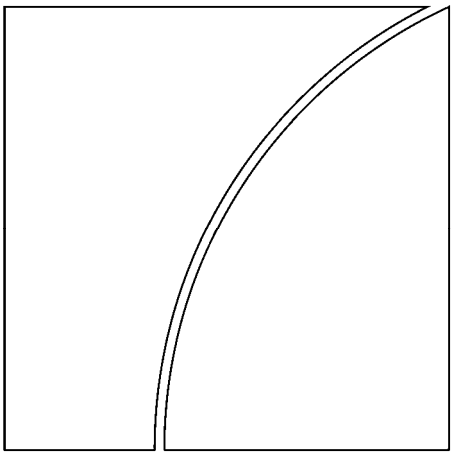
Committee on the Global Financial System



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Long-term issues in international banking

Report submitted by a Study Group established by the Committee on the Global Financial System

This Study Group was chaired by Hans-Helmut Kotz of the Deutsche Bundesbank

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Preface

In June 2009, the Committee on the Global Financial System (CGFS) held a series of roundtables with private sector participants to discuss the drivers and implications of the sharp decline in international banking activity since the intensification of the financial crisis in the second half of 2008. These discussions suggested that the severe strains faced by banks during this episode may lead to significant changes in their international operations.

In September 2009, the CGFS followed up on this initial exploration by launching a project to investigate a range of issues pertaining to changes in the organisation of international banking in response to the crisis. The report on long-term issues in international banking is the last in a series of three reports produced by this project. It was prepared by a Study Group that was established by the CGFS and brought together representatives from 15 central banks under the chairmanship of Hans-Helmut Kotz, formerly of the German Bundesbank.

The report documents general trends in the historical evolution of international banking, discusses various drivers of this evolution and examines the impact of international banking on financial stability and the macroeconomy. It also analyses possible future developments in cross-border intermediation, paying particular attention to the interplay between market- and bank-based activities. The report draws on and complements CGFS Report 37 on the functioning and resilience of cross-border funding markets (published in March 2010) and CGFS Report 39 on funding patterns and liquidity management of internationally active banks (published in May 2010).

Following the discussion of an initial draft by the CGFS in May 2010, the revised report was presented to central bank Governors at the Global Economy Meeting in June 2010, where it also received endorsement for publication. We hope that this report will inform the current debate on the future of international banking.

Mark Carney
Chairman, Committee on the Global Financial System
Governor, Bank of Canada

Contents

Executive summary

International banking has expanded markedly over the last 30 years. Its form and geographical coverage reflect two important aspects of the role international banks play in the global economy.

First, international banking has been an important component of a broader process of financial globalisation and integration. Historically, it has expanded in concert with international trade and has performed key functions for the business of international firms. In addition, the local operations of foreign banks have spurred the development of financial systems in emerging markets and helped to alleviate information problems via close and sustained customer relationships.

The demand for financial services from multinational corporations and rapidly growing emerging markets promises to shape international banking and its contribution to economic progress in the future. A shift of trade flows and multinational production towards emerging market economies may accelerate financial integration. This could result in both increased participation in these economies by foreign banks and greater international activity by locally headquartered banks. Thus, banks from emerging market countries may well play an increasingly prominent part in future cross-border consolidation in the financial sector.

Second, the role of international banks in the global economy is closely related to that of international financial markets. As they perform complementary functions, both forms of financial intermediation are indispensable, together with a resilient market infrastructure, for the healthy functioning of the financial system. Deep international capital markets often ease the funding strains of large corporations when bank credit contracts. By contrast, banks are the main source of external financing for households, as well as for small and medium-sized companies, whose access to credit markets tends to be restricted by asymmetric information issues.

Given that internationally active banks have helped to exploit the world's economic growth potential over long periods, it is important to analyse their business model in the light of the recent crisis. The crisis has highlighted deficiencies in the operations and risk management of many banks, as well as gaps in the regulatory environment. Such deficiencies facilitated the rapid transmission of shocks across the global financial system through internationally active banks.

There are signs that the fast growth of internationally active banks has contributed to the vulnerability of their business models. At least at the aggregate level, the large size of international banks' balance sheets is difficult to explain on efficiency grounds. Instead, evidence exists that international expansion was facilitated by the underpricing of risk, which might have distorted institutions' incentives. Burgeoning cross-border lending outpaced international trade growth in the early 2000s, raising questions as to whether the relationship between international banking and real economic activity has changed. Further investigation of this relationship is warranted.

The crisis has also underscored the urgency of a careful analysis of banks' international funding and liquidity management practices. As jurisdictions hosting foreign banks realised that they were exposed to risks generated in third countries, calls have been heard for a greater decentralisation of the international banking model. A more decentralised model – in which a greater portion of banking operations is funded, managed and supervised in the same location – could reduce the risk of adverse shocks spilling across national borders. However, such a model would also make economic agents more dependent on local economic and financial conditions and could hinder the efficient flow of funds across borders.

The future prudential framework will need to induce banks to strengthen their risk management without hobbling their contribution to global welfare. An important objective of this framework is to ensure a level playing field that promotes growth by fostering competition

among international banks. At the same time, strong capital and liquidity buffers, together with incentives to rely on stable funding sources, should enhance the resilience of banks' balance sheets by limiting the possibility that competitive pressures encourage excessive build-ups of cross-border or local risks. To that end, the prudential framework will need to rely on international cooperation that seeks to forestall cross-border regulatory arbitrage and treats similarly entities with similar functions in the global financial system.

1. Introduction

Many internationally active banks played a central role in the recent financial crisis. Trading positions held in different parts of the world facilitated the spillover of financial distress across borders. In particular, losses on international exposures put significant pressure on some banks' capital and access to funding. Meanwhile, difficulties in managing cross-currency maturity mismatches helped to transmit liquidity strains across countries and markets. Moreover, country-specific responses to the crisis highlighted, both for international banks and for regulatory authorities, the challenges of managing cross-border financial exposures.

This experience showed that economic and financial stability cannot be assured without a proper understanding of the drivers and effects of international banking. On the one hand, the crisis has had a damaging effect on the real economy. As the financial system came under stress, the sharp drop in interbank flows severely undercut the financing of international trade and contributed to a widening negative output gap, especially in the United States and western Europe.

On the other hand, international banking has contributed to welfare gains over time and across countries. International banks have been key players in global integration as they followed their domestic customers abroad and helped to accelerate the growth of new markets in emerging economies. The demand for banking services from multinational companies and fast-growing emerging markets promises to underpin the future of international banking and its contribution to economic progress. In addition to extending financial services, banks have a key role to play in promoting the cross-border transfer of best practice and technological know-how.

International banking is likely to continue growing in line with further economic integration, but questions have been raised as to the limits of such growth. Underpricing of financial risks before the recent crisis led to high leverage, as well as opaque and illiquid exposures, in both the foreign and domestic components of many bank balance sheets. These exposures proved hard to manage at a time of stress. More generally, growth in cross-border lending over the last decade has outpaced that of international trade, suggesting that the relationship between international banking and real economic activity may have changed.

The cross-border structure of the funding and management of international banks may also be subject to change. Deeper, more sophisticated financial markets led banks to rely increasingly on wholesale funding and to accept cross-currency funding risks. These trends exposed banks, as well as their creditors and borrowers, to the risk of sudden reversals in funding flows. They also made host jurisdictions vulnerable to financial problems originating in third countries. Two recent reports, CGFS (2010a) and CGFS (2010b), have discussed the functioning of cross-border funding markets and trends in international bank funding and liquidity management.

The role of financial sector consolidation may also change. Several years before the recent crisis, the G10 (2001) had predicted a trend towards globally active universal financial service providers and greater functional specialisation among financial firms. This trend and its international dimension may now stop or even reverse as market participants and authorities change their perceptions of the risk/benefit trade-off embedded in some financial business models.

Finally, recent experience has underscored the joint role that banks and markets need to play in stabilising the financial system at a time of distress. Over the years, banks and markets have become increasingly integrated. Performing largely complementary functions, the two forms of intermediation have helped to diversify financial services and the financial system. By extension, the simultaneous healthy functioning of both markets and banks is crucial for the future resilience of international intermediation.

As the recent crisis unfolded, the complementarity of markets and banks became hard to miss. International securities markets did pick up some of the demand for credit that deleveraging banks could not accommodate. This was only a partial solution, however, as companies that could provide detailed financial information benefited more than borrowers with asymmetric information issues. When they are healthy, banks can deal with such issues better than markets do, thanks to their close customer relationships and long-term local representation. The resilience of banks – underpinned by a resilient market infrastructure – is particularly valuable at times of stress, as they can alleviate the problem that "some information is not easily transferable or 'marketable' [...] (being) hard to codify, often tacit in nature" (Stiglitz and Greenwald (2003)).

In an attempt to delve into issues of international banking from a broad perspective, this report[1] first asks: *What has happened?* The question relates to how international banking has evolved over the last 30 years in terms of its size, form and geographical coverage. In documenting this evolution, the report makes heavy use of the BIS international banking statistics, which include breakdowns of banks' positions by currency and counterparty, both on a consolidated and on a residency basis. The report's second question is: *Why did it happen?* This leads to a critical review of the literature on the various drivers of international banking. Finally, the report tackles the third, more speculative question: *What could happen next?* It pays particular attention to the regulatory reform environment, the pattern of economic growth worldwide and the rapidly evolving interactions between markets and banks.

The rest of the report is organised as follows. Section 2 reviews general trends in the historical evolution of international banking. Section 3 discusses various macro- and microeconomic drivers of this evolution. Section 4 examines the impact of international banking on financial stability and the macroeconomy. The last section analyses possible future developments in cross-border intermediation, paying particular attention to the interplay between market- and bank-based activities in the medium term.

2. Trends in international banking

Questions about the role of international banks are not new. Banking has played an integral part in international economic integration throughout history.[2] Yet the internationalisation of banking has proceeded more by fits and starts than in a steady progression. International banking underwent waves of strong expansion in the second half of the 19th century and between 1960 and 1990. Most recently, it underwent a major transformation after the wave of financial liberalisation in the early 1980s.

The discussion in this section is in three parts. First, a working definition of international banking is provided. Second, major developments in the size, form and geographical distribution of international banking activities from 1980 to 2009 are documented. Third, the interaction between bank- and market-based international intermediation is reviewed.

2.1 Definition of international banking activities

In this report, we define international banking as intermediation activity that falls into one of the following categories. The extension of credit by a bank headquartered in a particular

[1] See the annex for the list of study group members.

[2] See Jones (1990) and Herrero and Navia Simón (2003)

country to residents of another country can occur via: (i) cross-border lending; (ii) local lending by affiliates established in the foreign country; or (iii) lending booked by an affiliate established in a third country (eg an international financial centre). In addition, the BIS international banking statistics on a residency basis include the extension of credit by a bank headquartered in a particular country to residents of the same country but in a foreign currency. The underlying financial instruments could be loans, deposits or securities as well as derivatives contracts and contingent facilities.[3]

In order to illustrate different forms of international banking, we consider the case of a bank that is headquartered in Switzerland and lends to a borrower located in the United States. Table 1 provides a non-exhaustive list of six examples of how the lending could be extended. In examples 1 and 2, the funds are raised in Switzerland by taking deposits from Swiss residents, and then lent to the United States, either cross-border or through a local affiliate. In example 3, a depositor in the United States places funds in a Swiss bank in Switzerland that then lends cross-border to an entity in the United States. Such round-tripping also qualifies as international banking.

Table 1

How a Swiss bank could fund a loan to a US borrower

Example	Residents of Switzerland			Cross-border	Residents of the United States		
1	Saver	Deposit →	Head office	Loan→		→	Borrower
2	Saver	Deposit →	Head office	Deposit→	Bank affiliate	Loan→	Borrower
3			Head office	←Deposit Loan→		← →	Saver Borrower
4					Bank affiliate	←Deposit Loan→	Saver Borrower
5	Saver	→		Deposit→	Bank affiliate	Loan→	Borrower
	Residents of Germany		**Cross-border**	**Residents of the United Kingdom**	**Cross-border**	**Residents of the United States**	
6	Saver	→	Deposit →	Bank affiliate →	Deposit →	→	Borrower

The last three examples illustrate forms of international banking that have gained in importance over the years. Example 4 illustrates what is sometimes referred to as global banking: funds are raised in the United States by the US affiliate of a Swiss bank and lent by the same affiliate locally to borrowers in the United States. Example 5 illustrates another variant of global banking, where the funds are raised in the country where the bank is headquartered but the depositor rather than the bank bears the transfer risk. Finally, example 6 illustrates the use of an international banking centre in order to raise funds and then extend a loan in two different countries, neither of which is the country in which the bank

[3] Because of data constraints, we abstract from asset management activities in this report.

is headquartered. Most international banking transactions are variations on these examples and often also involve routing through an offshore centre in the Caribbean or Asia.

2.2 Major trends in the historical evolution of international banking

Economic historians distinguish three "waves" that led to the development of modern international banking.[4] The first wave, which started in the 1830s, was spurred by the underwriting securities business performed in the second half of the 19th century by JPMorgan, Lehman Brothers and Goldman Sachs. These firms helped finance US railroads, as well as states and municipalities, by selling the underwritten securities in London to European investors. The second wave, starting in the 1960s and lasting three decades, was mainly related to international banking transactions among developed countries. The third wave began in the second half of the 1990s. Like the first wave, it was associated with a concentration of branches and subsidiaries in developing countries. In comparison with earlier waves, it has been more oriented towards retail business.

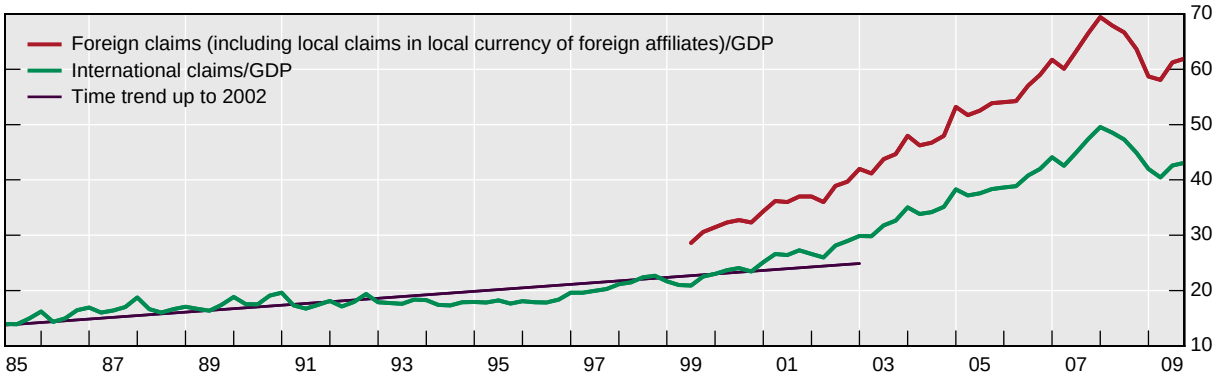
2.2.1 The rise of international banking since the 1980s

International banking activity, after growing strongly in the past decades, further accelerated in the years before the financial crisis. Measured by the expansion of cross-border lending and the local claims of foreign banks, the scale of international banking changed dramatically between 1985 and 2009 (Graph 1). Total international bank lending as a share of GDP – a proxy for the globalisation of banking activity – rose gradually (by 4% annually) from the mid-1980s to the early 2000s, before accelerating sharply in the years that followed. The measure almost doubled between 2002 and 2008 and, even though its growth was interrupted by the recent financial crisis, it still remains near peak levels.

Graph 1

Ratio of banks' international positions to global GDP[1]

In per cent



[1] The series are based on current exchange rates vis-à-vis the US dollar. International claims comprise cross-border claims and local claims in foreign currencies. Foreign claims comprise cross-border claims and local claims in all currencies. Inter-office accounts are excluded.

Sources: IMF, *World Economic Outlook Database for World GDP*; BIS international banking statistics.

Until the early 2000s, international lending activity closely tracked the expansion of international trade (Graph 2). The rapid rise in international trade activity, with worldwide

[4] See Jones (1990) and Herrero and Navia (2003).

exports of goods and services accounting for an ever increasing fraction of the world economy, reflects an increasing level of real economic integration.

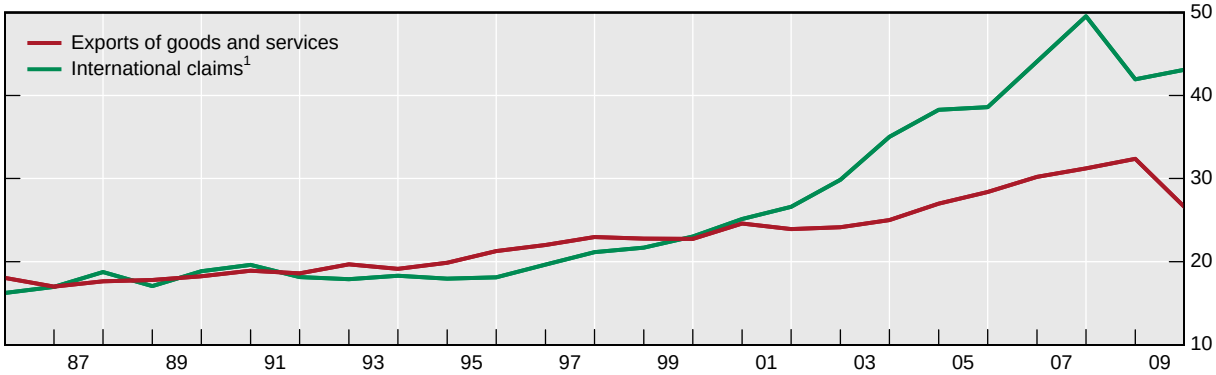
After the early 2000s, by contrast, international banking activity has expanded much faster than trade. One possible explanation is that trade does not fully capture real economic integration. For instance, an international expansion of corporations via foreign direct investments (not in the graph) may have led to an acceleration of international banking.

Another explanation is that the character of the expansion of the international component of financial firms' balance sheets has changed. Indeed, intermediation chains in international finance seem to have lengthened in the past decade, for instance with the emergence of risk transfer and securitisation markets (discussed below). Thus, the recent acceleration in the growth of international banking activities might signal a divergence between real and financial integration.

Graph 2

Ratio of international trade and banks' international claims to global GDP

In per cent



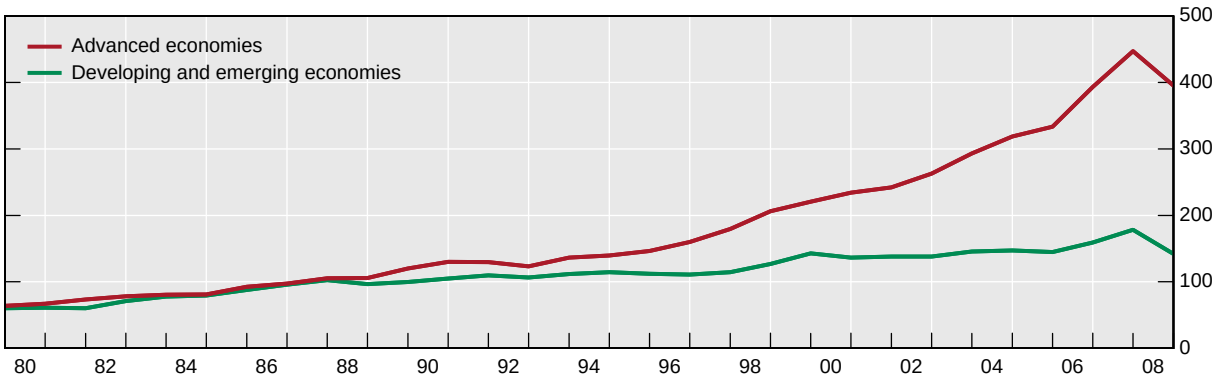
[1] The series are based on current exchange rates vis-à-vis the US dollar. Foreign claims comprise cross-border claims and local claims in all currencies. Inter-office accounts are excluded.

Sources: IMF, *World Economic Outlook Database for World GDP*; BIS international banking statistics.

International banking activity is an important component of a broader process of financial globalisation and integration. The acceleration of financial globalisation and integration is illustrated in Graph 3 on the basis of a measure developed by Lane and Milesi-Ferretti (2007). This measure is constructed as the sum of country stocks of external assets and liabilities relative to GDP. Overall, international financial integration has accelerated since the mid-1990s in the industrialised countries, rising more gradually in the rest of the world. Other indicators of financial structure growth and composition, as detailed in Beck and Demirgüç-Kunt (2009) for example, show a deepening of both financial markets and institutions in the past decade. In the run-up to the recent crisis, this apparent deepening manifested itself in low net interest margins, rising profitability and, in retrospect, declining stability in the banking sectors of high-income countries. A key question is how this process has affected the contribution of international banking to real economic activity (see Section 4 below).

Graph 3

International financial integration, 1980–2008[1]



[1] Ratio of foreign assets and liabilities to GDP.

Source: Lane and Milesi-Ferretti (2007) – updated version of Figure 3 "International financial integration, 1970–2004" with the lines representing the ratio of the sum of foreign assets and liabilities to GDP.

2.2.2 Regional composition of international banking activity

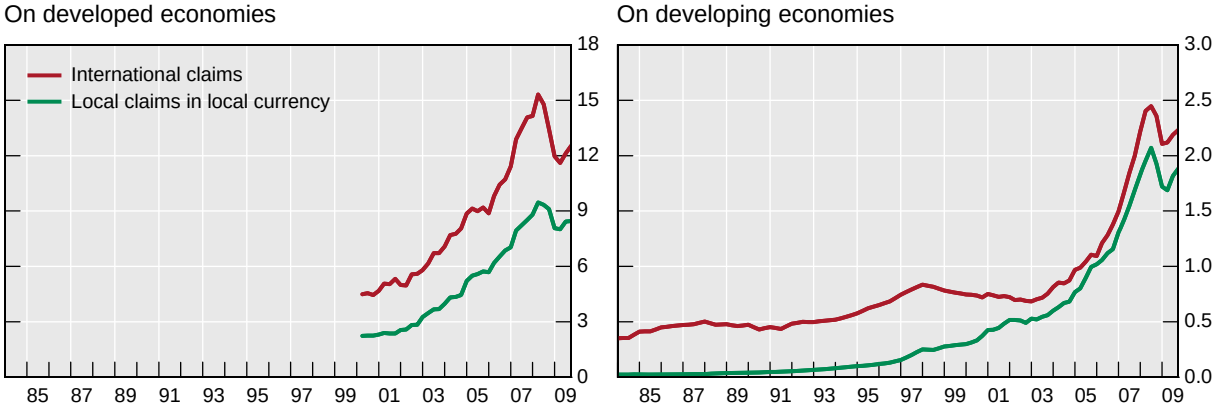
Not surprisingly, international bank claims on developed countries far exceed such claims on developing economies (Graph 4). Concretely, overall volumes vis-à-vis developing countries are less than one fifth of those applying to developed countries. Claims on developing economies have moved from a flat trajectory through the late 1990s to a more accelerated rate since then.

The international lending by banks in BIS reporting countries exhibits a clear geographical pattern. Graph 5 shows that industrialised Europe has been the primary destination for cross-border lending activity for the past three decades. The United States is the second largest destination, followed by other developed countries in the period since 1990. In the past decade, outstanding stocks of lending to offshore centres have been comparable to or even greater than lending to entire regions, for example to Asia and Pacific countries, emerging Europe, or Latin America.

Graph 4

International bank claims and local claims in local currency[1]

In trillions of US dollars



[1] The series are based on current exchange rates vis-à-vis the US dollar. International claims (red line) comprise cross-border claims and local claims in foreign currencies. Inter-office claims are excluded.

Source: BIS consolidated banking statistics (immediate borrower basis).

Box 1

Data used to assess trends in international banking

The bulk of our empirical discussion focuses on the 1980–2009 period and relies on two data sources. One is the international banking statistics collected by the BIS from participating countries, which come in two general forms: the BIS locational banking statistics and the BIS consolidated banking statistics. The main difference between these two databases is that the first tracks flows on a residency basis (and thus includes flows between offices of the same banking group) whereas the latter takes banks' consolidated balance sheets as the unit of reporting. In addition, the consolidated statistics provide data since 2005 organised on an ultimate risk basis and a longer history of data on an immediate counterparty basis, while the locational statistics are on an immediate borrower basis only. The data are particularly valuable for understanding the international composition of bank claims and derivative positions. However, these statistics do not directly provide similar levels of insights on the composition of the liabilities side of bank balance sheets.

An important feature of the BIS international banking statistics is that they deliver measures of *worldwide* foreign exposures only from 1999 onwards (see Graph 4). Until 1999, the BIS collated only exposures to countries outside the group of industrial reporting countries. Following the Asian financial crisis of 1997–98, the statistics underwent a major improvement. Since a lack of transparency was frequently cited as a factor contributing to the crisis, a concerted effort was made to improve the timeliness, frequency and geographical coverage of the consolidated statistics. Another reason for the expansion of the statistics stemmed from the broad expansion of banks into foreign markets through financial sector foreign direct investment, which accelerated through the 1990s.[1]

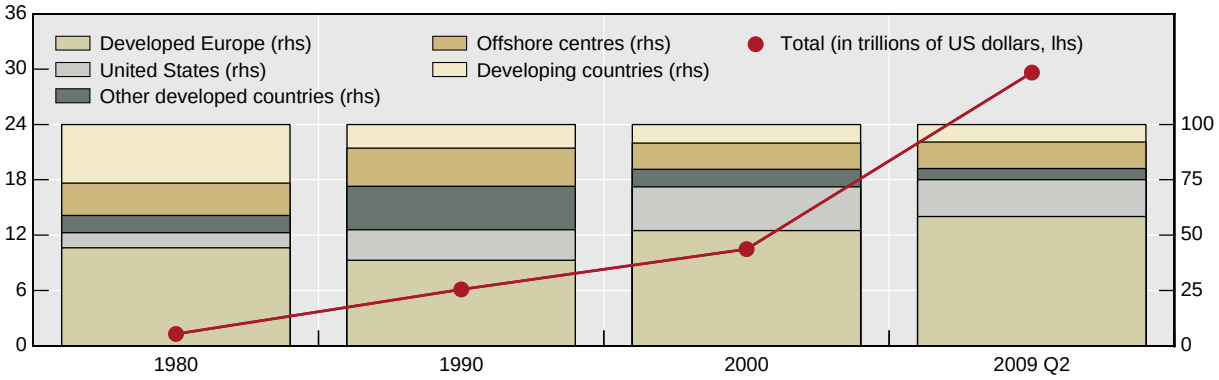
For other windows into trends in international banking, we use the Financial Development and Structure Database of the World Bank. Unlike the BIS statistics, which incorporate data aggregated at the level of a national banking system or reporting country, the World Bank database comprises bank-specific data within and across a broad spectrum of countries, allowing the structure of bank funding and concentration to be explored (Beck and Demirgüç-Kunt (2009)).

[1] See Committee on the Global Financial System (2004 and 2005).

Graph 5

Location of borrowers of cross-border claims

As a percentage of the total



Source: BIS international locational banking statistics.

The importance of international activity differs across banking systems. As shown in Table 2, European banks collectively account for between half and more than three quarters of international lending to regions around the world. De Haan et al (2009) have argued that the large weight of European banks in cross-border activities reflects these banks' low level of home bias. Indeed, both in equity and in bond markets the home bias of European banks has been smaller than that of banks in any other region.

From the host countries' point of view, one measure of financial integration is the rate of foreign bank participation in lending to their residents. This indicator is plotted in Graph 6. In the aftermath of the crises of the mid-1990s, the share of foreign banks in credit to non-bank residents rose from almost 30% to nearly 50% in Latin America, before stabilising at about 45%. In emerging Europe, this share has expanded to nearly 90%, driven almost entirely by lending from banks headquartered in developed Europe. Foreign bank presence is closer to 30% for the European Union and the United States, and remains at lower levels in emerging Asia and Japan.

Table 2

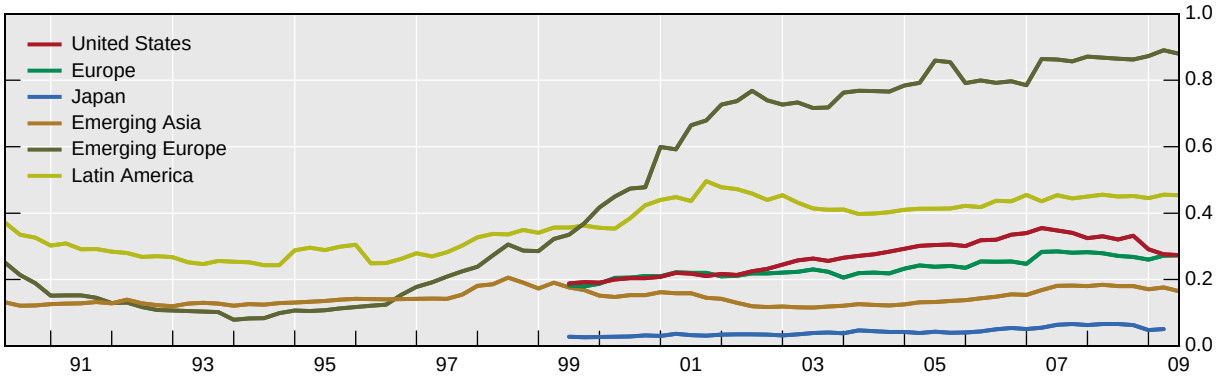
Location of foreign claims by nationality of reporting banks

		Foreign claims	French banks	German banks	UK banks	Swiss banks	European banks	Japanese banks	US banks	Other banks
Borrowers in:		USD billions	In percentages							
All countries	2000	9,018	8.8	20.7	11.8	10.7	73.8	12.9	8.2	5.1
	2006	23,072	11.3	15.4	13.4	10.7	80.0	8.1	5.8	6.1
	2009/Q2	26,688	13.4	13.0	13.8	6.8	74.9	8.9	9.7	6.5
(a) Developed countries	2000	6,997	9.1	22.8	10.2	12.8	75.8	12.6	6.7	5.0
	2006	18,455	12.1	16.3	12.2	11.5	82.1	7.5	4.4	6.0
	2009/Q2	20,548	14.5	14.0	12.6	7.3	76.3	8.7	8.6	6.4
(a-1) European developed countries	2000	4,102	9.8	26.0	7.3	8.6	79.8	9.1	8.2	2.8
	2006	11,189	12.3	19.3	8.1	6.8	85.3	5.7	5.8	3.2
	2009/Q2	13,117	15.3	16.2	8.3	5.0	80.3	6.1	10.1	3.5
(a-2) United States	2000	2,221	7.1	17.2	13.4	20.3	69.3	21.4		9.2
	2006	5,803	11.4	12.2	18.5	20.4	79.3	11.7		9.1
	2009/Q2	5,454	12.5	11.0	22.2	12.8	73.5	15.9		10.6
(b) Offshore centres	2000	779	7.1	11.0	24.9	4.4	59.6	25.1	9.1	6.2
	2006	1,756	8.4	12.2	22.4	10.7	66.1	19.5	7.3	7.1
	2009/Q2	2,051	7.9	10.1	24.1	8.0	60.5	19.0	12.8	7.7
(c) Developing countries	2000	1,180	8.0	15.0	10.9	3.0	70.0	7.5	17.4	5.1
	2006	2,804	8.5	10.6	15.6	5.2	75.0	4.8	13.9	6.3
	2009/Q2	4,005	10.7	9.2	14.9	3.7	75.2	5.0	13.5	6.3
(c-1) Africa & Middle East	2000	142	21.2	18.9	18.4	4.8	79.8	6.7	10.7	2.8
	2006	344	20.1	11.8	36.4	4.7	84.6	3.6	8.4	3.4
	2009/Q2	543	22.7	9.6	35.6	3.9	84.2	4.7	7.8	3.2
(c-2) Asia & Pacific	2000	345	8.9	12.8	16.3	3.2	52.6	18.4	18.2	10.7
	2006	892	7.2	9.3	23.8	7.6	58.1	10.4	19.5	12.0
	2009/Q2	1,182	8.5	7.7	22.8	4.7	54.2	10.7	21.9	13.3
(c-3) Europe	2000	201	6.0	34.1	3.2	2.7	87.6	2.1	9.5	0.8
	2006	858	9.4	17.1	3.1	3.7	92.7	1.8	4.9	0.6
	2009/Q2	1,370	11.7	14.3	2.6	3.2	93.7	1.7	4.1	0.5
(c-4) Latin America & Caribbean	2000	492	4.3	7.6	8.1	2.3	72.1	2.3	22.1	3.5
	2006	710	3.4	4.0	10.5	4.2	70.1	2.1	20.4	7.4
	2009/Q2	911	4.8	3.1	10.8	3.0	69.2	2.8	20.0	7.9

Source: BIS consolidated banking statistics (ultimate risk basis).

Graph 6

Foreign bank participation[1]



[1] Consolidated lending by foreign banks, as a share in the total bank lending to non-banks residing in a given country or region.

Sources: IMF; BIS International banking statistics.

A consistent theme throughout the history of international banking has been the importance of international financial centres. Since the 19th century, internationally active banks have sought a London branch. The trend has strengthened since the 1960s, as New York and various offshore centres (mainly jurisdictions that specialise in hosting cross-border operations of foreign banks) also became key locations.

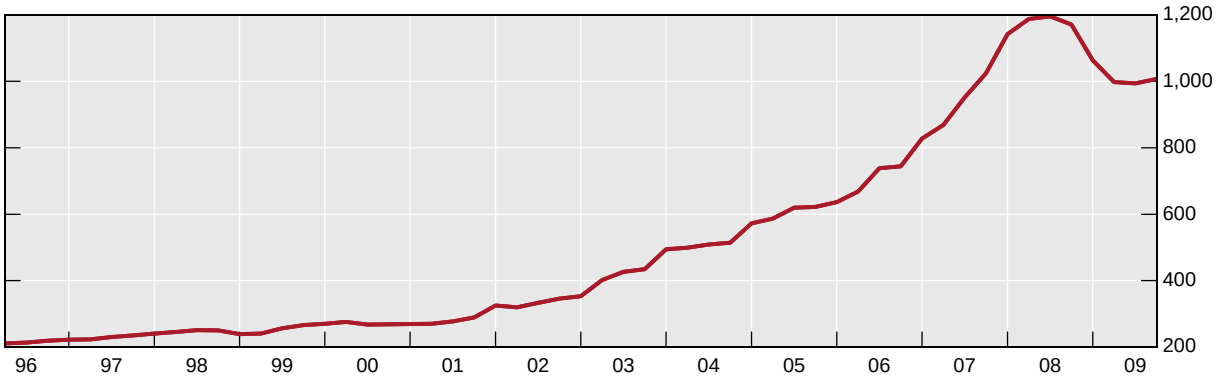
The size of international banking operations channelled through offshore centres is illustrated in Graph 7. Total deposits in offshore centres have increased sixfold since 1996, with their value rising from just over USD 200 billion in 1996 to almost USD 1.2 trillion in 2008, before dipping in the financial crisis. The 2002–08 period, already identified in Graph 3 as a period of accelerated financial integration, also saw the most rapid expansion of offshore activity.

As overall international banking has grown faster than the global real economy, the growth of financial activity in offshore centres has outpaced that of domestic GDP (Table 3). The median ratio of loans from non-resident banks to GDP in offshore centres has more than doubled between 1996 and 2006. At the same time, offshore bank deposits have also more than doubled as a share of domestic bank deposits. The differences across countries, as reflected in the gap between the minimum and maximum values, are large but relatively stable over time.

Graph 7

Offshore financial centre deposits[1]

In billions of US dollars



[1] Based on current exchange rates vis-à-vis the US dollar. Vis-à-vis Aruba, the Bahamas, Bahrain, Barbados, Belize, Costa Rica, Cyprus, Dominica, Grenada, Hong Kong SAR, Ireland, the Isle of Man, Lebanon, Luxembourg, Macao SAR, Malta, Mauritius, Panama, St Vincent and the Grenadines, Samoa, the Seychelles, Singapore, Switzerland and Vanuatu.

Source: BIS locational banking statistics.

Table 3

Activity in offshore banking centres

	Ratio of			Ratio of		
	Loans from non-resident banks (amounts outstanding)			Offshore bank deposits		
	to			to		
	GDP			Domestic bank deposits		
	1996	2000	2006	1996	2000	2006
Median	0.48	0.86	1.06	0.32	0.48	0.78
Mean	4.09	2.86	3.19	1.4	1.39	3.2
Minimum	0.01	0.02	0.09	0.09	0.11	0.11
Maximum	36.77	34.17	35.39	9.39	8.51	21.05

Aruba, the Bahamas, Bahrain, Barbados, Belize, Costa Rica, Cyprus, Dominica, Grenada, Hong Kong SAR, Ireland, the Isle of Man, Lebanon, Luxembourg, Macao SAR, Malta, Mauritius, Panama, St Vincent and the Grenadines, Samoa, the Seychelles, Singapore, Switzerland and Vanuatu.

Sources: IMF, *International Financial Statistics*; World Bank, *Financial Development and Structure Database*; BIS international locational banking statistics.

2.2.3 Forms of expansion and evolving strategies of international banks

The composition of international banking flows has changed markedly as they have expanded. Bank credit to non-banks has been increasingly extended by local affiliates of foreign banks in preference to cross-border lending. At the same time, the importance of cross-border interbank lending and offshore centres has also grown. Finally, the structure of internationally active banks' aggregate balance sheets and off-balance sheet activities has changed in a major way.

These changes are associated with two broad trends in the strategies of international banks. The first trend has been foreign expansion through direct investment in the banking systems of developing countries since the mid-1990s (CGFS (2004)). Indeed, banking systems in central and eastern Europe and many Latin American economies are now mostly foreign-owned. Since the establishment of foreign banks' local affiliates has been followed by a rapid expansion of local balance sheets, the relative importance of cross-border claims on emerging market economies has declined. Reflecting the often retail-oriented strategies of foreign banks in these economies, the share of non-bank private sector borrowers has grown from about 25% to more than 60% of total claims in the 1985–2009 period. Public sector borrowers now represent only 15% of total international claims on developing countries, down from more than 40% two decades ago.

The second trend can be characterised as a rapid expansion of activities in wholesale markets, including securities and derivatives markets as well as interbank transactions. Several changes in the structure of bank balance sheets reflect this broad trend. First, the increased reliance on capital market funding has manifested itself in the growing importance of non-banks as counterparties in banks' liabilities over the last 10 years (Table 4). Moreover, the growing share of foreign affiliates in banks' liabilities reflects an active use of major financial centres and offshore markets as funding sources.

On the assets side, the evolution of the sectoral distribution of international claims is striking. Among developed countries, the largest change over time is the increased share of bank borrowers and the declining share of public sector borrowers. The share of claims extended to the non-bank private sector has been relatively stable, at almost 45% of total claims.

The maturity structure of international claims has evolved in different ways across borrowing regions and counterparty types (Table 5). The effective maturity of claims on residents of industrialised countries has shortened, with the share of maturities up to one year rising from less than 40% in 1985 to more than 50% in 2000, before slipping back to 44% in 2009. In comparison, claims on developing countries have exhibited a more stable maturity structure. Both the short- and long-term loan shares hovered at around 40% of outstanding claims over the sample period.

Finally, the off-balance sheet transactions of international banks have grown rapidly. In the BIS banking statistics, these fall under “other exposures”, which capture international positions in derivatives contracts, guarantees extended and credit commitments (Table 6, column 1). The derivative positions are the “net value of derivatives”, including derivatives used to hedge balance sheet positions, but not derivatives used for proprietary trading. Since 2005, when these data became available, the growth of “other exposures” in international banking has outpaced the growth in local claims and cross-border claims. The data show that US banks were responsible for the largest growth in amounts of guarantees extended and credit commitments, while UK banks accounted for the growth in derivatives contracts. These activities grew more slowly for Japanese, German and Swiss banks.

Table 4

Gross international positions
(in per cent)

Assets vis-à-vis developed countries (shares)	1985	1990	2000	2006	Q3 2009
Related foreign offices	21.1	27.2	30.4	26.4	27.4
Other banks	47.3	44.4	32.1	32.2	30.7
Non-banks	31.6	28.4	37.5	41.3	41.8
Liabilities vis-à-vis developed countries	1985	1990	2000	2006	Q3 2009
Related foreign offices	22.1	26.1	31.3	30.0	30.5
Other banks	53.8	46.6	34.9	34.7	32.2
Non-banks	24.1	27.3	33.9	35.3	37.3
Asset vis-à-vis developing countries	1985	1990	2000	2006	Q3 2009
Related foreign offices	–	–	9.8	8.3	10.3
Other banks	–	–	52.2	39.7	43.9
Non-banks	–	–	38.0	52.0	45.9
Liabilities vis-à-vis developing countries	1985	1990	2000	2006	Q3 2009
Related foreign offices	–	–	4.9	10.8	11.7
Other banks	–	–	41.4	42.0	43.6
Non-banks	–	–	53.8	47.2	44.7

Source: BIS international locational banking statistics (nationality basis).

Table 5

Decomposition of international claims on destination markets

By maturity structure					
Vis-à-vis developed countries (shares)	1985	1990	2000	2006	Q3 2009
Up to and including one year	38.5	43.9	52.0	48.4	43.7
1–2 years	6.3	9.0	3.4	3.8	4.9
Over two years	46.9	40.2	24.0	28.7	32.8
Unallocated	8.3	6.8	20.7	19.1	18.7
Vis-à-vis developing countries (shares)	1985	1990	2000	2006	Q3 2009
Up to and including one year	42.7	42.2	46.7	46.5	43.1
1–2 years	8.2	6.5	7.8	5.0	7.4
Over two years	39.9	48.2	38.1	35.4	40.1
Unallocated	9.2	3.1	7.4	13.2	9.3

Decomposition of international claims on destination markets

By counterparty					
Vis-à-vis developed countries (shares)	1985	1990	2000	2006	Q3 2009
Banks	19.5	30.4	41.6	40.9	35.6
Public sector	33.7	21.7	14.9	15.7	18.2
Non-bank private sector	41.4	45.1	43.3	42.7	45.6
Unallocated	5.3	2.7	0.2	0.6	0.6
Vis-à-vis developing countries (shares)	1985	1990	2000	2006	Q3 2009
Banks	28.8	31.8	26.3	27.6	22.1
Public sector	40.8	36.6	17.8	16.5	15.4
Non-bank private sector	25.9	29.5	55.8	55.2	62.0
Unallocated	4.4	2.1	0.1	0.6	0.5

Source: BIS consolidated banking statistics (immediate borrower basis).

Table 6

Cross-border claims, local claims and derivative positions

		Foreign claims	French banks	German banks	UK banks	Swiss banks	European banks	Japanese banks	US banks	Other banks
		USD billions	In percentages							
(a) Cross-border claims	2005/Q3	9,965	12.1	20.9	12.4	8.5	78.0	12.3	5.5	4.2
	2007/Q2	14,749	14.0	18.7	11.6	8.6	75.8	11.0	5.7	7.6
(b) Local claims of	2005/Q3	7,869	6.5	11.9	18.4	14.3	84.4	2.6	5.9	7.2
foreign offices in all currencies	2007/Q2	11,371	9.0	10.0	16.8	12.2	81.3	2.3	7.3	9.1
(c) Other exposures	2005/Q3	7,310	11.8	17.4	18.2	13.5	80.0	3.2	12.5	4.3
	2007/Q2	12,987	12.2	12.7	17.1	13.1	72.8	2.2	19.9	5.2
(c-1) Derivatives contracts	2005/Q3	2,083	8.2	26.4	19.0	15.4	89.2	1.2	5.2	4.4
	2007/Q2	2,635	9.0	26.6	23.1	13.1	89.3	1.1	4.3	5.3

"Other exposures" includes "Derivatives contracts", "Guarantees extended" and "Credit commitments".

Source: BIS consolidated banking statistics (ultimate risk basis).

2.3 Interaction between bank- and market-based international intermediation

It is widely recognised that bank-based and market-based activities perform complementary functions. Both are often inseparable aspects of financial intermediation that depend heavily on the resilience of market infrastructure. The same is true in the international dimension. For instance, banks invest retail deposits in foreign securities, lengthening the intermediation chain by involving markets. Or they issue debt in international markets to fund corporate loans and other assets. International banks' reliance on market-based funding increased at the beginning of the crisis as many of them had to fund the assets of off-balance sheet vehicles that they had taken onto their balance sheets. Conversely, markets rely on banks to alleviate issues arising from limited public information about financial counterparties, especially when these issues stem from international transactions. In addition, banks provide liquidity by engaging in market-making activities, providing credit lines or custodial services.

Financial frictions help underscore the functional differences between markets and banks and hence the circumstances under which each channel for intermediation may have a comparative advantage. Bank-based intermediation may offer risk-smoothing services – by maintaining, for example, a close link between prices and fundamentals – that financial markets cannot provide. Furthermore, long-term bank-client relationships may underpin the only source of credit when asymmetric information, moral hazard or financial frictions are particularly acute (Levine (1997), Allen and Gale (2000), Demirgüç-Kunt and Levine (2001), Arcalean et al (2007)). That said, bank-based intermediation could also be suboptimal if it is associated with excessive rent-seeking by banks, to the detriment of economic growth (Weinstein and Yafeh (1998)).

Market-based intermediation has a comparative advantage when diversity of opinion is important. An example in this respect is the venture capital market, often promoted as a way to finance and develop high-tech industries. Diversity of opinion also helps to distil information and embed it in prices, facilitating efficient resource allocation, particularly in high-technology R&D-type industries (Rajan and Zingales (2001)). In addition, markets may enhance the overall degree of corporate governance prevailing in a particular economy and facilitate risk management (Levine (2002)). At the same time, more developed financial markets may disproportionately promote the growth of industrial sectors that are relatively more in need of external finance (Rajan and Zingales (1998)). In addition, the market-based system is only accessible to larger companies and tends to be more volatile (Vitols et al (1997)).

The complementarity of banks and markets goes hand in hand with a deepening and widening of the network of bank-market relations. This is likely to improve risk-sharing. At the same time, however, the strong interconnectedness of institutions and markets may also enhance the propagation of shocks across borders. This raises the question of which institutions and markets should be included in the regulatory perimeter and highlights the need for international cooperation (Boot and Thakor (2009)). International cooperation should seek to restrain regulatory arbitrage by ensuring that banks and markets that perform similar functions receive similar regulatory treatment.

2.3.1 Long-term developments

Functional differences between banks and markets help to illuminate how the balance between bank- and market-based intermediation evolves in individual countries (or regions). When a country is at an early stage of its economic and financial development, it typically relies heavily on international sources of intermediation.[5] Since it is exactly in such

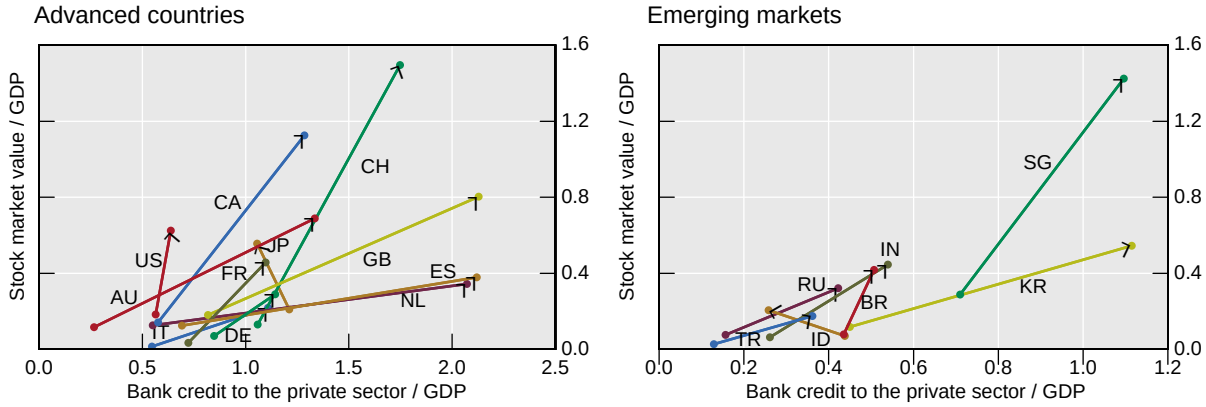
[5] Financial systems that are at an early stage of development are typically dominated by bank-based financial intermediation (Boot and Thakor (1997)).

circumstances that financial frictions – associated with transactions in different currencies, across jurisdictions and time zones – are most acute, banks are virtually the only source of financing. Banks have also proven more apt at dealing with such frictions by establishing local operations in foreign countries. As the country develops, it more easily gains access to international financial markets. Typically, the initial access is effected by issuing securities in a major (foreign) currency, which helps alleviate frictions. Then, later stages are associated with foreign direct investment and with the transfer of international know-how for the development of domestic markets.

Market-based intermediation and bank-based intermediation have generally expanded in parallel, although the pace of expansion has differed across countries (Graph 8). How this expansion has evolved depends on historical factors, technological innovations, monetary and fiscal policies, and specific legal and accounting systems. For instance, the banking systems in Japan and Germany still account for the majority of financial system assets. Roughly 80% of euro zone non-financial credit instruments are loans, while this share is close to 50% in the United States.

Graph 8

Stock market capitalisation and bank credit to the private sector[1]



AU = Australia; BR = Brazil; CA = Canada; CH = Switzerland; DE = Germany; ES = Spain; FR = France; GB = United Kingdom; HK = Hong Kong SAR; ID = Indonesia; IN = India; IT = Italy; JP = Japan; KR = Korea; NL = Netherlands; RU = Russian Federation; SG = Singapore; TR = Turkey; US = United States.

[1] The lines indicate changes from earlier observations (1980; for Spain, 1987; for the United Kingdom, 1986; for Brazil, 1995; for Turkey and Korea, 1988; for Hong Kong SAR, Indonesia and India, 1990; for the Russian Federation, 1998) to the latest (2009; for Canada, 2008).

Sources: IMF; Datastream; BIS calculations.

In the run-up to the recent crisis, the integration of bank and market financing was taken to a new level by the development of securitisation, structured finance and the enhanced use of risk transfer instruments. These innovations reduced market incompleteness, thereby facilitating the diversification of risk by banks and the efficient allocation of capital. However, they also increased banks' vulnerability. The opaqueness and illiquidity of many securitised products have contributed to banks' credit- and funding-related stress. For instance, substantial, albeit temporary, investor demand for securitised retail exposures allowed Swedish banks to rapidly expand their lending in the Baltic region without properly evaluating the associated credit risks. Similarly, as German banks financed investments in US securities with German retail deposits, they exposed themselves to large cross-currency funding risks.

2.3.2 Developments during the recent financial crisis

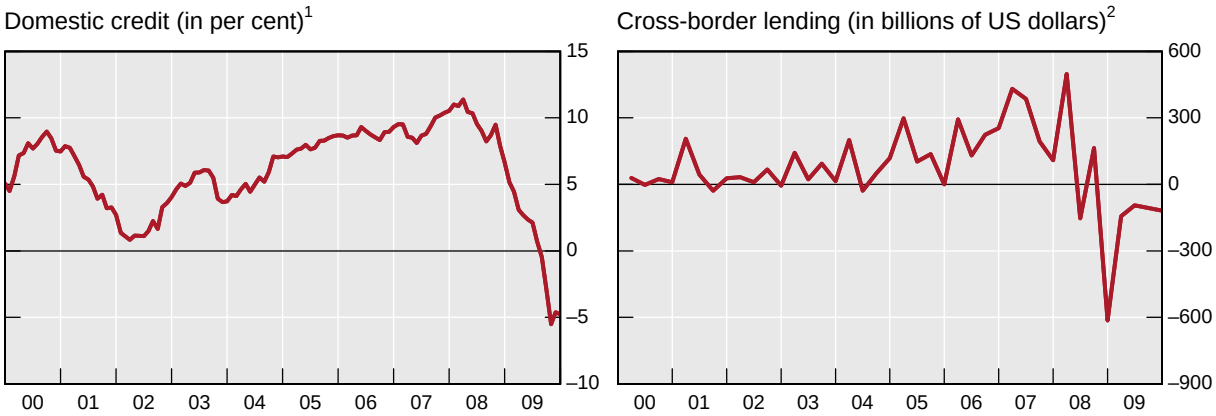
The financial crisis saw a significant shift in the level and composition of financing provided by international banks and markets. Three developments stand out. First, international bank finance fell sharply during the second half of 2008 and has remained subdued since.

Second, issuance in global securitisation markets collapsed. Third, partly in response to the contraction in bank-based financing, international bond issuance rose sharply.

Bank credit growth in the major economies has been strongly hit by the financial crisis. Domestic bank lending stagnated or even declined in the course of 2009, reaching very low levels in the fourth quarter. Likewise, cross-border lending fell substantially, possibly reflecting banks' retrenchment from non-core markets in a period of stress (Graph 9). At the same time, banks' local lending in the local currency of foreign jurisdictions was resilient, especially in emerging markets (CGFS (2010b)).

Graph 9

Domestic and international bank lending



[1] 2005 GDP-PPP weighted average of the year-on-year domestic credit growth rates in the euro area, Japan and the United States.
[2] Quarter-on-quarter changes in loans to non-banks, corrected for exchange rate effects.

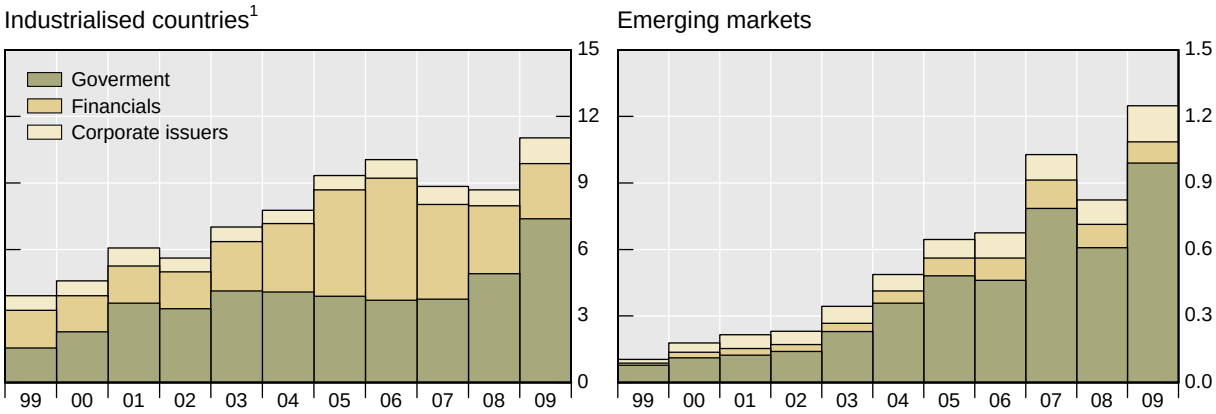
Sources: IMF; BIS international banking statistics; BIS calculations.

Bond markets were highly volatile during the crisis, plummeting in 2008 and surging in 2009. In the course of 2009, bond markets became a widely used source of funding. Record volumes in 2009 for both industrialised and emerging economies (Graph 10) reflected vigorous issuance by governments as a result of increased borrowing needs and falling tax receipts. More importantly, gross bond issuance by non-financial corporations surged in 2009 to almost USD 1.4 trillion for industrialised and emerging economies combined, an unprecedented figure in the history of corporate bond issuance.

Graph 10

Bond issuance, by type of issuer

In trillions of US dollars



[1] Inter alia, the United States, the euro area, Japan and the United Kingdom.

Source: Dealogic.

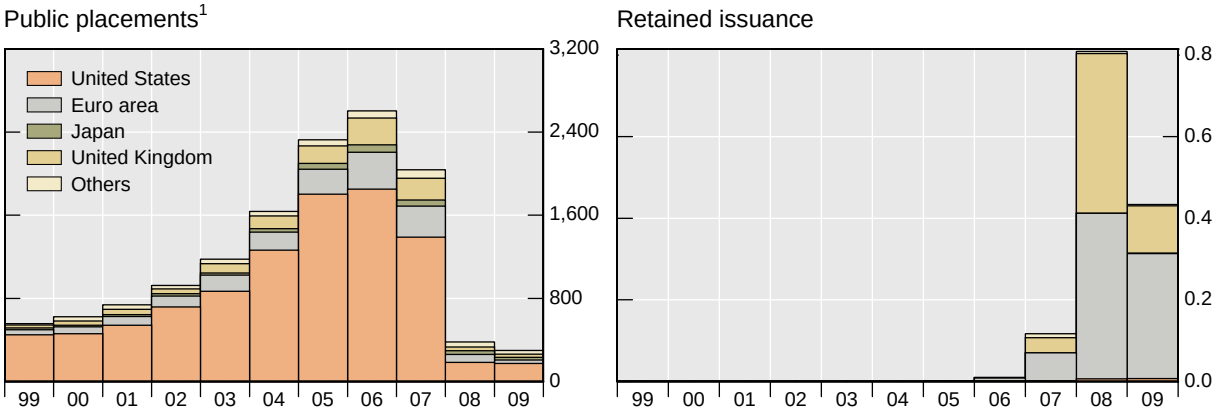
The collapse of securitisation markets, which precipitated the financial crisis, exemplifies the fragility of the balance between market- and bank-based intermediation. As regards market-based intermediation, rapidly growing information asymmetries caused market liquidity to evaporate as major deficiencies in the risk assessment and transparency of structured products came to light in 2007. As regards bank-based intermediation, banks were confronted with an unexpected expansion of their balance sheets, as loans they had originated could no longer be distributed in the market. Coupled with the drying-up of bank funding markets, this prevented banks from performing their market-making functions.

The crisis differently affected securitised public placements and retained securitisations. Public placements fell worldwide, with US-originated placements being the most severely hit (Graph 11, left-hand panel). Activity in this segment of global securitisation markets declined even further in 2009 from the already very subdued levels in 2008, without signs of a recovery. By contrast – owing to their acceptance as collateral in central bank liquidity-providing operations – retained securitisations saw extraordinary growth in 2007 and 2008 in the euro area and the United Kingdom (Graph 11, right-hand panel).

Graph 11

Global securitisation market

In billions of US dollars



[1] Securitisations issued by US agencies are not included.

Source: Dealogic.

3. Factors driving the internationalisation of banking

The internationalisation of banking reflects strategic management decisions. As at all private firms, a bank's main objective is to maximise shareholder value, often proxied by return on equity.[6] Banks that are successful in doing so have (i) maximised profits, via either an efficient management of costs or an increased volume of activities, and (ii) chosen a level of leverage that is optimal from the standpoint of equity holders. These firm-level decisions may be seen as the *proximate* drivers of expansion and contraction in international activities.

This section focuses on potential *ultimate* drivers: those aspects of the political, economic, regulatory and technological environment that affect (directly or indirectly) the conditions for

[6] In what follows, we will abstract from the fact that the separation of ownership and control may lead managers to pursue a goal other than profits. Some papers address this issue in the context of bank takeovers, finding that managers' utility maximisation is a motivation for M&A in banking (Palia (1993), Bliss and Rosen (2001), Hughes et al (2003), Rosen (2004), Gupta and Misra (2007), De Vincenzo et al (2005)).

profit maximisation. The section first discusses macro drivers – distinguishing between global developments and developments in banks' home and host countries – and then turns to micro drivers that are related to bank-level efficiency considerations.

The results of a survey on 34 internationally active European banks – reported in ECB (2008) – indicate that international expansion is mainly driven by the pursuit of new business opportunities, by higher profit margins and by incentives to follow existing customers abroad. Economies of scale and scope seem to play a smaller role. These results are broadly in line with those documented in the literature reviewed in this section.

3.1 The global macroeconomic, financial and regulatory environment

The liberalisation of international trade and capital markets has gone hand in hand with a dramatic increase in *economic integration* at the global level. Restrictions to foreign bank entry have been gradually eased by bilateral and regional trade and investment agreements. In particular, the General Agreement on Trade in Services addressed several issues regarding international banking by calling for a higher degree of openness to foreign banks among World Trade Organization members. [7]

The internationalisation of banking activity has followed naturally from, and has itself contributed to, this universal drive towards economic integration across countries. Global integration has opened the way for the international transfer of best practices in banking and for a more efficient use of resources.[8] At the same time, financial integration also facilitates the transmission of shocks across countries.

In the literature, there is a general consensus on the economic links between developments in the real sector and banks' international activities (Goldberg and Johnson (1990), Moshirian (2001), Focarelli and Pozzolo (2005)). First, banks have a natural incentive to follow their multinational non-financial customers. Second, globalisation goes hand in hand with an increase in the demand for bond and securities underwriting and M&A advice, which is a pull factor for international investment banks. Third, the increase in the number and size of multinational non-financial enterprises has also created a demand for very large loans, often managed as syndicated loans by pools of global financial institutions (Houston et al (2007)).

Technological advances have reinforced the impact of economic integration on international banking. By improving access to hard information on borrower or collateral characteristics, technology has enhanced the development of economic and statistical models, paving the way for broader access to bank credit, new forms of securities and improvements in risk management. The associated benefits have offset (at least partially) the costs of doing business in locations far from the head office.

Over the past 25 years, economic integration went hand in hand with *deregulation* and a trend towards international harmonisation of banking supervision and market infrastructure. By significantly reducing the costs of foreign operations, deregulation fostered international M&A, greenfield investment and the provision of cross-border financial services (Focarelli and Pozzolo (2005), Buch (2003), Buch and DeLong (2004), Buch and Lipponer (2007), Berger (2007)). The impact of eliminating cross-border differences in supervisory practices has been seen most clearly in Europe, where international banking picked up significantly after the "single banking licence" was introduced in 1989 (by the Second Banking Directive)

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[7] A notable example is the liberalisation process that took place in China after its WTO accession. Together with a steady improvement of the legal framework, this led to a rapid increase in foreign bank representation within the Chinese banking system.

[8] See CGFS (2004) for a discussion of the efficiency-enhancing effects of foreign bank entry into emerging market economies.

and EU member states implemented 27 directives under the Financial Services Action Plan (Kalemli-Ozcan et al (2009b)). Likewise, the creation of an efficient and uniform cross-border wholesale payment system (TARGET) has led to an integration of the euro area for wholesale activities. By contrast, the lack of such a payment system for retail activities has contributed to the fragmentation of retail banking within the euro area.

3.2 Conditions in home countries

The profit-maximising strategy behind banks' international activities is affected by, inter alia, economic developments and the regulatory environment in the home country. Thus, it should come as no surprise that the literature has identified relationships between domestic economic, financial and regulatory conditions and the size and form of banks' business abroad.

Conditions in home countries have helped explain different – both structural and transitory – features of international banking. For example, Schoenmaker and Van Laecke (2007) report evidence of a positive relationship between the degree of internationalisation of large financial institutions and indicators of economic development and financial sophistication in their countries of incorporation. By extension, these findings suggest that the relatively underdeveloped economic and financial environment in China lies behind the domestic focus of Chinese banks, which rank among the largest banks worldwide. In turn, McGuire and Tarashev (2008) show that shocks originating in home countries can explain short-term swings in cross-border lending by internationally active banks to emerging market economies.

A push factor, related to the degree of development of financial systems, has been the increasing competition among banks and between banks and other market players, eg money market funds (Gorton (2010)). This trend, which has accelerated over the last 25 years in mature systems, has put pressure on profit margins at home, encouraging banks to expand their customer bases abroad and stimulating financial innovation. The trend of international expansion was reinforced by the rise of securitisation, which has expanded banks' financing options by allowing them to match more closely the specific needs of different investors.

In some cases, *government policies* have also acted as a push factor for international banking. This might occur through deregulation that results in increased competition among domestic and foreign financial institutions or through restrictions in the home country, which banks attempt to avoid by redirecting part of their business abroad (Jones (1990)). For example, the regulatory environment and interest rate controls in Japan in the 1980s resulted in domestic banks routing a large portion of their lending to Japanese firms through international financial centres. Earlier, the rise of the eurodollar market in the 1950s stemmed from US government restrictions on interest paid on deposits within the United States and UK government restrictions on sterling lending by UK banks. Likewise, the establishment of subsidiaries abroad prior to 1999 allowed US banks to undertake investment banking activities they could not undertake in the United States. Evidence in support of this view is provided by Miller and Parkhe (1998), who find that restrictions on universal banking in the United States lead to a greater percentage of US subsidiaries (as opposed to branches) in host countries without such restrictions.

3.3 Conditions in host countries

When conducting business with or establishing operations in a foreign country, a bank takes into consideration two sets of factors. The first comprises the host country's growth prospects and its state of economic, political and legal development, as well as the openness and stability of its financial system. The second set of factors, which come into play because of

the interaction with other internationally active banks, relates to characteristics of the host country that may give particular banks a competitive advantage.

Economic growth prospects and financial and political stability considerations

As with any component of their business model, banks expand internationally in a way that allows them to find an optimal balance between return and risk. Thus, in order to satisfy investors' demand for a higher return on equity, banks tend to extend lending to countries that offer a high expected economic growth (see Herrero and Navia (2003) for a review of the related literature). In addition, revenue maximisation motives draw banks towards countries with a liberal, relatively developed and not too concentrated financial system (De Nicoló et al (2003) and Cull et al (2007)).

Empirical studies of risk management practices in international banking have found that macroeconomic and financial stability in host countries is an important driver for the extent and form of foreign bank lending. Currency risk has proven to be a key factor of cross-border banking, in both mature and emerging economies. For example, Kalemli-Ozcan et al (2009a) find that the elimination of currency risk increased banking activity within the euro area by 25%.[9] Likewise, Herrmann and Mihaljek (2009) provide tentative evidence that emerging economies that adopt relatively rigid exchange rates tend to attract greater inflows of bank credit.

Host country conditions seem to have influenced foreign banks' decisions as to whether to establish a branch or a subsidiary. This is the case even though the distinction between the two forms of international operations may be weakened by certain legal environments and reputational issues. The literature suggests that countries seen as carrying greater economic risks tend to attract subsidiaries of foreign internationally active banks, rather than branches. The reason is that subsidiaries allow banks to ring-fence any losses before they spill over to the parent institution. For its part, expansion through branches could imply better protection against political risk.[10]

The success of risk management practices hinges on proper risk assessment and, by extension, on high-quality information. It is thus not surprising that banks prefer to set up operations in jurisdictions where institutional arrangements facilitate risk assessment. In this context, a recent paper by Giannetti et al (2010) provides evidence that the existence of credit bureaus in a country increases the likelihood of international banks establishing branches there.

The literature has also identified specific host country characteristics that banks take into account with a view to keeping costs down. Specifically, there is evidence that higher corporate tax rates in a host country discourage banks from establishing local subsidiaries. Instead, banks exploit the legal status of branches in order to mitigate tax by opportunistically shifting profits across borders (Herrero and Martinez Peria (2007), Miller and Parkhe (1998) and Cerutti et al (2007)).[11] In addition, since non-bank non-resident deposits are sensitive to insurance arrangements, internationally active banks are more likely to establish local operations in countries with attractive deposit insurance regimes (Huizinga and Nicodeme (2002)).

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[9] This finding is corroborated, albeit indirectly, by data presented above in Table 2, namely that European banks, which operate quite heavily in the euro zone, have recently accounted for around 70% of banks' cross-border claims.

[10] See Herrero and Martinez Peria (2007), Cerutti et al (2007), Dell'Ariccia and Márquez (2010).

[11] Note that Dermine (2003) challenges this finding.

The evidence on whether host country restrictions are necessarily a deterrent to creating a local affiliate is somewhat mixed. In particular, banks whose expansion is motivated by restrictive home country regulations would be deterred by similar restrictions in the host country. That said, there is evidence that emerging market economies that have been successful in attracting foreign banks are those that have a relatively strong tradition of law and order, and sound institutional and supervisory frameworks (Focarelli and Pozzolo (2005), Papaioannu (2009), Buch and Lipponer (2007), Van Horen (2007), Claessens and Van Horen (2008)).

Comparative advantage considerations

The success with which a bank incorporates a host country's characteristics into its business model determines its comparative advantage vis-à-vis other internationally active banks. For example, countries with an underdeveloped institutional environment attract institutions that are used to operating in such an environment. This may explain the growing importance of banks from developing countries in other developing countries. An extreme example is sub-Saharan Africa, where more than 30% of foreign banks are from the same region (World Bank (2008)).

Likewise, from a bank's perspective, non-economic factors may shape the geographical distribution of its international activities. For instance, cultural and geographic proximity, colonial ties and a common language with the host country help to explain how internationally active banks choose the location of their affiliates (CGFS (2005), Galindo et al (2003), World Bank (2008)). Cultural proximity has been found to foster cross-border bank M&A transactions by reducing both the informational barriers to entry and the diseconomies stemming from an increase in complexity (Buch and DeLong (2004)).

3.4 Efficiency considerations

Surprisingly perhaps, there is scant evidence in the empirical literature for the existence of scale or scope economies in international banking. A bank that has already incurred the fixed costs of technology investment should, in principle, enjoy substantial economies of scale by spreading these costs across a greater range and volume of activities. However, the data do not indicate that large and sophisticated banks have successfully exploited such economies via international expansion. Likewise, there is little evidence that banks' international expansion could have contributed to economies of scope across different business lines.[12]

There are several possible reasons for the lack of evidence on economies of scale and scope. For one, managerial difficulties in monitoring a larger institution may be a significant drag on efficiency gains. In addition, findings reflect properties of the representative (or "average") firm in the data sample of each study. This leaves open the possibility that some banks have realised economies of scale and/or scope while others have suffered diseconomies. Another possibility is that banks have expanded in order to extract rents from their market power or benefit from implicit or explicit government support, which has not been captured by most balance sheet analyses.

[12] There are important issues in measuring both economies of scale and scope. Among the more important ones are: (i) differences in technology utilisation across banks (Kumbhakar et al (2008)); (ii) the small number of large banks, which impairs the power of statistical tests; (iii) considering only balance sheets leaves a significant portion of bank activities out of the analysis (Kumbhakar et al (2008), Boyd and Gertler (1994), Clark and Siems (2002)). That said, the empirical estimation turns out to be more problematic for scope economies than for scale economies because of the small number of specialised banks to which a bank offering a broader range of products can be compared.

The literature on scale economies finds that banks enjoy economies of scale at low levels but that there is a threshold, beyond which diseconomies set in (Berger and Mester (1997), Berger et al (1999), Wheelock and Wilson (2001)). These studies estimate that the maximum efficient size of commercial banks lies between USD 100 million and USD 25 billion. Yet even the upper end of that range is a small fraction of the assets of most internationally active banks at the end of the 20th century. Although more recent studies – which have broadened the definition of cost and revenue in the empirical analysis – have found that economies of scale might exist at a higher level of assets, their conclusions stop short of providing an explanation for the observed size of international banks (see the review in DeYoung et al (2009)). Corroborating these findings, Amel et al (2004) conclude that little evidence exists for improvements in cost or profit efficiency following a merger.

That said, industry representatives and consultancy firms often mention the existence of economies of scale as a driving force of mergers between banks. The divergence between these statements and the findings in the literature may reflect the failure of empirical analyses to capture important links between the revenue-generating capacity of large firms and their placement power and ability to underwrite large deals.[13] In addition, some institutions may realise economies of scope across different lines of business – by capitalising, for example, on their investment banking expertise via their retail franchise – while others do not. Another explanation may simply be managerial myopia, whereby ex ante perceptions of the benefits from spreading IT investments or a given number of employees over more transactions do not materialise subsequently.

In addition, international operations allow banks from both developed and emerging markets to enjoy efficiency improvements that pay off several years down the road. Thanks to the superior infrastructure and staff qualifications in international financial centres and countries with mature financial systems, foreign banks with operations in such locations can improve their managerial skills, adopt best practices and gain know-how. Findings in Berger et al (2000) and Claessens et al (2000) lend support to this view.

Certain incentives to engage in international banking activities may be missed by the economies of scale (and scope) literature because they are not related to efficiency gains in a welfare-enhancing sense. For example, banks may wish to exploit the superiority of their managerial skills and the quality of their financial services in order to gain market power in foreign markets and, eventually, reap rents. There is indeed some indirect evidence in support of such a hypothesis as far as the entry of large banks in emerging markets is concerned (Claessens et al (2000), Mathieson and Roldos (2001), Wang (2007)). However, the hypothesis does not seem to be borne out by evidence from mature economies (Berger et al (2000)).

In addition, banks may have the incentive to expand – both domestically and internationally – in order to attain the status of a too-big-to-fail institution. Because depositors and other investors are aware of the implicit or explicit insurance of their claims by the government, they do not need to take the bank's insolvency risk into account. This, in turn, allows the bank to finance its businesses at lower cost than smaller competitors, which is beneficial to individual banks but impairs systemic stability. Empirical research on the issue is limited, but Hughes and Mester (1998) find evidence that large US firms pay less for uninsured deposits, a result attributed to such banks being considered too big to fail.[14] In more recent research, Penas and Unal (2004) argue that larger bank mergers are partially motivated by the

[13] These factors are also discussed in Netherlands Bank (2009) in the context of the current and future trends in the Dutch financial system.

[14] Concretely, Hughes and Mester (1998) find that, controlling for other factors, a 1% increase in size translates into a 29 basis point decrease in the price of uninsured deposits.

incentive to become too big to fail. In their review of the literature, DeYoung et al (2009) discuss several findings that US banks that could be considered too big to fail enjoy lower costs of funds and higher acquisition premiums.

3.5 A post-crisis perspective on the drivers of bank internationalisation

A key lesson of the recent crisis is that deregulation allowed banks' balance sheets to expand beyond the level that could be justified by sound risk assessment. An environment of low funding costs, short-sighted investment strategies and inherent difficulties in measuring risk through the cycle contributed to an underpricing of risk and a rise in banks' leverage (Borio and Drehmann (2009)). These developments increased the vulnerability of the financial system but remained largely unrestrained by prudential authorities. The expansion of balance sheets via higher leverage is likely to have underpinned both domestic and international banking. Indirect evidence in this respect is provided in Graph 6, which shows that the share of foreign institutions in the fast-growing bank lending to major economies was roughly constant over the last decade.

As the crisis unfolded, bank lending contracted both domestically and internationally. The policy lessons to be drawn from this contraction depend crucially on the extent to which it was driven by supply or by demand factors. The rest of this subsection provides a tentative classification of the factors at work.

The drop in credit demand from both the non-financial corporate sector and households has been a direct manifestation of the global recession. The demand for trade credit, for instance, declined dramatically against the backdrop of shrinking world exports and falling commodity prices. In 2009, weak mergers and acquisitions activity resulted in the lowest fourth quarter syndicated loan issuance since 2003.

At the same time, there is evidence that the balance sheet difficulties of international banks have acted as a supply side constraint on international banking activity. For one, the drying-up of securitisation *markets* in late 2007 added to tight financing conditions, especially in those countries that rely heavily on mortgage securitisation. Cross-currency funding pressures seem to have also constrained the supply of credit to international banks. Cetorelli and Goldberg (2010) argue that the contractionary tendencies have been strongest among source banking systems with the greatest ex ante funding imbalances. Finally, the decline in syndicated loan issuance during the crisis is positively correlated with measures of bank balance sheet stress (Chui and Domanski (2010)). As balance sheets are being repaired, reduced leverage may sustain the contractions of global banking activity in the short to medium term. Continuing uncertainty about the future regulatory environment might exacerbate this trend.

Unusually strong non-financial private bond issuance was partly a consequence of the contraction in bank credit worldwide (Graph 10). As investors' appetite for risk improved in 2009, it helped finance a strong issuance of high-yielding private sector fixed income securities, particularly in the United States but also increasingly in Europe. In addition, the need to shrink balance sheets may have led banks to reorient their clients towards market-based financing. Thus, markets provided substitutes for bank-based intermediation in the direct aftermath of the financial crisis.

4. Effects of international banking

As international banking evolved over the years, the international dimension of financial stability increased in importance and economic agents gained access to a broader range of financial services. This section starts with a discussion of how the cross-border expansion of banking activities has affected the riskiness of individual banks and the financial system as a

whole. It then turns to a discussion of the impact of international banking on economic integration and growth.

4.1 Impact on the risk of individual banks

International expansion can affect the risk profile and resilience of individual banks through risk diversification, competition and efficiency gains. The geographic diversification of a bank's counterparties often translates into a diversification of its exposures, which reduces the riskiness of its aggregate portfolio. However, research has found that banks that enjoy diversification benefits tend to build riskier portfolios in order to realise higher returns (Demsetz and Strahan (1997), Girardone et al (2004), Hughes and Mester (1993)). As a result, more diversified banks are not necessarily less risky (Berger et al (1999)).

As far as their impact on a bank's riskiness is concerned, competition and efficiency gains have been often analysed jointly. Competition in the financial sector induces banks to exploit the risk-return frontier along its international dimension. According to both theoretical and empirical research, this has not increased banks' riskiness (Boyd and De Nicoló (2005), Allen and Gale (2004), Boyd et al (2004)). Further, to the extent that international competition fosters banks' overall efficiency, it could be expected to foster the efficiency of their risk measurement and management practices. In support of this view, Altunbas et al (2007) find a negative link between efficiency and riskiness in Europe, although not in the United States.

4.2 Impact on systemic risk

From the perspective of the global system, the internationalisation of banking influences cross-border risk-sharing. Enhanced risk-sharing is generally beneficial for financial stability. For example, Claessens (2006) finds that, by enhancing risk-sharing, the activities of foreign banks in a particular country reduce the probability of a financial crisis and lead to less procyclical lending behaviour. De Nicoló et al (2003) find that a similar result holds to the extent that risks are properly assessed at the level of the parent institution. They relate their finding to the fact that foreign entry reduces the concentration in host banking systems.

The ability to assess and manage cross-border risks also determines whether foreign banks alleviate or add to local strains during a crisis. De Haas and van Lelyveld (2010) show that, as a result of parental support, foreign bank subsidiaries do not need to rein in their credit supply during a financial crisis in the host country, while domestic banks need to do so. For their part, McCauley et al (2010) find that local lending by foreign banks was more stable during the recent crisis than cross-border lending, which depends to a greater extent on the health of the parent institution. In turn, to the extent that a country relies heavily on cross-border bank flows, their reduction puts strains on the domestic banking system.

The international dimension of banking is particularly burdened with issues related to the flow of information between financial institutions and prudential authorities, as well as among financial institutions themselves. Such issues add to the vulnerability of the financial system. A case in point is provided by the complaint of supervisors in central and eastern Europe that foreign banks, which are of systemic importance to the region, often release insufficient information about their operations (Turner (2006)). Recently, information frictions contributed to the massive, albeit gradual, build-up of cross-currency mismatches on the balance sheets of internationally active banks, which led to severe liquidity problems in interbank markets in 2007–08 (CGFS (2010a)). Information issues also complicate cross-border crisis resolutions, such as burden-sharing arrangements (BCBS (2010)).

4.3 Impact on the macroeconomy

International banking has had a favourable impact on economic growth and efficiency through five important channels (Claessens (2006)).[15] First, by introducing new financial products and services and improving the use of new technologies in host countries, cross-border entry has led to improvements in the quality of financial intermediation. This effect has been particularly pronounced in emerging market countries. A specific example is the use of mortgages denominated in Japanese yen and Swiss francs in central and eastern European countries, which allowed the economies there to tap an expanded investor base. More generally, there is evidence that, by increasing the rates of technology transfer and contributing to the increase in wage levels, financial sector FDI is conducive to greater employment and growth prospects in emerging markets.[16]

Second, foreign banks are likely to exert pressure to improve the overall regulatory and supervisory frameworks. In various countries, foreign banks have often been catalysts of important reform processes that ultimately enhanced the growth potential and efficiency of host economies.

Third, international banking has fostered allocative efficiency. Most directly, this is accomplished by removing distortions created by an overly concentrated system (Beck et al (2004)). In addition, there is evidence that foreign bank entry is associated with a reduction of lending on the basis of political or "crony" connections, thus levelling the playing field in the host economy and eliminating distortions in decision-making (Gianetti and Ongena (2005)). And at a time of local crises, allocative efficiency manifests itself via a continued access of host country borrowers to international financing.

Fourth, the entry of foreign banks sets in motion competitive forces in the host country. One of the consequences is pressure on local firms to use existing resources more effectively. Another effect is a lower cost of financial intermediation, as measured by bank margins, spreads and overhead costs (Fries and Taci (2005), Martinez Peria and Mody (2004)). This effect appears to exist whether foreign entry is de novo or by acquisition, although it is stronger in the former case.

Fifth, reliance on lending from foreign banks also carries risks. In their study of the Korean experience, Jeon et al (2006) find evidence that foreign banks cut lending to a greater extent than domestic banks in a financial crisis. The recent crisis revealed that, at a time of stress, internationally active banks react mainly by cutting their cross-border lending, whereas their local lending by affiliates in foreign countries is more resilient. Importantly, the extent to which banks cut their lending is best seen after exchange rate valuation effects on stocks have been controlled for (McCauley et al (2010)). In the fourth quarter of 2008, for example, cross-border lending fell by almost USD 2 trillion at constant exchange rates, whereas the corresponding drop of foreign banks' local claims in local currencies was USD 0.5 trillion.

International banking continues to have an important role to play because the process of financial integration is incomplete. A clear sign of this is the tight link between country savings and investment decisions, first registered under the heading of the Feldstein-Horioka (1980) puzzle. Importantly, despite the extensive financial integration over the past 25 years, the majority of studies still find the puzzle, even though it has gradually weakened.[17]

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[15] See also Claessens et al (2001), Bonin et al (2005), Giannetti and Ongena (2005) and Lensink et al (2007).

[16] See Goldberg (2009) for a survey of research on the consequences of foreign bank entry for emerging market host countries.

[17] See surveys by Coakely et al (1998) and Apergis and Tsoumas (2009).

5. Reflections on the future of international banking

The recent crisis highlighted deficiencies in the way many international banks conducted their business and managed financial risks. It also exposed gaps in the regulatory environment. The rapid transmission of shocks across the global financial system through internationally active banks, together with the concurrent macroeconomic problems, has prompted calls for improvements to these banks' business models that will strengthen their risk and liquidity management. These calls have led to a reassessment of the balance between the financial stability risks and the economic benefits associated with international banking.

From a long-term perspective, international banking has contributed to world economic progress. The internationalisation of banking has closely tracked the growth in international trade for long periods in the past, suggesting that real and financial globalisation are closely intertwined. International banking has been an important driver of global integration and economic development, supporting the efficiency of multinational firms and helping to exploit the growth potential of both developed and emerging market economies. In addition, the establishment of local operations by foreign banks has often enhanced the effectiveness of emerging market financial systems.

Against this backdrop, the long-term trend towards the internationalisation of banking can be expected to continue. However, as its major drivers evolve, its overall pace and patterns are likely to differ from the past, posing challenges for authorities in their efforts to shape the future financial system.

One development that is likely to affect international banking in the future relates to international trade and multinational production. International banking should continue to expand alongside the expansion of trade and multinational production activity. The location of such activities could move more towards emerging market economies, especially areas exhibiting the most economic dynamism. This might spur further financial integration, both in the form of increased participation in these economies by foreign internationally active financial institutions and via an expanded international role for banks from emerging market countries. That role might be associated with more cross-border consolidation in the financial sector, both between institutions from emerging economies, and between those from industrialised and emerging economies.

Another important development relates to the balance between market- and bank-based international intermediation. According to a long-established "complementarity" view in the literature, economic growth is stronger and efficiency benefits are greater when both bank- and market-based financial intermediation perform their respective functions. The main reason is that each type of intermediation has its comparative advantages, which depend on the stage of economic or financial development and manifest themselves in different economic sectors and industries. In addition, the complementarity of banks and markets is enhanced by the increasing interdependence of these two forms of intermediation. Thus, the completeness of a financial system is essential (Levine (2002), Beck and Levine (2002), Arcalean et al (2007)).

Lessons from the crisis have lent support to this view, underscoring the importance of resilience in both financial markets and the banking sector. The recently expanded role of international capital markets as a source of corporate financing has illustrated the greater flexibility of markets at a time of stress. Large non-financial corporations, particularly in mature but also in emerging economies, resorted strongly to bond financing when faced with a sharp contraction in bank credit, resulting in record levels of issuance. At the same time, banks are a more important source of external financing to households, as well as to small and medium-sized companies. These borrowers tend to be burdened by asymmetric information issues and, thus, have only limited and indirect access to capital markets.

These broad trends have a bearing on a third secular change, which is in the regulatory environment. Authorities envisage a new regulatory environment in which banks hold stronger capital and liquidity buffers and build balance sheets that are resilient to funding shocks. Many host country authorities are considering a strengthening of local oversight and regulation. Policy design faces the challenge of fixing the shortcomings of international banking while preserving its efficiency-enhancing functions. Effective policy should foster the development of liquid securities markets that complement bank-based intermediation, improve market infrastructures and ensure that entities performing similar financial functions receive similar regulatory treatment.

Given its strong role in shaping international intermediation in the past, regulation has an important role to play in fostering cross-border knowledge transfer. The end result, however, should not be the convergence to a single risk assessment or risk management framework, which would encourage herd behaviour and weaken financial stability. Since any given framework is inevitably imperfect, diversity of approaches would carry large benefits.

Perhaps even more importantly, a new regulatory framework should aim at a level playing field. Competition is a major channel through which international banks promote growth. In addition, adhering to the level playing field principle goes hand in hand with the goals of enhancing oversight, transparency and supervision of systemically important activities. Hence, the continuing financial integration of both developed and emerging market economies makes it even more important that regulation have a truly global reach.

At the same time, competition may have contributed to the underpricing of risk and, thus, to a leverage-based expansion of balance sheets in the run-up to the crisis. There is scant evidence for economies of scale within large internationally active banks. However, certain banks may have expanded, either domestically or internationally, with the aim of attaining a too-big-to-fail status. Such a status increases moral hazard and weakens market monitoring of risk-taking, which benefits individual firms but distorts economic incentives and renders the financial system more fragile. In turn, this underscores the importance of strong supervision and prudential buffers that restrain the build-up of risks. Effective, and therefore credible, bank resolution regimes that take into account the too-big-to-fail issue would be a welcome complement (BCBS (2010)).

In addition to focusing attention on issues of capital and risk management, the crisis has underscored the urgency of a careful analysis of banks' international funding and liquidity management practices (CGFS (2010a,b)). As jurisdictions hosting foreign banks realised that they were exposed to risks generated in third countries and as cross-border borrowers from internationally active banks saw their credit lines dry up, calls were heard for a greater decentralisation of the international banking model. However, while a more decentralised model – in which a greater portion of banking operations are funded, managed and supervised in the same location – could restrict the spillover of adverse shocks across national borders, such a model would also increase the dependence of economic agents on local economic and financial conditions and could hinder the efficient flow of funds across borders.

The trade-offs associated with a move towards greater decentralisation in international banking illustrate how difficult it is to design a financial system that is immune to all conceivable shocks. Rather than trying to design a foolproof system, policymakers may find it more effective to focus their efforts on strengthening mechanisms that prevent the build-up of excessive cross-border and local risks, as well as improving capital and liquidity management.

Annex 1:
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Bank of Japan	Hidehiko Sogano Maiko Koga
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Bank of Spain	Adrian Van Rixtel
Bank of England	Chris Peacock
Swiss National Bank	Yves Schneider
Federal Reserve Bank of New York	Linda Goldberg
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