capital movements with flexible exchange rates and much greater competition between financial intermediaries, volatility and risk are higher. Banks no longer have large margins protected by oligopolistic positions with which to rebuild capital after an adverse shock. As Martin Hellwig has written persuasively, we have paid too little attention to the risks of the system as a whole and too much to those of individual institutions. Suppose, for example, that each bank borrows at a given maturity and lends at a maturity of only one year greater. The regulators may feel that there is rather little maturity transformation being undertaken by any given individual institution. But with forty banks in the system, short-term call money can be transformed into a forty-year mortgage on real estate. The banking system helps to reallocate risks among agents in the economy, but those risks have in the end to be borne by somebody. The monetary authorities need to understand the nature and size of those risks. To quote Hellwig (1995): "The interest rate risk exposure of the system as a whole is not visible to the individual institution unless it knows that it is but an element of a cascade and that credit risks in the cascade are correlated." Hence the focus on banking supervision misses an important aspect of the authorities' responsibility for financial stability. It is important to assess the net position of the financial system vis-à-vis the rest of the world. Looking at individual institutions is not enough. Information of that kind, especially with respect to currency and maturity exposure of the system as a whole, would have been helpful in the case of the Mexican crises, and no doubt the same applies in the case of Thailand and will apply in the case of future crises.

At the recent IMF meetings in Hong Kong, the G-10 started to ask itself what we could do to reduce the moral hazard associated with the existence of government intervention in financial markets. That was not just a comment on the crises in Thailand, or even on the Mexican crisis and the prospect of other international crises in the years to come. It was also a reflection on the role of intervention in our domestic financial system. In an era of free capital markets, it is essential that flows of capital move at prices that reflect the risks involved and are not underpriced because of the belief that the government will step in and rescue failed institutions. As Stanley Fischer argued at the meetings, the private sector must bear some of the costs of the risk involved. That requires a careful analysis of the sources of the moral hazard. The large number of creditors means that it is difficult to impose costs on bondholders. That lay behind the observation of the G-10 working party referred to above. Bank finance too

can involve a moral hazard if the public sector underwrites the banking system, although in some cases, such as the debt crises of the 1980s, it is possible to impose losses if the number of banks involved is not too large. In contrast, equity holders bear the full cost of losses. So attention needs to be focused on the flows of bond and bank finance.

I shall leave for discussion the three questions I posed at the outset. But one conclusion is clear. Any measures that reduce the need for the public sector to intervene in the event of a financial crisis would reduce the extent of moral hazard. The aim should be to reduce the externalities arising from a financial crisis. Two measures would help in this respect. First, the promotion of real-time gross settlement systems for payments and settlements would reduce the potential knock-on effects of any given institution failing. Second, the contagion that we have seen in financial markets from one country to another in the wake of both the Mexican and Thai crises might be reduced by improving the information flow about policies that are followed in the countries that might be at risk. Transparency and disclosure can help to reduce contagion. It was appropriate for the IMF to ask Thailand to publish its forward book revealing the extent of the central bank's foreign exchange exposure. But it is hard to see how the G-7 can lecture other countries on the need for transparency if they themselves do not provide a lead. My own government has set an example by deciding to publish Britain's foreign exchange reserves, both spot and forward. Hitherto the forward book was kept secret.

It is perhaps somewhat incautious of me to break the central bankers' union rules by arguing both that banks can be dangerous institutions and that clarity and transparency is a good thing. But as Bagehot observed in his classic *Lombard Street,* "Many years since, I remember seeing a very fresh and nice-looking young gentleman, and being struck with astonishment at being told that he was a Director of the Bank of England. I had always imagined such Directors to be men of tried sagacity and long experience, and I was amazed that a cheerful young man should be one of them. I believe I thought it was a little dangerous."

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3. Roberto G. Mendoza

In addressing the topic of the evolving role of banks in international capital markets, I would like to deal with an issue we've not yet discussed—the effect of technology. Financial technology, in the form of front-end analytics and back-office processing, has truly revolutionized the banking role.

First—this is in no particular order—technology has forced dramatic de facto regulatory change by redistributing the information advantage that the classic commercial bank intermediary enjoyed. With this resource taken away from banks, regulatory change had to occur, or banks would have gone out of business. In the United States, the breakdown is most noticeable between banking and securities activities. Globally, it's happening among banking, securities, and insurance.

Over the course of this conference, we've heard banks described as both obsolete and dangerous—an awful combination. But it's true. What many of us grew up thinking of as the traditional role of banks—to intermediate credit on the balance sheet—is simply not a worthwhile activity on a wholesale basis in any developed market, despite the implicit subsidy provided to commercial banks by the various guarantee systems to which Mervyn King just referred.

The second result of technology advances, securitization, has already been mentioned. We now have the technology to make the enormous computations necessary to securitize anything from mortgage-backed securities to commercial loans to the royalty rights to David Bowie's songs. Indeed, one could argue that in the future all financial assets—and a great many nonfinancial assets—will be securitized, which has profound implications for the financial system and the global economy. I will return to this later.

Third, technology has permitted the exponential growth of derivative markets. This also has profoundly changed and even enhanced—or so bankers like to think—the role of banks because derivatives allow financial intermediaries to aggregate, segment, and distribute risk, as opposed to assets, on an effective basis. I will argue in a moment that derivative markets enable the financial system and its banking component to lower the aggregate risk in the economy, whether at a national or international level, by permitting investors to diversify their portfolios more effectively, along the efficient frontier.

So these three effects—massive regulatory change, a securitization process that is becoming ever more efficient, and growth in derivative markets—have changed the role of banks in the evolving international markets.

Traditionally, banks recycled assets across their balance sheets in a manner that was visible and controllable and could be regulated by governments and central banks. But now we have three types of banks that we need to consider.

The first, which was described in the excellent paper by Chadha and Folkerts-Landau, is the universal bank, which performs a global, wholesale

risk intermediation function. This kind of bank does much more than take deposits and make loans; it also provides advisory services, makes proprietary investments in debt and equity, and acts as an underwriter and agent in debt and equity transactions and as a counterparty in derivative markets. In effect, a universal bank is an extremely efficient agent for allocating capital and risk. Universal banks include not just the obvious names, such as DMG, Chase Manhattan, and CSFB, but all of the global securities firms, which now, as a practical matter, perform the same functions as a result of the breakdown in regulatory barriers.

The second category of banks is the one we have talked about a great deal with respect to Thailand and Mexico: primarily local and importantly retail. Such a bank is not a global asset allocator but rather an intermediary between saving and investment in the domestic market and between external and domestic markets. We have been focusing on the second role, in which a local Thai or Mexican bank may engage in maturity or currency transformation by funding itself in international markets to finance local activities such as real estate investment.

The third category—and perhaps the one with the greatest influence—is All Other. All Other has one significant characteristic; namely, All Other is not regulated. All Other includes obvious entities such as hedge funds and less obvious entities such as governments themselves playing a role as investors. But the enormous swings in capital flows facilitated by the first category, universal banks, and sometimes channeled through the second category, the local intermediaries, often represent the investment decisions of All Other, the unregulated. The fact that they are unregulated, and therefore can be highly leveraged, accounts for many of the issues discussed this morning.

Let's return to the change in role of traditionally defined banks: intermediating risk, not assets. The new role means banks need less economic, as opposed to regulatory, capital because of the securitization process. And they will need even less capital in the future. Instead, they will facilitate the transmission mechanism between financial events in a particular geographic sector and others, or between particular asset classes. To the extent that there is any true economic linkage, those effects are transmitted in a nanosecond across markets as a result of the efficiency of these global institutions and, primarily, their derivative activities.

The implications for the financial system are highly positive. The growth in derivative markets lowers aggregate risk and allows banks to manage themselves in a more prudent manner, thereby requiring a smaller cushion of capital. Derivative markets have another very important characteristic: they increase the transparency of the pricing of assets and liabilities. Both assets and liabilities can now be segmented according to their economic characteristics. The options embedded in them are stripped out and distributed to the natural holder of such a position or to the one for whom it has greatest value because of the balance of risks and rewards in the rest of its portfolio.

Another effect of derivative markets is that, almost by definition, they reduce the cost of capital. On a secular basis, the cost of capital is declining because of the more efficient distribution of risk in the financial system. Some even argue that the lower cost of capital accounts for the otherwise inexplicable heights equity markets have reached in some developed countries.

In essence, the effect of securitization is to turbocharge the influence of derivative markets in lowering the cost of capital. Capital not only costs less but earns greater returns because it is no longer a static concept of a certain amount of capital applied to a certain amount of assets. In the future, capital will primarily be used to support the intermediation process: the acquisition of assets, their segmentation into appropriate risk pools, and their distribution. So you need less of it; it has lower costs; and it provides greater returns.

These factors increase rather than decrease the stability of the system. This is the only point where I would respectfully take issue with Chadha and Folkerts-Landau's paper, which argues that, as a result of a move from bank financing to capital market financing, there will be greater risk, or greater severity, in future crises.

I would, as a counterpoint, suggest that when a crisis erupts, whatever the reason, a cost occurs at that time. That cost can be recognized immediately or it can be recognized later. But what the derivative and security markets do is enable the cost to be crystallized immediately, thereby reducing the severity of any crisis and accelerating the institution of policies needed to rectify whatever the problem was in the first place. In general, these markets are a positive element but are considered threatening because they diminish the importance of governments, central banks, regulators, and multinational agencies. It is not rescue packages but the ability of the markets to crystallize cost immediately that leads to effective reform. In short, markets are better arbiters of stable growth policies by individual countries. Not only that, the technologically induced advances in the banking function allow markets to fulfill that role in an ever more efficient way day by day. Evidence of this can be seen in the convergence of the risk-adjusted real rates of return. It's not that we have a single real rate of return. Instead, the real rates of return adjusted for risk are converging on a global basis—a function of the greater efficiency and speed in the banking system.

Of course, there is the old saw about how you can't fight the markets. In an exchange rate crisis, the markets are on one side and a central bank on the other, and eventually the markets beat the central bank. But that's yesterday's story. Today's story suggests that the markets have even greater power: the power to force regulatory authorities, broadly defined, to recognize that many existing forms of regulation are simply outdated. The markets circumvent them or force reform, so that the notion of regulation in an institutional framework as opposed to a functional framework is being destroyed.

Second, the markets will absolutely prevent any government from trying to

pursue an independent monetary policy in the context of a fixed or semifixed exchange rate and free capital flows. Something has to give, and what the increasing speed of the transmission mechanism through the universal banks and the All Other has done is essentially force governments to adhere to policies that are market sensitive.

Moeen Qureshi made the point that the primacy of floating exchange rates was a dangerous concept or something to be avoided when you are actually in power and have political responsibility. I would respond: That's the whole point. The markets are not going to allow people to make those political tradeoffs. If they do, they'll be overwhelmed.

There are two risks. One of them is that the speed of the transmission mechanism can also turbocharge the effect of a shock in one geographic area or one asset class and create unintended results where there isn't a true economic link. I subscribe to the classic argument about markets overshooting. They *do* overshoot. And they correct very quickly. This doesn't mean there aren't going to be crises, but rather that even a crisis induced by overshooting, as Arminio Fraga argues is happening in Indonesia, is undesirable but will correct very quickly. In the course of history, this is a blip, and everything will be fine. The Mexican experience was tremendously painful for the Mexican people on every level: economic, financial, social, and political. Having said this, the crisis was a very effective corrective mechanism that has made Mexico much healthier than it might otherwise have been.

The other risk is that the speed of transmission can accentuate the severity of crises. I have already argued that the opposite effect occurs. Derivatives reduce risk; securitization increases the return on capital; markets have greater power than those with political agendas; and the net result is more stable growth and less volatility in worldwide markets.

A number of key issues remain:

1. To what extent are policymakers who accept this framework comfortable with the tendency of markets to overshoot?

2. Although the markets react very fast, the reaction time of the chief players in a country in financial crisis is slower, which poses a risk that argues for some type of cushioning mechanism.

3. There is often a difference between the strength of universal banks and All Other and that of the national banks in the middle that are the transmission mechanism. For example, many Mexican banks had bad assets on their books when they were privatized and then proceeded to add more, with a compounding effect. In this case, the transmission mechanism was a weakness.

4. Portfolio diversification has a downside. Derivatives reduce risk because they diversify portfolios, but portfolio diversification also increases the possibility of contagion. The issue of moral hazard has been very carefully described by Mervyn King, but I want to bring up one issue that relates to Qureshi's point about the subsidy implicit in guarantees. We believe that it would be perfectly possible for the private market to provide the equivalent of the

FDIC guarantee to the U.S. banking system. Not only is the capital available, but it would be an economically rewarding proposition. Indeed, a proposal has even been submitted to Congress. The problem is that the banks don't want it because their premiums in tough times would be higher than the subsidized price provided by the government. And government officials don't want it because they like the control. But it could be done.

5. Finally, there is a potential source of tension between this mobility of capital, which is almost instantaneous, and the much lower degree of mobility of labor, which causes trade friction.

My final comment relates to the future of banks. Banks in the first category, universal banks, and banks in the third category, All Other, have a very bright future. They will be the custodians of intellectual capital, segmenting and distributing risk more efficiently than their competitors. And they will marry that capital with the benefits of technology. That mix has potential for excitement, profits, and a contribution to less volatility.

With respect to the point about reduction versus redistribution of risk, I would respectfully stand by the point that derivative markets redistribute *and* reduce risk.[1] The reason is that risk is not an ethereal, stand-alone concept. Risk is a function of particular cash flows associated with that risk and of how the risk correlates with other risks belonging to its owner. The argument would be that more efficient redistribution puts risk in the hands of investors for whom that particular risk, while in and of itself very risky, might reduce the overall risk of their portfolios. The classic example: Does it make sense for an investment trust that only holds AAA bonds to acquire a catastrophic reinsurance contract? If it's completely unrelated, the likely answer is yes. That's an extreme case.

As to Kathryn Dominguez's point, I think that what happened in 1987 was a portfolio problem. Most of the things we do work in practice but not in theory. That one worked in theory but not in practice because of the gapping problem. This is not an indictment of derivatives but of a particular application, which, in retrospect, missed a fairly obvious danger.

Now, to speak to the debate we've been having about information. David Mullins whispered to me the same point I'm about to make. With hindsight, it is very easy to know what information made it obvious that a crisis was going to occur in Thailand or that the peso was overvalued. It was not so obvious at the time. There was lots of information swirling around—and lots of people who, while they might have thought something was going to happen in Thailand, didn't know when, and the "when" is as important as the "if." Many of those same people lost money in Thailand, and also took a hit in the 1980s.

On whether the provision of liquidity by the Fed is a sine qua non for the proliferation of these instruments: *The answer is, I don't know.* I would say that the Fed's role of providing liquidity is a very good thing. Also, the Fed makes

1. The remainder of this comment addresses points raised during the discussion.

money, as does the Bank of England, so it's not as if it were a charitable activity. I was in no sense arguing against the Fed's providing liquidity. Nor was I arguing against regulation. Indeed, I think that entities that create systemic risk need to be regulated.

With respect to the question of why we don't give up our banking license, I recognize that I can be accused of currying favor. William McDonough's response to the question eloquently describes why we like being regulated by the Fed.

With respect to the point about moral hazard, I agree with every single comment made except the last one: the problem with bonds is that you can't get all of these bondholders together and compel them to do something. That is not the problem with bond financing. On the contrary, that is the *benefit* of bond financing. It is precisely because of that feature that borrowers are going to think very carefully before defaulting. It prods them to put themselves in a position not to default in the first place. Up until now, banks have been quite unintelligent in the way that they have lent money. They have lent in such a way that allows them to be herded into a room and told what to do. I predict that won't be the case in the future. The commercial banking system is simply not going to make long-term, next-to-lender-of-last-resort commitments and loans to governments with clauses in them that don't allow the loan to be transferred. Instead, they're going to use liquid instruments with a secondary market, and therefore the nature of these instruments is going to be the same as that of bonds. Over time, this will be a market force leading to more virtuous behavior.

Can there be blips along the way? And can some countries completely default and be excluded from the markets? Yes, and it's happened to some countries already, Peru being one. And Peru came back fine. It was just very painful.

Discussion Summary

David Folkerts-Landau noted that the growth and functioning of derivative markets in the United States depends on the cooperation of the Federal Reserve. Through their provision of liquidity and in their smoothing of overnight rates, policymakers at the Federal Reserve are complicit in the growth of these markets. As evidence of this, Folkerts-Landau noted that the Bundesbank is not prepared to take such actions in the overnight markets, and, as a consequence, derivative markets in Germany are considerably smaller. He also noted that, consequently, maintaining a banking license in the United States is extremely important even if typical commercial banking functions are less important to financial institutions. *Peter Garber* concurred and asked whether the massive liquidity provided by the Fed should be priced more aggressively.

William McDonough agreed that because the U.S. dollar remains the major reserve currency, the actions of the New York Federal Reserve are crucial to the functioning of derivative markets and that these services are provided at a modest cost. He went on to highlight the major issues facing financial regulators today. While a number of industries have combined into the financial services industry, regulation is still fragmented in an anachronistic manner. In order to remedy this disjunction, McDonough proposed an umbrella supervisor that would regulate any institution that could create or reallocate risk. Such an umbrella supervisor would tailor capital requirements for a financial institution in the context of the specific business strategy and risk appetite of that institution. Such an approach would represent a step toward risk-based capital requirements. These decisions would be made on the basis of regular, detailed discussions with the CEOs of these institutions that would include discussions of capital adequacy and management succession. These umbrella regulators would need to be particularly firm when questions of integrity or the breakdown of internal control became apparent.

McDonough also noted that while financial services firms manage their books on a global basis, regulation continues to be segmented by legal jurisdiction. In a related vein, he considered the too-big-to-fail doctrine pernicious and suggested that any institution can be deflated. He noted, however, that such an approach requires a robust payments system to ensure the elimination of Herstatt risk. Efforts are under way that will result in the elimination within two years of such intraday settlement risk.

To the questions raised by Mervyn King's comments, *Andrew Crockett* responded that the emphasis on individual banks is still necessary because systemic risk is still a function of the risk of the individual institutions. He also noted that while risk exposure does extend beyond the banking sector, banks remain the key players and consequently must remain the center of supervision. Finally, Crockett noted that penalizing lenders who had made imprudent loans should be a central aspect of the resolution of these crises. *Garber* asked King specifically about the twenty-five suggested bank standards and their applicability in the emerging market context.

Mervyn King concurred with McDonough's emphasis on payments systems and settlement risk. Regarding the creation of umbrella supervisory agencies, he agreed that as the financial services industry expands, creating regulations that don't distort firms' incentives is a top priority. King noted, however, that the most important obstacle to such umbrella agencies is bureaucratic and political resistance from existing regulators reluctant to cede control. He also suggested that in order to meet the challenges of the changing industry, regulators must move from an emphasis on the specifics of regulations to more blue-sky thinking.

René Stulz alluded to the instructive example of Switzerland in considering the appropriate set of bank regulations. He speculated that Switzerland has

avoided major banking crises not because of better supervision but because of the absence of implicit or explicit guarantees in the banking system.

Nicholas Stern voiced concern that the current spreads on loans to eastern Europe may not fully reflect the existing risks in the region. He noted that the question for regulators is whether, and how, to voice such concerns. In particular, Stern asked whether it is appropriate for supervisory agencies to voice such concerns quietly or loudly, and privately or publicly.

Stanley Fischer responded that the moral hazard aspect of these crises, while receiving increasing attention, is often misunderstood. First, he rejected the notion that private lenders in the Thai crisis, whose losses may have been minimized by government actions, are an example of a moral hazard problem. By this criterion, Fischer noted that any countercyclical monetary policy would be characterized as creating a moral hazard problem. He stressed that the policy objective is to arrive at a sustainable exchange rate and avoid the deepening of the crisis. Second, Fischer noted that in contrast to bank lending to governments, bondholders are much more difficult to coordinate. Furthermore, the covenants of these bonds include legal penalties that made moratoria on payments very difficult to undertake. *Martin Feldstein* inquired about the nature of these penalties and what makes them so severe. *Fischer* responded that they include seizure of property and restrictions on international trade and payments.

King noted that the covenants referred to by Fischer are an example of the need for a multilateral approach through the G-7 or G-10. While no individual borrower could insist on the removal of such covenants in negotiations, a multilateral agreement would be the best way to approach this issue. Similarly, greater information disclosure should be a focus of multilateral efforts as no individual country would necessarily undertake such steps.

Regarding the ability of private markets to overcome crises, *Fischer* noted that any position that accepts that markets sometimes overshoot and that economies and firms suffer from hysteresis cannot then automatically accept the prescription that private markets can solve these problems alone.

With respect to the proliferation of derivatives, *Kathryn Dominguez* noted that it was puzzling that Japanese firms, who could have been hedging against yen appreciation, in fact did very little hedging. She noted that there is little debate about the benefits of derivatives in calm markets. Instead, the disagreement is about how they functioned during crises.

Roberto Mendoza responded that derivatives both redistribute and reduce risk exposures and cited the inclusion of catastrophic reinsurance contracts in AAA portfolios as an example of the risk-reducing nature of derivatives. He suggested that the performance of portfolio insurance during the 1987 crash was not an indictment of derivatives in general but rather of that particular application. He also suggested that the coordination problems of bondholders are precisely the reason countries will try to avoid default and, as such, are a positive development.