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Executive Summary

In recent years the international financial system has experienced a significant degree of turbulence and volatility, which has led to greater instability and systemic risk. During this period capital markets proved volatile and susceptible to contagion, and emerging economies suffered the consequences of volatile capital flows. The events of this period - Asian crisis, Russian default, Brazilian currency turmoil, Long Term Capital Management (LTCM) collapse, etc. - had significant implications for each of the following key issues:

- the effectiveness of the risk measurement and management functions within internationally-active financial institutions;
- the degree of disclosure of financial institutions' risk profiles;
- the role of financial supervision and the need to reinforce international co-operation between national supervisors;
- the general architecture of the international financial system.

This study is aimed at:

- providing a broad view of the problems currently affecting the international financial system and international financial institutions;
- highlighting the different proposals which have recently been outlined for the redesign of the global financial system, both at a macro level (the role of international bodies, the redesign of exchange rate regimes, etc.) and at a micro level (disclosure matters, capital adequacy regulation, etc.);
- suggesting potential improvements that could be achieved at the European level.

Generally speaking, most of the supervisory issues examined in this study are managed by international bodies and, quite often, by joint committees, notably the Basle Committees and, to some extent, the IMF. European institutions, both official organisations and professional bodies, as well as Member States' supervisory authorities, participate in the working of these international fora. In general, European working groups are punctual in adopting international standards. In future, however, we recommend that even greater attention be paid to these issues, mainly at the political level, as a consequence of the more complex global environment; and also greater willingness to match market requirements and to avoid rapid obsolescence.

The study has six main chapters, dealing with both macro aspects (mainly chapters 1, 4, 5 and 6), and micro aspects (mainly chapters 2 and 3).

An Introduction outlines the **main themes**. Its analysis of

- international capital flows to and from emerging market economies;
- the main causes and consequences of capital flow reversals; and
- the financial crises in emerging markets,

leads to some preliminary conclusions, which are discussed in more detail in subsequent chapters.

In particular, it appears evident that, in recent years, global financial markets have been

facing crises very different from those of the 1970s and the 1980s, the so-called balance of payment crises. These were essentially the by-product of persistent current account imbalances and led to the abandonment of currency pegs. In contrast, the recent crises - also called twin-crises - are characterised by a tight connection between stressful balance of payment situations and problems due to domestic financial vulnerability, mainly in the banking system.

Based upon these conclusions, the first chapter analyses **the major policy responses** undertaken both at a national and international level to manage some of the large reversals of capital flows and the fragility of financial institutions. A critical evaluation of the effectiveness of these policies is also discussed in the final chapter. This is devoted to an assessment of **how global financial markets should be reformed** so as to limit the occurrence of such crises, while continuing to benefit from the progressive integration of world capital markets.

Among the causes of fragility in financial systems, observers see derivative contracts and Highly Leveraged Institutions (HLIs) – in particular Hedge Funds – as playing a distinctive role. Chapter 2 addresses both issues by investigating the sources of risk of both OTC (over-the-counter) and Exchange-traded derivatives and the functioning of hedge funds.

Risks spreading out of **OTC derivatives** are more serious than those related to Exchange derivatives. A very critical issue is related to their *credit risk exposures.* Many institutional (e.g. Bâle Committee) and market-participant initiatives (*Counterparty Risk Management Policy Group - CRMPG*) have been dealing with the *estimation* and the *management* of these risks.

However, the debate is not yet over. Both specific and general open issues condition the effectiveness of **risk-management techniques**. The general suggestions in this study are strictly related to these open issues. For example, regulators should try to improve "*fair competition*", in order to *forbid unsound increase in the market share* of financial intermediaries dealing with OTC derivatives, and should also remember that organisational aspects (i.e. internal rewarding systems) must be monitored as seriously as technical ones. As regards market participants, they should strengthen their instruments for assessing and managing credit risk, and improve the diffusion of both bilateral and multilateral netting systems.

For **Exchange-traded derivatives**, different considerations apply. Organised exchanges are critical to financial market participants because they allow the prompt offsetting of positions in less liquid instruments. At the heart of the web that makes the exchange-clearing and settlement arrangements work properly lies a central counterparty: the exchange clearing house. Exchange clearing houses manage risks by creating a range of safeguards against the default or insolvency of members and market participants and of settlement banks.

The study's main conclusion is that the wave of restructuring which is today shaping derivative exchange market structures emphasises the need for enhancement of clearing houses' risk procedures. Mergers and link-ups are creating global trading platforms, increasing the risks faced by the central counterparties involved. The effectiveness and efficiency of cross-border transactions and clearing arrangements require increased international co-operation among regulators and exchanges. Supranational organisations such as IOSCO and, at the European level ECOFEX, should be strongly involved in such a process.

Hedge funds, together with other HLIs, are institutional investors that bear a high risk/return profile and normally exploit large leverage. The recent collapse of LTCM and the threat that

hedge funds' investment strategies might lead to systemic risks have stimulated a debate among regulators at both national and international level on effective ways to supervise hedge funds activities. Both direct forms of regulation - such as the need for maximum transparency and disclosure of hedge funds' activities - and indirect forms - such as stricter supervision for financial institutions dealing with hedge funds - have been suggested. We agree on this measure; but we also believe that other areas must be investigated: notably how to monitor and deal with the leverage these institutions should be allowed to apply.

Financial institutions and markets are the key subjects of Chapter 3 as well, where two main issues are addressed: **disclosure and transparency** regulation; and financial institutions' market **risk management and regulation**.

In the global market, disclosure and transparency are perceived as necessary complements to supervision, which they reinforce, while contributing *per se* to the financial soundness of institutions and forcing greater public accountability.

At a macroeconomic level, it is fundamental to develop the effective and timely dissemination of data on countries internal reserves, external debt, capital flows and indicators of financial sector soundness. To achieve maximum effectiveness of all disclosure initiatives, and the optimal use of scarce resources, there must be co-ordination of different instruments and complementarity of outputs.

At the level of single financial institutions, the most critical areas of disclosure in recent years have been related to securities and derivatives trading; lending for speculative purposes; and credit risk assessment. The Basel Committee on Banking Supervision is pro-active in these fields; but accounting treatments are quite different, notably for derivatives contracts. Paradoxically, in a five-year period, derivatives accounting moved from an "under-regulated" situation to an "over-regulated" one.

The main characters involved are the two leading accounting standards bodies: the US FASB and the Europe-based IASC. Over the years, these organisations have converged towards some common key points. However, some market-participant associations are opposing these accounting standards. The debate is not over, and at the European level it is complicated by the co-ordination of accounting standards and the European Accounting Directives. The FEE, surprisingly, has recently suggested the option to use IASs without requiring compliance with the Accounting Directives. We recommend European authorities to speed up the regulatory process in order to match market requirement and to avoid rapid obsolescence.

The focus on market risk regulation is justified by the evidence that, while in the past bank crises were mostly generated by credit risk, in the last twenty years significant losses and insolvency in the banking industry has often originated in excessive market risk-taking activities. Major financial institutions reacted by developing and implementing sophisticated risk measurement techniques.

Despite the weaknesses that can be attributed to these risk management systems, we believe they are significant improvements in the way market risk are measured, managed and controlled. We therefore agree with the Basel Committee line of action, based on the gradual recognition of internal models for capital adequacy purposes. We also recommend that both international and national supervisors should agree on additional measures leading to:

i) a more uniform and homogeneous set of rules concerning disclosure on banks' market risk taking activities;

ii) an explicit requirement for internationally active banks to issue subordinated debt on a revolving basis, when the return is earned by uninsured and unprotected investors;

iii) a FDCIA-style limit to bailout policies of insolvent banks; and

iv) a stronger connection between risk measurement and risk management techniques.

An analysis of the fragility of **emerging and transition economies** begins in chapter 4, where we undertake the investigation of the relationship between prudential concerns and banking sector stability. The relevance of the link between the two variables emerges, dramatically, in the case of Asian banks. A low level of equity, low liquidity and a high exposure to lending in foreign currencies are among the reasons for the banking sector crisis. The areas of weakness are strongly connected to insufficient prudential regulation; and thus, in order to increase the stability of national and international financial systems, considerable efforts should be placed on amendments to the regulations. The large differences in regulation and definitions among countries have important consequences, not only in terms of efficacy of prudential concerns, but also on the comparative evaluation of the situation of different countries. As stated above, the setting of international standards in regulation - but also in others areas like accounting - is therefore also important to improve international investors' decisions.

Another area investigated deals with the potential role of **non-traditional factors** (criminal and illegal) as possible channels of instability. As no consistent estimations of instability risks due to criminal and illegal factors so far exist, we strongly recommend specific international studies on this issue. A growing knowledge of the relationship between financial instability and illegal factors might help in the design of anti-money-laundering legislation in conditions of scarce resources and limited technical capabilities. We recommend a money-laundering multiplier model to identify those financial instruments, markets and institutions which should be controlled, and who should be put in charge of anti-money-laundering duties.

The design of an **appropriate regulatory framework** to maintain an efficient and stable financial system, introduced in chapter 4, is expanded in chapter 5.

For developed countries, prudential regulation has a fundamental role. Its effectiveness can be assessed by measuring its ability:

(1) to reinforce private incentives for banks (and other participants in the financial markets) to recognise the risks they are taking; and

(2) to enable the authorities to monitor potential threats to systemic stability so that they can take corrective measures if needed.

Another area of supervision is the design of financial safety nets which minimise the moral hazard problem. Ideally, the best safety net is one that results in market participants behaving as if the safety net did not exist. Realistically, the design of a good safety net must balance its components - including lender-of-last-resort facilities, deposit insurance, capital requirements, supervision, and closure and recapitalisation rules - in such a way as to control the amount of risk borne by the government, and provide the right incentives for all the parties involved. Consensus on the above policy recommendations has led to the implementation of a similar regulatory framework in the United States, Japan and Canada. We believe the EU should adopt such a model providing some issues are clearly stated:

i) the sharing of responsibilities between the ECB and national central banks for prudential supervision matters and the provision of lender-of-last-resort facilities; and

ii) the harmonisation of regulation on deposit insurance systems and on bailouts financed with taxpayers' money.

In many developing countries, where financial institutions have a limited capacity to manage risk and regulators have a limited capacity to supervise, other policies are more relevant for maintaining financial stability. The choice of the best-suited exchange rate regime is a particularly important issue. There is an increasing policy consensus that fixed-but-adjustable pegs do not work well for emerging market economies: the peg encourages domestic banks and firms to borrow funds in foreign currency without consideration of exchange rate risks. Floating exchange rates or irrevocably fixed ones (currency boards or even "dollarisation" of the economy) seem more appropriate options.

Another important issue refers to the liberalisation of banking systems. We highlight the positive impact of foreign bank entry, both *ex-ante* and *ex-post* a banking crisis. Banking system liberalisation might be used as an instrument both to prevent and to repair situations of instability. However, foreign entry might also increase the likelihood of instability. Increased competition, indeed, lowers the franchise value of banks, inducing them to accept greater risk. For this reason the approach to banking system liberalisation should be cautious and geared to strong prudential regulation and supervision.

Chapter 6 draws conclusions from the extensive debate about reforming **the "international financial architecture"**. We believe that crisis-prevention and crisis-management instruments should be kept separate. On crisis-prevention policy options, several proposals have been put forward either to limit or tax bank borrowing abroad, to tax short-term capital inflows, to control capital outflows or to tax foreign exchange transactions. Among these proposals, there is a broad consensus on the need to tax short-term capital inflows.

With respect to crisis management, the general debate focuses on the set of institutional mechanisms needed to assist countries that fail to prevent the eruption of a crisis. Much emphasis has been put on measures to "bail-in" the private sector: that is, on ways to have the private sector share more of the burden of crisis management.

Finally, we contribute to the discussion on the functioning of the International Monetary Fund (IMF), the key international player in the recent financial crises. Two extreme options are examined:

i) to make the IMF the international lender of last resort; or

ii) to limit the IMF's role to monitoring developments in emerging market economies, while leaving the role of lender of last resort to a network of central banks.

We believe that this latter option may reduce the moral hazard problems linked to the existence of an international lender of last resort. At the European level, however, it remains to be clarified whether the European Central Bank has the institutional mandate to be an efficient manager of international financial crises.

CONTENTS

Chapter 1

The volume and structure of international capital flows

1.1. Introduction

The aim of this chapter is to conduct an in-depth analysis of recent patterns of capital flows to and from emerging markets. Following an introductory section (section 1.2.) devoted to a brief review of the major economic profiles of both advanced and emerging economies in the last few years, we will concentrate our attention on capital flows, their trends, magnitude, changes in asset composition and sectoral destination (section 1.3.). We will subsequently investigate the main causes and results behind the recent large capital flow movements which have affected emerging economies and led to serious financial crises. These specific collapses, involving both currency and banking crises – and therefore called "twin crises" – will then be compared with those of the preceding decades (section 1.4.).

In the final section (section 1.5.), we will concentrate on the widespread debate which has recently emerged regarding the choice of the most appropriate policy responses in managing large and volatile movements of capital flows to and from emerging markets. This allows us to raise the question – directly discussed in chapter 6 – of how the international financial system should be reformed to prevent the sudden emergence of such crises.

1.2. Economic focus

This section is closely related to the international capital flow analysis that will be presented in section 1.3 and briefly describes the recent trends in both the real and financial sector affecting the following two country groups, namely:

- *advanced economies* (sometimes including individual G-7 countries);
- *emerging economies* (both developing countries and those in transition).[1]

In particular, the macroeconomic scenario which has characterised the global economy in the last three years can be summarised as follows:

a) In general, there was continuing consolidation of the gap between advanced and emerging economies.

b) As regards the advanced economies, however, a distinction should be made between two opposite poles. One pole was the United States and, to a lesser extent, the other English-speaking countries, where, in the 1996-1998 period, growth generally exceeded expectations while wages and prices remained remarkably stable. The other pole was Japan which, during the same period, experienced an ongoing recession accompanied by widespread price decreases. The Euro zone found itself in an intermediate position with

[1] It is worthwhile mentioning the presence of a "country classification problem" arising from the fact that different sources of information draw on different country aggregation criteria, especially for the category "emerging economies". In the Annexes to chapter 1 there is a precise reconciliation of the different classification criteria adopted by the above listed international institutions. Here we only add that, in the whole work, consistently with IMF definition, for emerging market economies we refer to both developing countries and countries in transition.

marked differences across national economies.

c) Some serious crises came as a shock to emerging countries and affected Russia, Mexico, Brazil, Korea, Malaysia, Indonesia, the Philippines, Thailand, and Taiwan.

d) In any case, the overall economic picture of emerging countries and countries in transition worsened, thus providing strong arguments for a "contagion effect" hypothesis.

e) Cross analysis of foreign trade and current accounts revealed both a dramatic collapse in exports of goods from advanced countries to emerging economies mainly caused by a decrease in demand and, above all, a slump in commodity prices. This reduced the emerging economies' export value and therefore worsened their terms-of-trade.

1.3. Capital flows to emerging markets: volume, dynamics and composition

What have been the main characteristics of capital flows to emerging market economies over the last three years? What major changes have affected their magnitude, regional destination and reversibility, asset composition and sectoral destination? What were the causes and the consequences of the large reversals of capital flows that ultimately led to the currency and financial crises experienced by some developing regions starting from 1997?

This section tries to answer to the first two questions. The last point will be discussed in the following section (section 1.4.), entirely dedicated to the recent crises in the emerging market economies.

1.3.1. Trend and magnitude of capital flows

During the last three years, net capital flows to both developing economies and countries in transition have fallen dramatically to the lowest levels in this decade. In particular, the balance of payment data show that total net private capital flows to emerging markets were about 64 billion US$, a level about 55% below the corresponding 1997 figure and almost 70% below the peak level of 1996. Obviously this trend is mainly due to recent large capital outflows (so-called *reversals*) experienced by some specific country in the time period considered. Furthermore, the level of capital market activity seen in the first half of 1999, coupled with IMF projections, suggests that any upturn at the end of 1999 will be fairly modest.

It should be noted that the timing, duration and magnitude of the above-mentioned reversals have not been uniform across regions. This phenomenon was particularly pronounced in Asia and Latin America (Western Hemisphere, according to the IMF classification), regions that experienced the largest capital inflows in the early 1990s. Net private outflow from Indonesia, Korea, Malaysia, the Philippines and Thailand (subsequently termed *Asian crisis countries*) increased in 1998 relative to 1997, increasing from about 20 billion US$ to over 45 billion (+128.3%). These data are even more impressive if we consider that at the end of 1996 the same countries had experienced total net private capital inflows of about 62 billion US$. In addition, financing pressures affecting the Asian crisis countries spread widely over the rest of Asia, showing a net private outflow from this area of almost 10 billion US$, versus net inflows of about 23 billion in 1997 and about 38 billion in 1996. Overall, the 1996 - 1998 period experienced a marked reversal – over150 billion US$ – in private financing to Asian countries, only slightly alleviated by total net official inflows of about 18.5 billion US$.

In the Western Hemisphere, net private inflows showed a sharp decrease in 1998 relative to either 1997 (-16%) or 1996 (-21%). The major determinant of this trend is represented by the financing pressure that in mid-1997 had mainly affected Brazil which experienced a level of

capital inflows about 51% below the 1997 figure, leading to spillover effects on other similarly placed economies. In 1998 countries in transition saw a reduction in total private inflows relative to 1997, going from 13.5 billion US$ to 25.6 billion (-47%), certainly feeling the effects of the financing pressures mentioned above; considering the same three-year period, the drop was generally even worse (-69%).

Unlike the trend just described, the two macro-regions of Africa, on the one side, and the Middle East and Europe, on the other, appeared to benefit from the crisis which was damaging Asia and Latin America. In fact, during the three-year period considered, net private flows to Africa went from almost 7 billion US$ at the beginning of 1996 to more than 10 billion at the end of 1998, representing an increase of about 50%. However, it is not to be forgotten that, during 1998, net private inflows fell quite significantly relative to 1997 (-37%) as a consequence of a general lack of confidence in the macroeconomic policies of the developing economies caused by the above-mentioned crises.

During the three-year period considered, the Middle East and Europe, in turn, saw net private capital inflows increase by 141%, going from 10 billion US$ at the end of 1995 to about 26 billion at the end of 1998. These figures seem particularly favourable, especially considering that aggregated data also include a sharp net private outflow experienced by Russia in 1998 (-14,7 billion US$), due to a financial crisis similar to those affecting the Asian countries.

In conclusion, despite their decline in 1998, overall net capital flows to countries outside Asia remained above their 1996 level, suggesting that the impact of these crises on private flows to emerging market economies outside Asia had been fairly modest. However, it is worthwhile underlining the magnitude of these large reversals that has certainly increased the volatility of total capital flows to developing economies and countries in transition. This has obviously created serious problems – both at a domestic and global level – for policymakers responsible for the soundness and allocation efficiency of international financial markets.

1.3.2. Asset composition and sectoral destination of capital flows

With regard to the reference period chosen, it is important to note that the composition of capital flows – in particular private ones – substantially confirms the trend which characterised the early 1990s and which is profoundly different from that of the preceding decades.[2] In fact, in the 1970s and 1980s the item “bank loans and other net investments” – which includes syndicated bank lending, trade financing and some other smaller items – was the most relevant component of net private capital flows. On the other side, in both the early and late 1990s the surge was dominated by securities and non-debt-creating flows, namely “foreign direct investment” (FDI) and “portfolio investment”.

In particular, during this reference period, the major component in the above-mentioned fall in net private capital flows to emerging markets was a further sharp withdrawal of bank financing from those economies. The balance of payments item “bank loans and other investments” turned to negative values in 1997 (-60.4 billion US$), became more sharply negative in 1998 (-103.4 billion US$), with most of the net outflows from Asia (-89.5 billion US$) and Western Hemisphere (-18.1 billion US$). Of the five regions considered in this research project only the one termed “Middle East and Europe” saw an increased role of debt flows – in particular, syndicated bank lending – which went from net outflows of 3 billion US$ at the end of 1996 to net inflows of almost 15 billion US$ at the end of 1998. This region clearly took advantage of the above-mentioned diversion of funds from Asia and Latin America which began in 1997.

[2] See Lopez-Mejìa A., 1999.

On the other hand, net portfolio flows to emerging markets – which include bond and equity holdings by bank and non-bank investors – remained positive in 1998 (36.7 billion US$), although they fell compared to the previous years (66,8 billion US$ in 1997 and 80.8 billion in 1996). On the whole, emerging economies presented a slight decrease in net portfolio outflows which dropped from about 41 billion US$ at the end of 1995 to about 37 billion at the end of 1998 (-11%), with Asia crisis countries experiencing a reversal of about 24 billion US$ during the same period. Without going into too much detail, it is worthwhile pointing out that the increase in the amount of total net private capital flows coming from portfolio investment has important effects on overall volatility of capital flows and must be carefully managed by policymakers and institutions responsible for the supervision and stability of financial markets. In fact, the most recent theoretical and empirical analyses on the relative volatility of different sources of capital show quite homogeneously that foreign direct investments (FDI) are more stable than other flows, particularly portfolio flows.[3] This smaller volatility mainly stems from the fact that FDI are more costly to reverse than portfolio flows and less sensitive to international interest rates.

It is consequently easy to explain why foreign direct investment flows showed considerable strength over the period considered, rising from about $97 billion in 1995 to about $131 billion in 1998 (+35%). Despite a modest decrease in 1998 compared to 1997 (-$12 billion), mainly due to decreases in Asia and Russia, this is the largest component of net private capital flows to emerging markets in the second half of the 1990s. Particularly relevant is the weight of FDI on total private capital flows to countries in transition in 1996, 1997 and 1998 (respectively, 89%, 72% and 129%). To a considerable extent, this phenomenon can be attributed to the growth of FDI in the transition economies, as vast new opportunities were provided by their transition to the market and, in particular, by the start of large privatisation processes.

What is interesting to observe is that data for gross private market financing to emerging economies– which include all international offerings of bonds, equities and loans – also show a sharp fall in 1998 compared to 1997 (-48%%).[4] However, contrary to the balance of payment data, during the last three years the average volume of new issues has only modestly decreased, going from 148.4 billion US$ in 1995 to 157.9 billion in 1998. This has been interpreted by economists as a signal that the fundamental principles behind the surge of capital flows in the early and mid-1990s remain largely in place, including improved macroeconomic policies and differences in factor endowments.[5] It is worth underlining that while the portion of gross new issues represented by syndicated loans has markedly fallen, going from 52.5% to 40.7%, on the other side, bonds and other fixed-income instruments – now the major source of private market financing (excluding, obviously, foreign direct investment) for emerging markets – have taken on a much more important role, reaching at the end of 1998 about 53% of total gross capital inflows from a starting level of about 40% at the beginning of 1996.

[3] Among the many studies on the volatility of capital flows, see Turner P., 1991; Claessens S. et al., 1995; Chuchan I. et al., 1996, Cailloux J. and Griffith-Jones S., 1997.

[4] The differences between the balance-of-payments data and the gross financing data lie in that the former – taken from IMF database - potentially offer the most complete coverage of total capital flows, but are subject to errors and omissions (and also to substantial revision). By contrast, gross issuance data – taken from BIS database – include all gross capital inflows that occur in the context of formal international offerings or facilities, but exclude bank lending that is not syndicated and investments that do not occur through international public offerings: thus, substantial amounts of trade financing, foreign direct investment, and investment in domestic government debt are excluded from these data.

[5] See World Bank, 1999.

Finally, as regards the sectoral destination of capital flows to both developing countries and economies in transition, what is particularly striking is the recent development in international capital market that reverses the trend typical of the early and mid-1990s, namely, the reduction of access to private agents as opposed to the public sector, going from a share of 47% in 1995 to one of 54% in 1998. Once again, this phenomenon reflects an increasing preference on the part of investors from industrialised countries to lend only to the more highly rated borrowers, especially heads of state, due to the economic health of private borrowers from Asia and Latin America. Without entering into this kind of problem, it is, however, important to note that the lack of market access to corporate borrowers – especially medium-sized ones – from emerging economies can seriously damage their capacity to repay external debt and to refinance themselves in order to adopt growth strategies, thus, in the end, damaging the international financial system as a whole.

1.3.3. Changes in bank exposures and country lenders to emerging markets

Information on exposures of mature market country banks is available though only based on BIS data limited to the 1997 and 1998 semesters. However, what clearly emerges is that the outflows initiated in 1997 started slowing down in 1998 despite a worsening of the European and Latin American positions, mainly due to the Russian and Brazilian crises, respectively. In particular, cutbacks of bank financing to Asian countries were much smaller in the second half than in the first half of 1998, suggesting that Asia was less affected by the Russian turmoil and that net capital outflows from this area might be slowing down. Moreover, there was a marked reversal in Brazilian exposures during 1998, with a positive change of about 8 billion US$ in the first half and then a sharp cutback of nearly 12 billion in the second half. In sharp contrast, there was a slight increase in bank exposures to other Western Hemisphere countries with virtually no slowdown in the second half of 1998 during the Russian crisis.

During the first six months of 1998, exposures to Russia rose modestly, only to fall sharply in the second half of the year in the middle of the crisis. Other European emerging market countries, in turn, saw a modest growth in exposures in the second half of 1998 though much lower compared to the sharp growth recorded in the first half of the year (+8.1 billion US$).

The last point discussed in this capital flow analysis directly refers to the nationality composition of total bank exposures towards emerging market economies. In general, the prevalent trend characterising the last few years has certainly been the growing predominance of European Banks which in 1998 were responsible for about 63% of total bank claims to emerging economies compared to nearly 54% in 1996. During the same period, on the contrary, the share of Japanese banks in the total reported claims decreased quite significantly (13.3% in 1998 against 17.8% in 1996), as did that of North American banks (14% in 1998 against nearly 17% in 1996). In particular, of note is the strikingly high exposure recorded by European banks towards borrowers from Eastern Europe (from 80% in 1996 to 85% in 1998) and African countries (from 78% in 1996 to 80% in 1998). What is, however, cause for concern is the share of European banks towards Asian countries (50% in 1998) and Western Hemisphere countries (62% in 1998) which since 1997 have suffered the most from currency and financial crises.

Since the excessive exposure of banks to credit and currency risks is widely considered a key factor behind the highly volatile capital flows in some of the Asian countries, and since European banks have the highest share of emerging market claims, there are clear and strong incentives for European Authorities to study and undertake the needed policy adjustments to enhance stability and reduce the degree of risk today affecting financial systems.

1.4. Main causes and consequences of recent financial crises in emerging economies

1.4.1. A brief chronology

As shown in section 1.3., since 1997 most emerging market economies have had serious problems both in domestic and foreign markets. In particular, vulnerable corporate and financial sectors, weak public finance, widening trade balance deficits and inconsistent monetary and fiscal policies have been singled out as the main causes of difficulties in most countries thus giving rise to the so-called "*twin crises*", analysed in greater detail in the following sections.

Table 1.1 presents a brief chronology of the major events which occurred in developing countries and countries in transition.[6] As shown, the starting point is generally considered the floating of the Thai baht which occurred in July '97 after a couple of months of pressure on international exchange rate markets. The depreciation experienced by other developing economies (Hong Kong, Taiwan, Indonesia, the Philippines, and Korea) caused both deep internal recessions and significant effects on international trade prices and, consequently, merchandise flows. This created even more channels through which the crisis spread to other emerging countries, giving rise to the so-called ***contagion effect***:

> "*A prominent feature of these crises…was the spread of difficulties from one economy to others in the same region and, in some cases, beyond, in a process that has come to be referred to as 'contagion'*".[7]

In fact, the impact of the crises described above was not confined to Asia: currencies in Latin America, Central and Eastern Europe, Russia and South Africa came under pressure as a number of countries experienced capital outflows in late 1997 and early 1998.

The international spillover from the Russian crises was extremely serious: yield premiums for emerging market bonds sharply increased, currency pressure intensified in many emerging market economies, and equity prices fell precipitously in both emerging and mature markets. Consequently, the widespread flight to quality and the rush for liquidity led to a severe tightening of credit conditions not only for emerging market borrowers but also for some corporate borrowers in mature markets.

The last notable victim of the flight to quality and liquidity in late 1998 and early 1999 was Brazil, as shown in Table 1.1 As occurred in other emerging market economies, a tightly managed exchange rate regime, combined with growing domestic and external current and capital account imbalances, proved unsustainable and led to a sharp depreciation and, lastly, to the floating of the Brazilian real, dramatic increases in interest rates and huge reversals of capital flows.

[6] See BIS, 1998a, 1999a.

[7] IMF, 1999a, chap. 3, p. 66.

Table 1.1: Chronology of the recent financial crises in emerging markets

1997 February	Pressure on the Thai baht met by considerable intervention in spot and forward markets.
May	Thailand introduces controls aimed at segmenting the onshore and offshore markets but strong pressure continues (15 May).
July	Floating of the Thai baht (2 July). Band of the Philippine peso widened to unspecified range (11 July). Band of the Indonesian rupiah widened from 8% to 12% (11 July). Malaysian ringgit falls by 4,8%.
August	Floating of the Indonesian rupiah (14 Aug.). Approval of an IMF-led support package of $20.1 billion For Thailand (20 Aug.).
October	Authorities stop supporting the New Taiwan dollar, which falls by 6% (17 Oct.). Equity markets in Asia, Latin America and Russia fall sharply. Strong exchange rate pressure builds in Brazil, Hong Kong, Korea and Taiwan.
November	Indonesia obtains an IMF-led support package of $40 bn. (5 Nov.). Interest rates raised by 7% in Russia and authorities announce that the intervention band for the rouble will be widened from 5% to 15%. Daily fluctuation band for the Korean won widened from 2.25% to 10%.
December	Korea obtains an IMF-led support package of $57 bn. For (5 Dec.). Floating of the Korean won (6 Dec.). Oil price records 30% fall over the year.
1998 January	Russian rouble is pegged to the dollar with a ±15% fluctuation band (1 Jan.). Indonesian corporate debt "pause" (27 Jan.). Restructuring agreement covering $24 bn. Between Korea and its external creditors (29 Jan.).
February	Currency board proposed by Indonesia.
May	Presidential change following riots in Indonesia (21 May). Russian refinancing rate reaches 150% by month-end.
June	Indonesia and a steering committee of creditors agree to restructure $70 bn. of a foreign private debt (4 June). New agreement signed between the IMF and Indonesia (24 June). South African rand comes under intense pressure and depreciates sharply. Brazilian interest rates return to levels of early October 1997 (26 June).
July	IMF-led support package for Russia of $22.6 bn. In 1998-1999 ($4.8 bn. made available on 20 July).
August	Yen reaches an eight-year low (11Aug.). Hong Kong authorities intervene in equity markets (14 Aug.). Russia changes exchange rate regime, suspends payments on short-term government debt and imposes moratorium on commercial debt payments to non-residents (17 Aug.).
September	Russia stops supporting the rouble (1 Sept.). Malaysia pegs its exchange rates to the dollar and imposes stringent capital controls (1-2 Sept.). In Latin America, equity markets fall sharply and exchange rates come under pressure: Colombia raises its exchange rate band by 9% (2 Sept.); Brazilian interest rates double to nearly 50% (10 Sept.); Mexican short term interest rate peaks at 48% (11 Sept.); Chile widens its band and increases interest rates (16 Sept.). China tightens foreign exchange regulations (27 Sept.).
October	Following presidential elections, Brazil announces a three-year fiscal adjustment programme (20 Oct.).
December	Approval of an IMF-led support package of $41.5 billion for Brazil, including a $13.3 billion BIS loan backed by 19 industrial country central banks (2 Dec.).
1999 January	Floating of the Brazilian real (15 Jan.). Dollarisation issue raised by Argentine central bank (21 Jan.). International rating agency upgrades Korean sovereign debt to investment grade (25 Jan.).
March	New IMF programme for Brazil (8 March). First reduction in Brazilian interest rates since floating (25 March).

Source: adapted from BIS, Annual Report, 1998, 1999.

1.4.2. Main causes of large reversals of capital flows in emerging market economies

What have been the reasons behind the large reversal episodes in various countries over the last few years? And what can explain the volatility recently observed in capital flows? This section examines these questions in order to discover the principal elements differentiating recent financial crises from those occurring in previous decades (section 1.4.3.).

In other words, investigating the causes of the above-mentioned cash flow episodes is essential in order to understand completely the relationship between the globalisation of financial markets and the nature and frequency of crises in emerging economies. There is, in fact, a growing consensus that although global financial deregulation and liberalisation have had many positive effects they have also brought greater risks to the stability of the global financial system.[8] It is therefore important to understand whether these recent crises are intrinsic features of the globalisation of capital markets.

Without dwelling unduly on the many different theoretical models proposed to explain the recent reversals of capital flows from emerging markets, it is possible to single out three distinct arguments which are widely accepted by economists.[9]

I The best known argument proposed to explain the reversals, stemming from the "Krugman model" (1979), draws on the lack of confidence in the consistency of domestic macroeconomic policies, such as the monetisation of persistently large fiscal deficits and the maintenance of a pegged exchange rate. A speculative attack then takes place and leads to an erosion of international reserves and, ultimately, forces authorities to float or change the exchange rate. The Krugman model can also be extended to show that speculative attacks are usually preceded by real exchange rate appreciation, a deterioration of the current account of the balance of payments, higher real wages and lower competitiveness.[10]

II A second line of argument stems from the evidence that many of the countries caught up in the recent crises, starting from Mexico, had not experienced policy inconsistencies before speculative attacks. In fact, the decision of authorities to avoid increasing domestic interest rates needed to maintain a fixed exchange rate might signal the presence of other factors affecting the authorities' objective function, usually referred to as "financial vulnerabilities". For instance, in addition to wanting to maintain a fixed exchange rate, a government might also wish to limit its debt-service obligations, lower the rate of unemployment, or safeguard a collapsing banking system. In this case, authorities might prefer to devalue rather than increase interest rates in order to avoid a domestic financial crisis and the cost of a bailout. These theoretical explanations are characterised by the presence of multiple equilibria and self-fulfilling crises; in this view, as Calvo (1995) puts it: "if investors deem you unworthy, no funds will be forthcoming and, thus, unworthy you will be".

III A third set of explanations for both the large reversals and high volatility of capital flows in emerging economies directly refer to the "contagion effect", already introduced in the preceding section. The main rationale for this phenomenon lies in the globalisation of financial markets which can reduce the incentives for information-gathering and thereby

[8] See Griffith-Jones S., 1998.

[9] See: Calvo G, 1996; Reinhart C. and Vegh C., 1996; Lopez-Mejìa A., 1999; Kaminsky G. and Reinhart C., 1999.

[10] See Garber P.M.and Svensson L.E.O., 1994.

strengthen herd behaviour when, as is often the case, expectations are formed in a context drawing on imperfect and asymmetric information. Herd behaviour by investors is one reason why financial crises in emerging markets tend to be clustered. There are at least four other channels through which contagion effects are likely to occur.[11] First, contagion could occur through the so-called "wake-up call" phenomenon, whereby the collapse of one currency alters the perception of investors about other countries' fundamentals; if investors find the same weaknesses in other countries, their ratings are reduced and the crisis spreads. A second channel of contagion is constituted by the "financial linkages" among countries; in this case, a crisis in one or more countries might induce investors to rebalance their portfolios for risk management, liquidity or other reasons, thus penalising some economies irrespective of their macroeconomic fundamentals. Third, when a country experiences a financial crisis marked by a significant depreciation of its currency, other countries may suffer from a "trade spillover", owing to the improved price competitiveness of the crisis country. Finally, "common shocks", such as a steep rise in world interest rates, a sharp slowdown in world aggregate demand, a decline in commodity prices, or enormous changes in exchange rates between major currencies, can play a relevant role in causing pressure on the currencies of several countries simultaneously.

It is important to note that the above categories of explanation are not mutually exclusive. On the contrary, today there is a wide consensus – supported by empirical evidence[12] – maintaining that the large reversals of capital flows affecting Russia, Brazil and the five Asian crisis countries in the last three years have been the result of a joint combination of the first two categories mentioned above – the balance-of-payment crises and banking crises – exacerbated by a contagion effect and, therefore, characterised by the sudden widespread withdrawal of funds from emerging economies as a whole. To use a recently coined term, twin *crises* are at work.

1.4.3. Characteristics of recent crises in emerging market economies: the twin crises

The arguments presented in the preceding section make it quite clear that in these last few years global financial markets have faced crises which are very different from those of the 1970s and the 1980s, the so-called balance-of-payments crises. These kinds of crises are essentially the by-product of persistent current account imbalances and, following massive international reserve losses, ultimately lead to the abandonment of currency pegs. On the other side, the twin crises are characterised by a close link between balance-of-payments crises and problems due to domestic financial vulnerability, mainly in the banking system.

Kaminsky and Reinhart (1999), in an in-depth empirical research, studied the characteristics of these kinds of crises, closely analysing the links between banking and currency crises. The main results can be summarised as follows.

- Typically, problems in the banking system precede a currency crisis; the subsequent depreciation of the domestic currency then deepens the banking crisis, giving rise to a vicious spiral. Evidence shows that the peak of the banking crisis most often comes after the currency collapse, implying that an already weak banking industry faced more serious problems due either to the high interest rates needed to maintain the exchange rate peg or to the foreign exchange exposure of domestic banks.
- A major shock to financial institutions – in general financial liberalisation and/or

[11] For a more complete and detailed taxonomy, see IMF, 1999a, chap. 3.

[12] For all, see the fundamental paper of Kaminsky G. and Reinhart C. 1999.

increased access to international capital markets – often precedes banking crises, increasing the financial vulnerability of emerging economies. *Ad hoc* empirical analyses suggest that inadequate regulation and lack of supervision during a liberalisation process might play a key role in explaining the reasons underlying the worsening of the banking system.[13]

- Twin crises are typically preceded by a multitude of weak and deteriorating economic fundamentals. More precisely, data available on the Asian countries show quite clearly that crises occur as the economy enters a recession, following a prolonged boom in economic activity fuelled by domestic lending, large capital inflows, and an overvalued currency.
- When compared to balance-of-payments crises, twin crises appear much more severe in their final effects. This is mainly due to the weaker fundamentals characterising the affected countries, further worsened once the vicious spiral between currency and banking crisis comes into play. On the other side, this implies that countries with weaker fundamentals or financial vulnerabilities are, to some extent, more likely to fall prey to the forces of contagion than are economies with stronger underlying structures.

In conclusion, we have analysed the main causes and consequences behind the recent large reversals of capital flows and have pointed out the severe threats to emerging economies posed by the increased globalisation of financial markets which can potentially lead to twin crises with the related risks of contagion effects. What clearly emerges is the vital importance of having a financial system which is supervised and regulated in such a way as to allow countries to deal calmly and knowingly with the negative effects of the globalisation of capital markets.

1.5. Open issues: a survey of policy responses to recent large capital flow episodes

As can be easily understood, the international community has become deeply involved in the debate over the causes and consequences of the crises in emerging markets and the steps required to avoid a recurrence.

In this final section of chapter 1 we briefly analyse the major policy responses undertaken both at a national and supranational level to manage some of the large reversals of capital flows experienced in these last few years.[14]

In a subsequent part of this research – namely, chapter 6 – the question will be discussed in a more critical perspective, in order to understand how the functioning of the international financial system should be reformed so as to limit such crises while continuing to benefit from the progressive integration of world capital markets.

In short, an analysis of the measures adopted in the 1990s to overcome the negative effects of large capital flow movements makes it possible to distinguish three main categories of possible policy responses – counter-cyclical policies, structural policies and capital controls – we will now illustrate.

1.5.1. Counter-cyclical policies

Among the various measures in this category, it is possible to consider the following.

[13] See Caprio G. and Klingebiel D., 1996.

[14] This section largely draws on extensive empirical study conducted by Lopez-Mejìa, 1999.

A. Monetary policies

In exchange rate regimes which are not completely flexible, monetary policies avoid aggregate demand pressures by sterilising the monetary expansion caused by the accumulation of international reserves. The larger the accumulation of reserves, the more the authorities avoid nominal exchange rate appreciation.

There are three types of sterilisation policies: open market operations; increases in reserve requirements which reduce the money multiplier; management of public sector deposits by shifting them from the banking sector to the Central Bank.

As will appear clearer in chapter 6, these instruments have not proved so efficient, mainly because they fail to recognise the real nature of recent crises and, in particular, are not concerned with their implications for the financial and banking domestic system which could be seriously damaged both in its allocation function and stability from, for instance, increases in reserve requirements and/or major shifts from bank deposits.

B. Nominal exchange rate flexibility

If policymakers want to avoid expanding monetary aggregates associated with capital inflows, they can reduce international reserve accumulation by allowing the nominal exchange rate to appreciate. This counter-cyclical policy has the advantage of insulating the money supply from capital inflows. The greater the exchange rate flexibility, the larger the insulation of the money supply and the autonomy of monetary policy. Moreover, flexibility in the nominal exchange rate introduces uncertainty which can discourage speculative short-term capital inflows.

The main drawback of this policy is that if the nominal exchange rate is allowed to appreciate, the profitability of the traded goods sector will suffer. Important sectors, such as non-traditional exports, will be damaged if capital flows are persistent and real exchange rate appreciation appears to be permanent.

In general, to reduce the risks associated with a pure float and the costs associated with accumulation of international reserves, several countries have adopted flexibly managed exchange rate systems (“dirty floating”).

C. Fiscal policies

A third counter-cyclical policy consists in tightening the fiscal position, mainly public expenditures, in order to decrease aggregate demand and reduce the inflationary impact of capital inflows. This policy replaces exchange rate flexibility as a stabilisation tool. A cut in public expenditure is likely to limit the appreciation of the real exchange rate since non-tradable goods often represent a significant share of public expenditures.

However, fiscal contractions are not flexible enough to respond to fluctuations in capital movements. First of all, fiscal tightening requires changes in domestic legislation and implies sensitive political measures that cannot be undertaken on short notice. Secondly, because short-run policy changes could be interpreted by economic agents as information on the governments’ long-run intentions, the possibility of transmitting the wrong signals must be avoided.

1.5.2. Structural policies

The following measures, if properly applied, make it possible to avoid major problems involved by the adoption of counter-cyclical policies.

A. Trade policies

During a period of capital inflows, trade liberalisation could be used to reduce the appreciation of the real exchange rate, thus avoiding a subsequent currency – and eventually banking – crisis. This can happen most of all because, like tight a fiscal policy, it lowers the pressure on the domestic economy by shifting expenditure to tradable goods.[15]

However, the efficacy of trade policy is controversial. First, evidence suggests that the impact of trade liberalisation on the trade balance is ambiguous.[16] Second, liberalising the current account might induce further capital inflows if it increases foreign investors' confidence in domestic macroeconomic management, thereby potentially contributing to exacerbating a boom-bust cycle. More generally, since trade liberalisation is a structural policy, it should be designed to be consistent with long-term objectives rather than being a counter-cyclical response.

B. Banking supervision and regulation

As demonstrated in the preceding section, since countries experiencing twin crises have been associated with weak financial systems, it is difficult to stop large capital flow movements by merely adopting appropriate macroeconomic policies without also reinforcing the domestic operating environment, first of all the financial sector.

Without going into detail, it is worth underlining that banking regulation and supervision become crucial elements if there are failures in internal governance and market discipline, as is typically the case in emerging economies. However, given that even in most industrial countries a comprehensive banking surveillance is still not well formulated, some observers are sceptical of the role that current market regulation and supervision systems can play in volatile markets.[17] As will be stressed in chapter 6, now is the time to completely redesign the "architecture" of the international financial system.

1.5.3. Capital controls

From a theoretical point of view, there is a wide consensus that the welfare of an economy suffering from distortions can be improved by capital controls[18]. Traditionally, the effectiveness of capital controls has been defended in two ways. First, since capital controls drive a wedge between domestic and external interest rates, they are seen as a way to help authorities gain control over domestic monetary conditions when the exchange rate is fixed or managed. Second, countries with capital controls typically have higher rates of inflation, higher revenue from inflation and lower real interest rates than countries without controls. In such countries, capital controls are seen as tools to maintain high government revenues and reduce government debt service costs.

In this decade, however, capital controls have served a different purpose: they were adopted to reduce monetary and credit expansions during inflow periods in order to reduce the destabilising effects associated with the inflows and thus avoid the traumatic effects associated with outflows.

Restrictions on capital mobility fall into two basic categories. The first uses quantitative

[15] See Corbo V. and Hernandez L., 1996.

[16] See Montiel P., 1995.

[17] See Lopez-Mejìa A., 1999.

[18] See Dooley M., 1996.

controls to regulate the volume of capital flows; the second applies explicit taxes or tax-like measures. In the past, quantitative measures were implemented mainly to prevent outflows and were associated with administrative controls; they required extensive bureaucracy, provided incentives for evasion and interfered with international trade. However, in the 1990s the main goal of quantitative controls has been similar to that of explicit taxes or tax-like measures – to reduce the volume of flows and, in particular, to target short-term capital that is perceived as volatile and destabilising.

In this decade, capital controls have taken different forms in a wide variety of countries such as Mexico (1992), Malaysia (1994), Indonesia (1995), Thailand (1995) and Chile (1996). However, as evidence clearly shows these measures did not succeed in reducing the size of the inflows and preventing the subsequent currency and banking crises.

* * *

In conclusion, the main point which emerges from these surveys of the different policies available to national and supranational authorities is the different level of effectiveness. In this sense, counter-cyclical policies appear to be the least suitable for the purpose, largely because they have proved to be inconsistent with the intrinsic nature of recent banking and currency crises – the twin crises. On the other hand, capital controls which have, to a certain extent, proved to be effective measures can be used as a "second best" solution since they are not very effective when a large capital flow movement is already at work. Finally, structural policies seem to be the most promising, even though to be fully effective, authorities must make a considerable effort – particularly at an international level – to design a world financial system which is sound and stable and capable of managing an intrinsic feature of the global economy, namely, rapidly growing and changing capital flows.

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Chapter 2

The role of derivatives markets and highly leveraged institutions

Among the causes of the turbulence and volatility of international financial markets, observers commonly include some "microeconomic" factors such as the functioning of derivatives markets and the investment strategies implemented by hedge funds. It is often argued that the use of derivatives and the possibility of increasing the leverage through their use might cause trading losses for internationally active financial institutions and consequently threaten systemic risk. In addition, hedge funds' speculative investment strategies are often pointed out as causes of financial market volatility.

This chapter aims to give some answers to these questions. Section 1 and 2 are devoted to the analysis of derivatives markets, respectively OTC and exchange-traded. The sources of risk and the methodologies used to measure and manage the exposure are critically analysed. Both sections conclude with the main open issues and policy proposals.

Section 3 investigates the development of the hedge funds industry and its role in the recent financial crises. The section concludes with the assessment of the regulatory environment for this institution and the potential area of improvement.

2.1. The OTC derivatives market

2.1.1. The main typologies of risks spreading from OTC derivatives

This section focuses on "over-the-counter" (OTC) derivatives – which are privately negotiated contracts provided directly by dealers to end-users – as opposed to standardised contracts sold on exchanges. It is well known that derivative contracts are used to deal with financial risks; but they can also be sources of risk. The typologies include mark*et risk, credit risk, operational and legal risks.*

- The **market risk** of derivatives derives from their price behaviour when market conditions change.
- **Credit risk** is the risk that a loss will occur if a counterparty defaults on a derivatives contract. It is possible to distinguish two kinds of credit risk:
    - **Pre-settlement risk** refers to the possibility of the counterparty defaulting before the maturity date (or settlement date) of the contract; and
    - **Settlement risk** (or "Herstatt risk") refers to the possibility of the counterparty defaulting at the maturity date (or settlement date) of the contract.
- **Operational risks** are related to unexpected losses which occur as a result of inadequate systems and control, human error, or management failure. These risks are also common in the securities and credit businesses. Nevertheless, the complex structure of OTC derivatives requires special emphasis on maintaining adequate human and systems control to validate and monitor the transactions and positions of dealers.
- **Legal risk** is linked to the loss which can occur when the contract cannot be enforced

because of insufficient documentation, insufficient capacity or authority of a counterparty, uncertain legality, unenforceability in bankruptcy and insolvency.

2.1.2. Assessing and managing the OTC derivatives credit risk

In order to deal with OTC derivatives counterparty risks, the main problems to be faced are, firstly, the *estimation* of these risks, and secondly, their *management*.

As regards *credit risk assessment issues*, it is useful to underline the meaning of the current and potential exposure. *Current exposure (CE)* is the current market value of the derivatives at a given point in time, that is, the cost of replacing the remaining cash flows at the price and market interest rates of the period in which the default occurs.[19].

The *potential exposure (PE)*, on the other hand, describes the *ex ante* vision of the potential increase in value. In short, potential exposure is an estimate of the *future* replacement cost. It is difficult to assess and involves the introduction of stochastic elements. These analyses generally assume an hypothesis on the volatility of the underlying and estimate the effects of its movements on the value of the derivative transactions[20].

In OTC derivative credit risk analysis, the key issue is the exposure evaluation. Therefore, the above-mentioned techniques are also known as *exposure measurement techniques*. In some cases, it was suggested interpreting the credit risk spreading out from an OTC derivative contract as a *traditional equivalent credit risk*. The main techniques are:

a) *original exposure*, used in the past prudential ratio for supervisory authorities;

b) exposure as market value plus an "*add-on amount*";

c) exposure as market value plus potential exposure, with *stochastic methods*, such as analytical method, historical simulation and Monte Carlo simulation;

d) exposure as market value plus potential exposure, with *stress testing*.

The first technique is the simplest and was widely used in the past. It evaluates the contract exposure as a fixed percentage of the contract notional. It was also the basis to determine the prudential capital ratio for supervision purposes. This technique is no longer used for prudential supervision given the introduction of market risk capital ratios. Furthermore, it

[19] The current exposure is also regarded as the *current replacement cost*, *current net of collateral exposure* and *current liquidation exposure*. The *current replacement cost* is measured at market to include the benefit of netting agreements if legally enforceable with high confidence but before consideration of any related collateral. The *current net of collateral exposure* is measured as current replacement cost minus the net value of collateral towards which there is high confidence regarding enforceability and perfection of security interest. The *current liquidation exposure* is measured as current net of collateral exposure based upon estimates of liquidity-adjusted contract replacement cost, the liquidation value of collateral received and the buy-in cost of the collateral pledged

[20] It is common to refer to two potential exposure measures: the «expected» exposure and the «maximum» exposure. The expected exposure (EE) is an estimate of the average of (non-negative) market values over the (remaining) life of the transaction. When combined with some estimate of default probabilities, expected exposure can be used in pricing credit risk. When combined with expected default rates, an estimate of Expected Loss can be derived from a given level of expected exposure. On the other hand, the maximum exposure (also known as «worst case», or «peak» exposure) is an estimate of the maximum future exposure over the (remaining) life of the transaction, using statistical analysis based on pre-determined confidence intervals. Maximum exposure is typically used for limit setting and, when combined with default probabilities, for estimating the risk intensity of transactions. It is also important to keep in mind that credit risk assessment models use calculating PE and EE net of margin. Thus, Collateralized Exposure (Collateralized Potential Exposure-CPE, and Collateralized Expected Exposure-CEE) measures the future credit exposure of a portfolio, giving effect to collateral terms applied to a portfolio.

clearly shows much weakness:

1) the absence of any contract market value considerations;

2) the absence of any market fundamentals considerations;

3) the same method for different derivatives typologies;

4) the *static minded* and *not forward looking* philosophy.

A more effective credit risk exposure technique is that based on the exposure as "*market value plus an 'add on'*". International supervisory authorities have also proposed this method. The global exposure is determined by adding the current exposure, which is equal to the contract market value, and the potential exposure, measured as a percentage of the contract notional. This last factor represents the so-called "add on". The economic purpose of the "add on" is to cover an unforeseeable increase in exposure between two capital ratio calculation periods, or between a crisis event and the intervention of the supervisory authorities. This method remedies the main limitation of the original exposure because the current exposure is considered. However, some weaknesses still remain such as the lack in flexibility as regards specific market fundamentals or specific contractual features. In any case, this technique represents the basis for further, more sophisticated analyses.

In fact, the following methods (points c. and d.) determine the global exposure by adding the market value and a potential exposure evaluated using *stochastic methods*, or by adding the market value and a potential exposure determined by *stress testing*.

The first technique evaluates the potential exposure by relying on stochastic methods, bearing similarities to the VAR applied to market risk[21].

Finally, by *stress testing* the OTC derivatives, credit risk is measured by simulating extreme hypotheses regarding developments in market fundamentals and their effects on derivative, or derivative portfolio, market value. The advantages of this technique include the transparency of the potential exposure evaluation for top management; the drawbacks include the difficulties in determining the different scenarios.

As regards *credit risk management/reduction* issues, the most common techniques in dealing with the credit risk on OTC derivatives can be divided into *internal* and *external techniques*. Internal techniques refer to systems developed by financial intermediaries to measure and manage credit risk more quickly and accurately. Accurate credit risk modelling requires the combination of *complex and highly quantitative risk estimation* which captures the broad range of potential value outcomes in a portfolio with *in-depth counterparty credit analysis* which measures the probability of credit deterioration and default. No universally accepted approach to counterparty credit risk modelling has been developed to date, but two different processes have emerged: *risk utilisation*, on the one hand, and *capital allocation*, on the other.

In order to deal with credit risk management, external techniques spread out from the improvement of the contractual relationship with counterparts. This ensures a higher level of protection and a reduction of both the default probability and expected loss. These techniques are mainly:

a) *netting agreements (both bilateral* or *multilateral);*

b) *master agreements*;

[21] See Section 3.2.2. for more details.

c) *guarantee margins* and *recouponing*;

d) *credit triggers* and *early termination* options.

Netting agreements[22] are seen as effective methods in reducing the credit exposure towards counterparts in OTC derivatives contracts. Even if multilateral agreements are becoming important, the most common agreements are bilateral netting between market participants and supervisory authorities. The key issues rely on the legal structure of the contract which makes the agreement legally enforceable. This is a specific concern of international supervisory authorities.

As regards *master agreements*[23], they are used by most dealers in all G-10 countries to establish the terms and conditions of OTC derivatives transactions with other dealers and end-users. The advantages of dealing through master agreements are the following:

a) they reduce inefficiencies associated with negotiating legal and credit terms in a series of transactions;

b) they contribute to reducing counterpart exposure on outstanding transactions through the use of close-out netting provisions. Dealers generally use standard forms of agreements. The most commonly used are those of ISDA (International Swap and Derivatives Association).

As regards *guarantee margins*, they should reduce the OTC derivatives credit risk just like those used for exchange traded future contracts. They should be based on initial margins and on increase/decrease of these margins according to a marketing to market technique. The introduction of these methods in OTC markets could start a sort of "OTC exchange". However, this possibility continues to be theoretical.

Finally, *credit triggers* and *early termination options* could reduce the OTC derivative credit risks such as contractual covenants which allow a party to settle the contract before it expires. This option can be exercised either according to the wish of a party, or in particular circumstances, such as the worsening of the counterparty credit worthiness.

2.1.3. Supervision of OTC derivatives markets

It is possible to distinguish institutional initiatives and market participant ones. As regards institutional initiatives, the most debated issue is both to foster the role of super-national authorities (such as the Basle Committee), and co-ordinate supervision at an international level. Within this context, the role of the Basle Committee is relevant as regards both the credit risk assessment and management techniques.

As regards *credit assessment techniques*, the Basle Committee originally proposed both the "original exposure" method and the market value plus an «*add-on amount*» one; more recently, the Basle Committee allowed a bank or a financial intermediary to also choose an "*in-house"* model but just in order to assess its *market* risks exposure.

With reference to *credit risk management techniques*, the Committee admitted bilateral netting agreements as tools in order to reduce the OTC derivatives credit risk and suggested the use of collaterals and the introduction of multilateral netting agreements for OTC derivatives contracts.

[22] This agreement allows two counterparts to give each other the possibility of compensating asset and liabilities in order to exchange only net cash flows.

[23] A master agreement sets forth the terms that apply to all or a defined subset of transactions between the parties, including close-out netting and other forms of bilateral netting.

More recently, it issued a series of papers on the question of credit risk management, disclosure and modelling[24].

Another Authority involved in the supervision of OTC worldwide derivative negotiations is the Group of Thirty[25]. The recommendations sent to legislators, regulators and supervisors are mainly the following:

a) recognise close-out netting arrangements and amend the Basle Accord to reflect their benefits in bank capital regulations;

b) work with market participants to remove legal and regulatory uncertainties regarding derivatives;

c) provide comprehensive and consistent guidance on accounting and reporting of derivatives and other financial instruments.

Among the initiatives of market participants, it is important to cite the work of the Counterparty Risk Management Policy Group (CRMPG), issued in June 1999, entitled "Improving counterparty risk management practices". The work aims to improve internal counterparty credit and market risk management practices. The results of CRMPG are included in a list of recommendations which can be summarised as follows:

1. *Transparency and Counterparty Risk Assessment*, which is based on information sharing, confidentiality and the monitoring of leverage, market risk and liquidity.
2. *Internal Risk Measurement, Management and Reporting which is* based on counterparty exposure and risk estimation, market and credit risk stress testing, the diffusion of credit practices, evaluation and exposure management and finally, management reporting.
3. *Market Practises and Conventions* such as those included in documentation policies and practises, with particular attention to documentation content and harmonisation.
4. *Regulatory Reporting* which means providing Supervisory Authorities with both qualitative and counterparty exposure reporting.

2.1.4. Open issues

Together with its effects, the relevance of the spread of OTC derivatives is considered in terms of financial stability and systemic risk.

As regards the effectiveness of the above mentioned *counterparty exposure measurement techniques*, four particular issues stood out in the market crisis events and deserve special attention:

1. In some circumstances, current (net of collateral) exposure measures did not represent a realistic estimate of the replacement value of the contract (or the liquidation value of the collateral) due to the impact that the size and illiquidity of the contract (and collateral) would have on market prices if immediate replacement (liquidation) had to occur.
2. Peak exposure methods were generally unreliable since they did not take adequate account of the considerable size of market moves or the ability to receive collateral.
3. The net of collateral exposure measures did not capture either the operational and legal risks associated with collateral or the potential for limited availability of collateral.

[24] See Basel Committee on Banking Supervision, (1999f), (1999d), (1999e).

[25] As far as the European authorities are concerned, the regulation of OTC derivatives is indirectly achieved via banking supervision directives.

4. Typical assumptions that the market risk and credit risk components of an exposure were independent proved inadequate, since in a number of cases there were very high and increasing correlations between the size of counterparty credit exposures and the inability of those individual counterparties to meet their obligations under those exposures. In the latter case, this was further exacerbated by concentrations of similar exposure to what turned out to be highly correlated counterparties in a similar industry/country.

Furthermore, as regards *credit risk modelling*, risk utilisation and capital allocation are both rigorous and widely used methods of credit risk measurement although neither should be considered fully comprehensive on a stand-alone basis. In particular, given its counterparty focus, the risk utilisation method makes it difficult to compare exposure measures or aggregation of exposures on a firm-wide portfolio basis as the capital allocation model does nor does it facilitate profitability analysis. Nevertheless, the intense focus of risk utilisation on trade and counterpart specifics makes the model valuable since it can identify potential large exposures and protect firms against catastrophic losses while providing a framework for risk utilisation and management.

Nevertheless, together with technical open issue, a series of *general open issues* should also be cited. They are mainly the following:

a) concentration of the OTC derivatives market;

b) traders compensation schemes and risk-taking behaviour;

c) lack of transparency;

d) the lack or scant diffusion of master agreements in order to deal with OTC credit risk.

High levels of *concentration* of OTC derivatives market spread out from the high integration between markets (cash and forward, exchange-traded and OTC, etc.) and between financial intermediaries (on the demand and supply side). The key issue is the fact that the 7-10 leading intermediaries hold most of the market. This increases the risk that should one of these intermediaries experience defaulting problems the crisis could quickly affect the other intermediaries.

Furthermore, these leading intermediaries' *traders compensation schemes* and *rewarding systems* usually lead to risk-taking behaviours. This occurs because dealers are frequently rewarded through a "bonus" which increases proportionally to the returns of their activities, obtained through the negotiation of financial products.

The *lack of transparency* in both internal and external disclosure procedures hinders crisis-prevention mechanisms and increases all the levels of risks (credit risks, operational risks) within financial intermediaries. The general situation worsens if the *lack*, or *scarce diffusion, of master agreements* is considered.

Both Authorities and market participants are currently involved in analysing a useful way to deal with these issues at a global level.

2.1.5. Policy proposals

The general suggestions are strictly related to the open issues described above. Particular attention is focused on the general ones.

As regards high levels of concentration and integration, it could be useful to improve competitive mechanisms in OTC derivatives markets. Regulators should try to improve "*fair competition*" in order to *forbid unsound increases in the market share* of financial intermediaries dealing with OTC derivatives.

With reference to the second aspect, Supervisory Authorities should keep in mind that organisational aspects should be monitored as seriously as technical ones. In other words, *sound risk assessment and management techniques cannot work properly if top management*:

a) is not informed clearly on internal organisational procedures which are followed by dealers in negotiating OTC derivatives contracts;

b) does not inform dealers about its general and specific risk tolerance;

c) does not act in order to prevent unsound behaviour of their human resource.

This last consideration could include two general measures:

- the introduction of *sound rewarding systems* and adequate incentive scheme for dealers in order to forbid extra-profit driven behaviour which makes high risk operations necessary; and
- the *reorganisation of front and back office tasks* in order to have the personnel with back office functions distinct and separate from the front office one.

As regards the third aspect, that is, *the lack of transparency*, it should be essential to strengthen credit risk assessment and management instruments and methodologies, such as:

a) the daily assessment of the market value of the open positions (market to market systems), which should make it possible to calculate the current and potential exposures for each rating class counterparty and each maturity bucket; and

b) the daily assessment of Value at Risk (VAR) which represents a consistent and robust risk measurement.

Finally, it would be useful to *improve the diffusion of both bilateral* and *multilateral netting systems*. As regards bilateral netting systems, it should be important for all OTC derivatives dealers to use a single "Master Agreement" for each counterparty. This could allow summarising (and, subsequently, netting) all the standing positions towards that party. The Group of Thirty recommendations seem to be consistent with this conclusion, also if it suggests bilateral netting only as regards current exposures. As regards *multilateral netting systems*, they should work like those working in exchanges (Clearing Houses). The introduction of these kinds of mechanisms requires much problem solving.

In short, multilateral netting systems could work only *if*, and *when*, all the previous issues are dealt with (reduction in market concentration levels, sound organisational procedures, sound rewarding systems, improvement in transparency and quality disclosure levels).

The general opposition shown by Supervisory Authorities during the last years now seems to be easing off. In fact, the latest conclusion they have reached is that "the expansion of clearing houses for OTC derivatives may also reduce counterpart risks". The Authorities recognise "the benefits of clearing, considering the effectiveness of the clearing house's risk management procedures and the effects of clearing of credit risks on uncleared contracts. National authorities should make sure that there are no unnecessary legal or regulatory impediments to clearing and that clearing houses adopt effective risk management safeguards"

2.2. The role of exchange traded financial derivatives

2.2.1. The role of exchange-traded derivatives in recent financial turmoils

The trading of derivatives financial instruments on organised exchanges is critical to financial market participants because it is one of the main ways to offset promptly positions of less liquid instruments. Moreover, financial markets participants tend to assume that even when increased price volatility reduces the liquidity of OTC derivatives market, it does not impact on exchange traded derivatives markets which remain liquid. Consequently, while the daily average amount of money settlements is typically quite low, these markets are under intense stress during periods of financial turmoil[26] when traders must face an increased demand for liquidity.

At the heart of the network which makes the clearing and settlement arrangements work properly lies a central counterpart - the exchange clearing house - which interposes itself between both sides in every transaction. Contracts are entered into bilaterally and then are transferred to the clearing house. Credit and liquidity risks are thus pooled and transferred to the clearing house whose financial integrity is critical to the market's functioning. The clearing house must then be able to cover any losses it might suffer from the default of one or more of its counterparts. Moreover, it handles money settlement transactions on which market liquidity is based by paying special attention to the reliability and soundness of the bank settlement and makes every effort to reinforce settlement arrangements.

The three major crisis cases which have occurred in derivatives exchanges up to now have taught two important lessons. First, traders' liquidity needs can be met only if markets' clearing and settlement procedures are likely to face several risk sources. Second, the readiness of the exchange clearing houses to react is crucial in avoiding a worsening of the crisis. We therefore now outline the risk sources clearing houses face and their risk management procedures. Procedure weaknesses will be covered and recommendations made in order to reinforce them.

2.2.2. The basic structure of clearing and settlement arrangements for exchange traded derivatives

Clearing houses manage risks by creating a range of safeguards against the default or insolvency of members and market participants. Any firm seeking access to clearing house services (clearing member) must fulfil some requirements – which are usually more stringent than those needed to become an exchange member – and other initial conditions so that a minimum standard of creditworthiness is guaranteed. The exchange members who do not fulfil the clearing house requirements and therefore cannot have access to its services (non clearing exchange members) must trade through a clearing member which assumes financial responsibility for their transactions and for those of any non member of the exchange for whom they execute trades.

Positions taken by clearing members are collateralised through margin requirements. Margins are paid in cash or high quality bonds and are posted to cover the current and possible future trading losses. The margin call usually occurs daily although in some cases it can be more frequent, particularly when there are sharp price swings. When a market participant is unable to meet a margin call and defaults when it cannot cover all position losses by liquidating the collateral he/she posted, losses are allocated to the market

[6] Historical peak settlement amounts did occur during the October 1987 stock market crash at major turning points in bond markets or following important exchange rate realignments.

participants either directly or indirectly through the clearing house own resources (assets supplied by clearing members).

The other relevant feature of the organisational structure of exchange-traded derivatives markets is the money settlement arrangement structure. Money settlements are executed by either the central bank or one or more private banks (settlement banks). Private bank money settlement is the only way to settle transactions when the clearing house or many members do not have access to a central bank account.

2.2.3. Sources and types of risks faced by clearing houses

Clearing houses bear credit, liquidity, delivery and settlement risks due to clearing members and settlement bank potential defaults. They are never freed from the contract obligations when one of their clearing members defaults on a margin call because the position of the clearing member on the other side of the original contract is still open. Consequently, they will generally try to replace the contract on which the clearing member defaulted by directly trading an identical one in the market. The replacement risk exposure depends on the default timing and the settlement procedures adopted by the exchange. Moreover, even if a clearing member defaults, the clearing house must perform its obligations to non-defaulting members on schedule and raise the necessary funds by either liquidating defaulting member's collateral or by spending its own financial resources. Large credit exposures can also be incurred on settlement days if the contract settlement requires physical delivery. When the two sides of the transaction do not act simultaneously, the party who pays/delivers first might not receive the corresponding payment/delivery form the counterpart.

In case of a settlement bank failure, the clearing house has to face credit and liquidity risks only if its account at the failed settlement bank has been irrevocably credited as this means that clearing members are discharged of any obligation towards the central counterparty. Settlement agreements may significantly reduce the clearing house's exposure to losses and liquidity pressures: either by shifting the risk of a settlement bank failure on the other settlement banks where the clearing house has opened an account or by netting the clearing house credits against its debts on each account so that the clearing house's exposure to losses is limited to the net amounts owned by clearing members.

In order to cope with defaults and liquidity pressures, clearing houses are generally largely capitalised. Even if its funds are invested in short term bank deposits or placed in highly liquid securities which entail low market risk, the clearing house is still exposed to some sort of credit and liquidity risk.

Finally, clearing houses face operational and legal risks. Operational risks refer to the fact that credit losses and liquidity pressure might be a result of inadequate systems (e.g. software, hardware and communication systems breakdowns that would hamper the clearing house ability to manage and monitor the settlement system), inadequate controls, human error and management failure. Legal risks refer to the fact that the clearing house's rights might be legally challenged. National legislation usually protects clearing houses' rights but if the defaulting participant's assets are regulated by a foreign jurisdiction legal conflicts might arise.

2.2.4. Approaches to risk management and potential weaknesses in risk management procedures

In order to manage the sources of risks identified in the previous paragraph (default by clearing members, failures of settlement banks, failure of operating systems and management errors, legal risks) clearing houses employ various safeguard procedures.

As mentioned earlier, clearing houses impose the fulfilment of membership requirements on firms seeking access to their services. However, membership requirements cannot eliminate the possibility of a clearing member's failure and are not usually designed to cover losses from sharp price movements. As a matter of fact, very stringent requirements could only be fulfilled by a small number of institutions; and, by imposing them, the central counterpart would therefore be exposed to a higher and not a lower credit risk due to higher risk concentration. That is why margin requirements and position limitations support membership requirements.

Clearing members are usually regulated institutions, whose financial soundness is therefore supervised by public agencies. They are usually required to meet only initial and ongoing minimum capital standards while no compliance with liquidity requirements is imposed. (Nevertheless, some clearing houses do periodically review their members' access to funding). Information on compliance with capital requirements is available only monthly or quarterly. Supervising them does not therefore allow the clearing house to monitor the clearing members' risk position between the regulatory reporting dates. For this reason, data about members' trade in the exchanges cleared by the central counterpart are also collected in order to improve the ongoing default risk monitoring. Moreover, clearing houses might require clearing members to report large trades conducted by their customers in order to monitor non-clearing members' market participant default risk. In this respect, a single counterpart providing its services to multiple markets is in a stronger position to monitor participants' overall trading books than a single exchange clearing house. In any case, information-sharing agreements among exchanges, clearing houses and financial regulators are increasingly developing in order to allow all clearing houses to obtain data on common members. However, as trustworthy and timely information on positions held on OTC markets is not available, it is almost impossible to make a reliable analysis of the overall financial condition of clearing members[27].

In addition to financial and data supply requirements, clearing members have to comply with operational reliability standards such as meeting tight deadlines for reporting trade to the central counterpart and for completing settlement obligations. To deal with operational risk, more and more frequently clearing members are also asked to support their primary operational systems with back-up ones. Clearing houses' credit and liquidity risk is also reduced by imposing limits on either the number of contracts or the total open interest in a contract that a single market participant can hold.

Margin requirements are meant to provide clearing houses with collateral to cover current and potential future losses on open positions. However, their level is typically based on a statistical analysis of potential losses over a one-day horizon and is calculated while seeking to optimise the trade-off between a broader coverage of the central counterpart's risk exposure and the cost margins required for clearing members. Therefore, margins are not designed to face extreme price variation. (Some clearing houses, however, can suspend trading when prices reach a fluctuation limit). Moreover, margin levels are calculated as if the clearing house were able to take action to close out the defaulting member position in one trading day from his failure to cope with the last margin call. Most clearing houses conduct one routine margin settlement per day; so, if a final settlement of the variation margin does not occur before the exchange opens the following day, more than one trading day might elapse before the clearing member default becomes apparent. Closing out its position can take additional time. This generally occurs when a large market participant default occurs as the market liquidity dries up.

[27] See Section 2.2.5

The central counterpart's ability to cover losses also depends on the liquidity of the assets which clearing members post as collateral. Clearing houses typically accept cash, short-term domestic government securities and some form of bank guarantees (such as standby letters of credit).

The frequency of settlements is the third key safeguard available to clearing houses in order to limit credit risk through the margining system. More frequent margin calls tend to reduce the clearing house exposure to credit risk as they prevent losses from accumulating. As floor trading is gradually abandoned for screen-based trading, technological improvements allow clearing houses to monitor members' position on a real time basis. On the other hand, this makes them more vulnerable to operational risks. Moreover, a higher frequency of settlements can reduce risks only if the transfers of funds are final.

The central counterpart may cover uncollateralised losses with its own resources. This entails some risks.

First, their size would make it impossible to protect the market integrity, as the factors that produce a need for supplemental resources are very difficult to quantify.

Second, effective deployment of the clearing house's own resources depends upon their liquidity. On the other hand, as clearing members then have a direct exposure to the losses of the central counterpart, their incentives to take excessive trading risks decrease. Moreover, market participants might have a reason to make sure that the central counterpart's risk management procedures are adequate. Clearing members monitoring the clearing house's risk management procedures might thus lower operational risks.

When money settlements are reached by using either one or more private settlement banks, clearing houses might also have to cope with settlement banks' failure. Settlement banks are generally highly rated financial institutions and, moreover, clearing houses tend to diversify credit risk by using multiple banks. This entails the need for inter-bank transfers to balance the clearing house's accounts at each settlement bank. However, since inter-bank transfers are made through the national payment systems, money settlements are generally not final until the payment system becomes final. Therefore, as mentioned before, since risk diversification might not constitute a safe enough bulwark, clearing houses tend to minimise their exposure through contractual agreements. However, since the number of counterparts involved in these agreements can be very high – including all clearing members, settlement banks and the clearing house – their structure can become extremely complex.

A lack of clarity regarding the obligations of various participants in the settlement process might make the clearing house seriously underestimate the potential losses from a settlement bank's failure.

2.2.5. Challenges facing clearing house risk management procedures

In addition to the risk sources already mentioned, the wave of restructuring affecting derivatives exchange market structure is driven by the competition from electronic communications networks offering low-cost trading. . There is therefore a pressing need to enhance clearing house risk procedures. Mergers and link-ups which allow customers to exploit cross margining and save on trading costs are creating global trading platforms. The increased risks faced by the central counterparts involved mean increased operational and legal risks.

Links between clearing houses take two forms: clearing links and mutual offset systems. The former involves a "home" exchange for the trading of the contract subject to the link and an

away exchange whose members may also trade the contract. When the transaction is first initiated by members of the away exchange, the away clearing house acts as counterpart. Subsequently, the away clearing house is replaced by the home clearing house. A mutual offset system allows exchange members to execute trades on both exchanges involved in the link but to hold their positions in a single clearing house. Therefore, links involve loss sharing problems. In mutual offset systems, a clearing house can also be exposed to losses from other clearing houses' defaults. Links are created through technological networks whose reliability is crucial to derivatives exchanges' ability to cope with intense stress on their clearing systems during periods of financial turmoil. Effective cross-border clearing is also possible only if there is certainty of offset in case of members' bankruptcy. Otherwise, legal wrangling could hamper the financial soundness of the central counterpart. Moreover, since various payment systems can be involved, settlement risks are enhanced by the need to deal with different standards and procedures.

Financial market regulators thus face new challenges: industry trends require national regulatory standards to converge and supervisors to work closely with their foreign counterparts. While IOSCO has long sponsored co-ordination among different national supervisory authorities, recently the EUREX case has made Swiss and German regulators agree on responsibility-sharing in exchange supervision. Moreover, as exchanges compete not only with regard to the cost and efficiency of their clearing systems but also the distribution networks (remote terminals are placed by exchanges operating in other countries both in EU member States and the U.S.), monitoring the creditworthiness of foreign members and changes in their financial conditions could be improved by information sharing among financial regulators and market authorities.

2.2.6. Steps to improve clearinghouses' risk management procedures

The consequences of competitive pressure on derivatives exchanges are twofold. On the one hand, as cost saving is crucial to survive, exchanges are less willing to impose strict requirements on their members. On the other hand, however, exchanges recognise that offering safe and effective clearing services is the only asset that can allow them to distinguish their offer from that of the electronic communication networks. Therefore, risk management procedures are now considered more important than they were in the past and exchanges may be more willing to share information with supervisory authorities. Technology enables clearing houses to impose lighter burdens on members' initial requirements through better position monitoring and data collection. However, more complete protection of the central counterparty's financial soundness could be achieved by:

1. periodically reassessing the clearing house needs of supplemental resources for meeting clearing members defaults. At this time, no agreed assessment procedures exist;
2. strengthen control of intra-day risks and introduce stress-testing procedures to calculate margin levels;
3. address weaknesses in settlement arrangements. Risk reduction could result from utilising payment and settlement systems that provide real time or intra-day finality of fund transfers; and by eliminating uncertainty about the obligations of the various participants in settlement arrangements in cases of clearing firm or settlement bank failure.

The effectiveness and efficiency of cross-border transactions and clearing arrangements could also be improved by increased international co-operation among regulators and exchanges in connection with the financial surveillance of members, market participants, clients and settlement banks; on legal matters; and in exchange supervision.

2.3. Leveraged Hedge Funds

2.3.1. Highly Leveraged Institutions: general characteristics

The recent turmoil in financial markets has raised questions on the safety and soundness of some financial institutions' investment strategies, in particular those adopted by hedge funds, commonly seen as one of the major cause of financial market instability. Nevertheless, as many studies have already pointed out, the characteristics of hedge fund investment strategies are not exclusive and can also be found in other larger financial institutional investors (e.g. trading and derivatives desks of banks and securities firms). In addition, though hedge funds are large in absolute terms and have grown significantly in the last two decades, they are still dwarfs compared to other institutional investors like banks, pension funds or mutual funds (see table 2.1).

Therefore, in order to have a comprehensive view of the big players behind capital flows during the recent financial crisis, we will adopt the BIS definition[28] which includes all relevant institutions bearing the following characteristics:

a) subject to very little or no regulatory supervision;

b) subject to very limited disclosure requirements;

c) leverage.

Hedge funds fall within this broad category since they are privately organised entities, generally subject to very limited disclosure requirement (compared with regulated financial institutions and/or publicly traded companies) and not subject to rating by credit-rating agencies. They take on significant leverage in various ways (mainly through the use of repurchase agreements, short position, derivative contract, and direct financing). It should be noted, however, that, since the hedge funds industry is very fragmented and extremely variegated in terms of the strategies adopted, it is difficult to generalise about the hedge funds' use of leverage[29].

2.3.2. Hedge Funds

Although not universally defined, hedge funds can be regarded as HLI with the following additional characteristics:

- they utilise a performance-based fee structure, rewarding fund managers primarily in proportion to the profitability of the funds invested;
- in addition to managing the fund as a general partner, the fund manager is generally an investor in the fund as a limited partner.

Hedge funds are private investment pools, typically structured as limited partnerships

[28] Basel Committee on Banking Supervision, 1999a, 1999c.

[29] Last year's LTCM's debacle drew the attention of several academics to how hedge funds surprisingly differ as regards leverage. According to *The Economist* few hedge funds were as hugely leveraged as LTCM which, by the time it was rescued, had piled roughly $50 of borrowing on to every dollar of equity. According to VAN, a hedge fund adviser, almost a third of hedge funds do not borrow at all; 54% borrow no more than the amount of equity their investment put into them; among the rest, it is extremely rare to see leverage greater than ten to one. The Basel Committee comes to the same conclusion, see Basel Committee on Banking Supervision, 1999a, 1999c.

(limited liability companies) in such a way as to be largely exempt from US regulation[30].

They can be classified into various categories, based primarily on the nature of their trading strategies but can be broken down into two general groups:

A) Macro or directional funds, which take positions based on assumptions about the appropriate level and the likely direction of fundamental economic indicators;

B) Relative/Arbitrage funds which take offsetting positions in closely related financial instruments (treasury bills and bonds for example), betting on their relative value[31].

However, a closer examination of these subcategories reveals extreme diversification. Some macro funds take positions mainly in mature markets; others take positions mainly in emerging markets. Some relative value funds specialise in fixed-income arbitrage, others in merger or distressed-securities arbitrage.

2.3.2.1. The growth of the hedge funds industry

It is difficult to obtain definitive data on the size of the market and the number of hedge funds because of the private nature of hedge funds and regulatory disclosure requirements. Historically, the first hedge fund came into existence in the early 50's as an equity fund organised as a private partnership which took both long and short positions in securities to enhance a portfolio's performance. Since then the phenomenon has changed significantly, not only in terms of the investment strategies applied but also in terms of size. After a few decades of modest growth, in 1990 the hedge fund industry began to experience a dramatic acceleration in growth and this growth is likely to increase even further for the following reasons:

- increasing acceptance of "alternative" investment strategies;
- enlarging the base of sophisticated investors, especially high net worth private individuals (HNW). The tremendous growth experienced by the structure known as "Fund of funds" has been helpful in this regard, allowing investors to access a portfolio of hedge funds for a much smaller amount than if they were to make a direct investment;
- increasing interest of institutional investors which wish to diversify their portfolios with a variety of investments having returns which are not highly correlated[32].

In order to understand the outlook for future growth and the development of the hedge fund industry, it is worth looking briefly at the current structure of the market. The industry appears to be concentrated at the top and very fragmented at the bottom. At one end, there is a small group of very large funds which represents an outgrowth of the first original global macro players, generally having assets of over $5 billion, with extremely high minima and long lock-up requirements. On the other end, there are a large number of small niche players run by one or a small group of individuals having assets of less than $100 million[33].

In order to be largely exempt from SEC regulation, the world of hedge fund investors is

[30] It is reasonable to assume that the US hedge fund market represents a very large portion of the total, nonetheless, there is growing attention on that issue in Europe.

[31] Relative funds tend to be more highly leveraged than Macro funds because the amount of capital needed to establish a position is relatively small on the instruments they hold.

[32] See Fung W. and Hsieh D. A.1997, Bekier M. 1996.

[33] Hedge funds with assets under management bigger than $500 million represent 57% of the total assets managed by hedge funds globally, although they make up only 4% of the total number of hedge funds. See KPMG, 1998.

actually limited to two specific groups: HNW private individuals and institutional investors (including pension and benefit plans, endowments and foundations, insurance companies, banks and corporations). Historically, HNW individuals have represented more than 80% of hedge funds assets. In the 1990s, this picture began to change with increasing participation of institutional investors (see table 2.8). Although the HNW market continues to grow significantly, it is reasonable to expect institutional investors to play a greater role since, as a group, they control almost twice the assets available for investment than HNW individuals[34]. Nonetheless, this is not likely – at least in the near future – radically to change the structure of the hedge funds industry as shown by the skyrocketing number of new small funds formed in the 1990's.

Only in the long run, as the hedge fund market becomes increasingly global, competitive (and hence more transparent[35]) and institutionalised, will the industry experience the first waves of consolidation as occurred in mutual funds the 1980's. At that point, institutional capital will probably be the key to sustainable asset growth.

2.3.2.2. The role of hedge funds in the recent financial crisis

Each episode of instability in international financial markets draws the increasing attention of government officials to the role played by institutional investors and hedge funds in particular. One popular generalisation is that hedge funds are nimble and quick off the mark. Their managers have a reputation for astuteness. A rumour that hedge funds are taking a position may thus encourage other investors to follow suit. Having said this, there is also reason to be doubtful that hedge funds are always the leaders in market movements. Hedge funds have low overheads; a small staff means that they have limited capacity to monitor conditions simultaneously in many markets. Many are consumers rather than producers of information. In so far as other institutional investors have better access to information and more extensive research capability, hedge funds may, in turn, follow their lead.

Several studies have been conducted on this issue, but since no comprehensive data are available about the extent of the activities of hedge funds, no consensus exists on the singular role in herding in financial markets played by hedge funds. According to several academic studies, however, hedge funds do not appear to have played a significant role in precipitating the financial market crisis of the past few years[36].

2.3.2.3. Disclosure and reporting

Hedge funds, like other institutional investors, are potentially subject to three types of prudential regulations:

1) those intended to protect investors;

2) those designed to ensure the integrity of markets;

3) those meant to contain systemic risk.

Investor protection regulations are employed in cases where the authorities perceive that investors lack the sophistication to understand certain kinds of transactions or instruments, or

[34] See KPMG, 1998.

[35] In order to have a good reputation, it is becoming increasingly important to be included in specialized sector indexes published by independent advisors. The newly launched Tremont Advisers/CSFB hedge fund index requires audited accounts and guarantees to provide monthly data.

[36] See Wei S. and Kim J. 1997, Krodes L.E and Pritsker M., 1997, Eichengreen B. and Mathieson D., 1998.

where they lack the information needed to properly evaluate them. Hence, such regulations generally either ensure that sufficient information is properly disclosed or exclude certain types of investors from participating in certain investments. Since participation in hedge funds tends to be limited to high-wealth individuals, hedge funds are generally exempt from regulation promulgated on these grounds. Even last year, turmoil in financial markets did not directly raise any significant investor protection concerns[37].

Regulations to protect market integrity try to ensure that markets are designed to keep price discovery reasonably efficient and prevent the concentration of market power, thus eliminating possible manipulation. Generally, these kinds of regulations (insider trading restrictions, position limits, order execution priorities and so on) apply to all participants, including hedge funds.

The financial crises of this decade have drawn particular attention to foreign exchange markets[38]. Hedge funds, even if located in offshore centres, to the extent that they operate in US futures markets, have to comply with regulations requiring registration, regulatory disclosure and record keeping for inspection by the Commodity Futures Trading Commission (CFTC)[39]. They are subject to the reporting system for large foreign currency positions administered by the FED[40] and they can be requested to provide information by the US Treasury Department on positions in recently issued securities[41]. Even if this set of regulations is probably not as organic as it should be during market turbulences, the case for further supervisory and regulatory measures specifically directed to hedge funds is not strong also bearing in mind that the positions that can be taken by hedge funds – even accounting for leverage – are still negligible in comparison with the position-taking capacity of other institutional investors[42]

2.3.2.4. Supervision

A third class of regulations is designed to protect against imprudent extensions of credit which could damage the financial system. It includes margin requirements, collateral requirements and limits on exposure to individual counterparts. These regulations affect hedge funds' business with banks, brokers and other counterparts. These issues were thoroughly discussed even before last year's LTCM's debacle[43]. Many of the concerns raised regarding hedge fund activities are also relevant to other large market participants, including regulated securities firms, banks and insurance companies. However, hedge funds raise these issues to a greater degree because:

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[37] Retail investors may only be indirectly exposed to hedge funds since they are investors in public companies or collective investment schemes that are institutional investors in hedge funds or are investors in firms that are counterparts to hedge funds. As these indirect exposures increase, the resulting risks may need to be addressed.

[38] See Eichengreen D. and Mathieson D. 1998, for an analysis of the role played by hedge funds during the latest crises.

[39] The same applies to the UK with the Financial Services Authority.

[40] In the US only extensive trade and positions above the $50 billion minimum are subject to weekly and monthly reporting requirements. This threshold, however, has not proven to be really effective since it is unable to catch most of the foreign exchange transactions of hedge funds.

[41] In the UK, the Bank of England has the power to ask players in various wholesale markets to provide information on selected aspects of their business.

[42] See table 2.1, Annex 2.

[43] In 1994, in response to concerns expressed at the time, the President's Working Group and the Stock Exchange Commission conducted a study on the failure of three hedge funds.

a) unlike regulated firms, hedge funds are not subject to specific capital requirements, direct supervision by competent regulators, or control of the adequacy of their internal risk management systems;

b) hedge funds tend to be significantly less diversified than regulated firms[44];

c) hedge funds issues are aggravated by the lack of transparency of financial information[45].

Given the extremely high fragmentation of the hedge funds industry and the difficulty to come to a universal definition of the phenomenon, international regulatory authorities have addressed systemic risk concerns deriving from hedge funds' (or more in general HLIs') activities by strengthening risk management regulation in securities firms[46]. This indirect supervisory process might include:

- obtaining information on the exposures of regulated firms to hedge funds;
- assessing the adequacy of and compliance with the risk management procedures of those regulated firms with material exposure[47];
- requiring more frequent or detailed information from firms which are considered to be at high risk as a result of management shortcomings
- imposing higher capital requirements or even prohibiting firms from dealing with hedge funds which provide insufficient information.

In addition to this indirect approach, international regulatory authorities have stressed the importance of greater transparency of hedge fund activities. While information on the positions of hedge funds operating through organised exchanges can be accessed by regulators or market authorities, information on the operations and the exposures of such hedge funds in unregulated markets is not readily available. This lack of sufficient information has been claimed to be a source of systemic risk, preventing market participants from appropriately assessing perceived risks to the market[48]. In this regard, IOSCO (November 1999) identifies the need for someone other than counterparties, such as regulators or market authorities, to have regular, timely disclosure about the hedge funds' positions. In this way, regulators might be able to form an opinion about whether some

[44] Hedge funds are trading entities whose assets generally consist only of their currently available cash, receivables arising from their trading activities and the financial instruments that make up their trading book. In circumstances when credit lines are no longer available, a hedge fund may have no immediate source of funding or liquidity, other than through an adjustment of its positions which may have a disruptive effect on financial markets.

[45] Hedge funds generally provide financial information to counterparts, but their financial conditions can rapidly change. The ongoing review of this information is a costly but necessary process for regulated firms which act as counterparts to hedge funds.

[46] Among the latest international regulatory initiatives: Basel Committee on Banking Supervision , 1999a, 1999c. The President's Working Group on Financial Markets, 1999, the Committee of IOSCO, 1999 and Basel Committee on Banking Supervision, 1999b.

[47] IOSCO 1999 addresses the trade-off between regular reporting by regulated firms involved with hedge funds and a more flexible case-by-case basis, pointing out advantages (it facilitates the efforts of hedge funds to prepare information for its various counterparts; standardised formats make it easier for regulators to use and share information with international regulators in the event of an emergency) and disadvantages (a template may well omit qualitative information on business objectives, risk-taking philosophy, necessary to understanding the numbers reported in financial statements and schedules) of standardised information.

[48] It has been argued that due to information asymmetry, the rapid easing of hedge funds' positions may lead to reactive selling by other investors who may eventually exacerbate its effect on the market.

particular hedge fund activity might adversely affect the stability or integrity of a market and, hence, require some new regulatory measures. Regulators can obtain such information from two sources:

- regulated firms, collected as part of their supervisory process on risk management systems[49];
- directly from the hedge funds themselves[50].

Both ways of reporting address some problems of effectiveness in practice:

- the information produced is likely to be incomplete, given that many hedge funds operate internationally and regulator's authority is limited by the scope of its jurisdiction;
- co-operation between different market authorities, though possibly improved by making use of appropriate information sharing-agreements, will probably be unable to identify, correctly and in time, developing trends in the markets[51];
- where risks are successfully identified, regulators may not have the necessary powers to address the issues effectively.

Speaking in favour of direct reporting from hedge funds, IOSCO, however, stresses the broader need of additional transparency regarding hedge fund activities to market participants (public disclosure).

2.3.3. Open issues

The distress experienced by LTCM last year and the related potential disruption in financial markets have raised some public policy issues which are still open. They include how to monitor, or even control, the use of leverage of market participants in order to determine the proper balance between the benefit leverage confers to the market and the potential risk posed by high levels of leverage[52].

Placing direct constraints on leverage presents certain problems. Given investors' diverse exposures to risk and differences in their links to other market participants, requiring a uniform degree of balance sheet leverage for all investors does not seem reasonable[53].

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[49] Obtaining information from regulated firms rather than directly from hedge funds presents the advantage of a much clearer authority which can compel regulated firms to provide information. In addition, the incremental cost of providing the information may be lower for regulated firms that already have mechanisms in place to provide it. There are, however, also some disadvantages: the provision of data on a comparable and timely basis could present major difficulties given the different bases on which regulated firms justifiably collect information.

[50] However, directly requiring such kind of information from hedge funds raises some issues. Even if a hedge fund may be less reluctant to report certain sensitive competitive information to a regulator, it might accept the assurance that the market authority's public releases would not reveal its identity to the market.

[51] In order to understand how quickly financial condition of hedge funds can radically change (generating systemic risks for financial markets), it should be noted that in the case of LTCM 84% of the total losses experienced between January and August of last year occurred in August.

[52] Like other market participants, hedge funds, which have a high tolerance for risk, play an important supporting role in the reallocation of financial risks, undertaking investment positions on the relative prices of related assets when the relative prices diverge from either historical norms or from the levels justified by fundamental macroeconomic considerations. In doing so, these investors provide liquidity to markets because they buy and sell assets against the prevailing market sentiment thus mitigating temporary supply and demand imbalances.

[53] See IOSCO 1999.

A high capital requirement based on balance sheet concepts alone might make fund managers j-shift their risk-taking activities to more speculative trading strategies as they seek to meet rate of return targets on the required capital. An alternative measure to balance sheet leverage is the ratio of potential gains and losses relative to net worth, such as value at risk relative to net worth. An advantage of such a statistical measure is its ability to produce a more meaningful description of leverage in terms of risk.

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Chapter 3

The transparency of markets and the measurement and control of risks

3.1. Market transparency

3.1.1. The issues of market transparency from various perspectives

The disclosure of information about the financial conditions of countries, and the risk exposure of banks and securities firms, has recently received renewed attention. There is unanimous consensus on the need to improve transparency.

The basic idea is that "Well-informed investors, depositors, customers and creditors can impose strong market discipline on an institution to manage its activities and risk exposures …"[54]. In other words, transparency is a necessary complement to supervision which it reinforces while contributing *per se* to the financial soundness of institutions and forcing greater public accountability. A number of initiatives are under way at international and domestic level: the Basle Committee, the G7 Finance Ministers' group, the G10 central bank Governors' group and international financial institutions such as the International Monetary Fund and the World Bank. All made specific calls for progress in this area.

The aim of the following sections is to offer an overview of the various initiatives underway. Disclosure of information is presented from both a macroeconomic and a microeconomic point of view. In the latter, it is useful to consider both the point of view of those who regulate and supervise banking and securities firms as well as of those who define the accounting principles to be used.

In recent years, the most critical areas of disclosure have been related to securities trading, derivatives, loans linked to portfolio management and credit risk assessment.

Given the number of bodies involved, the objective is to give a clear and comprehensive state -of-the -art overview and assess the consistency of the approaches used. In this way we hope to draw the readers' attention to the issues which are being examined or which might undergo change with the view of facilitating the contributions of the European Community representatives to the appropriate working parties and decision-making bodies.

3.1.2. Macroeconomic data dissemination

Increased dissemination of macroeconomic and financial data is considered an important means of building a more efficient and stable international financial system, and therefore an instrument to facilitate the pursuit of sound macroeconomics policies. There is a significant degree of consensus in the international community on the need to improve transparency and data quality. The most relevant areas of financial data dissemination are countries' internal reserves, external debt, capital flows and indicators of financial sector soundness.

In recent years a number of initiatives have been taken in order to achieve these goals**.**

[54] See Basel Committee on Banking Supervision and Technical Committee of the International Organization of Securities Commission, 1999.

A) Traditional tools: SDDS and GDDS

In March 1996, the IMF established the Special Data Dissemination Standard (SDDS) and in December 1997 it set up the General Data Dissemination System (GDDS) to enhance the availability of timely and comprehensive statistics and make them available to the public[55]. The existence of a two-tier system with parallel vehicles to work on data dissemination standards means recognising that different countries may be at different stages of development of their statistical systems. Consequently, different frames of reference are required.

While the SDDS is addressed to countries that already meet high data quality standards, and is mostly focused on the real economy, the public sector, the financial sector and the external sector, the GDDS has a broader scope since it also includes socio-demographic data.

It is assumed that the two systems will have to be reviewed and adapted periodically in order to be in line with changes in the global environment. Recent international financial crises have highlighted, among other things, the need for modifications[56]. Consequently, in December 1998 and March 1999 the IMF Executive Board agreed to strengthen its SDDS in the areas of the debt and international reserve and to develop monitoring procedures[57].

A strong incentive to adhere to internationally-recognised disclosure standards was created through the IMF's newly approved financing mechanism (the Contingent Credit Line). It offers a precautionary line of defence in the event of international financial contagion, but only to those members which meet standards in terms of data dissemination. This solution has been strongly supported by different parties[58].

B) A new tool: the "Transparency Reports"

The sovereignty of states, however, implies that countries cannot be compelled to disclose information. Thus a substitute for the inability to make transparency mandatory is the principle of "transparency about transparency". On this basis, the G22 Report recommended that the IMF – in the framework of its Article IV consultations – prepare a Transparency Report for each country, summarising the extent to which that economy complied with disclosure standards and codes of conduct. The IMF already releases Experimental Reports on the Observance of Standards and Codes (once referred to as "Transparency Reports")[59]:

[55] The IMF's Dissemination Standards Bulletin Boards provide information about the two systems and were opened on the Internet in September 1996 (www.dsbb.imf.org). Both systems were created after wide-ranging consultations with providers of statistics and user groups around the world. Public access to reliable, comprehensive and timely data is intended to allow market participants to compare information on potential borrowers against agreed benchmarks. This should lead to better informed lending and investment decisions and increased accountability of policymakers, resulting in improved economic performance.

[56] The G7 Ministers of Finance and Central Bank Governors in their declaration of October 30, 1998 endorsed the current efforts of the IMF to strengthen the SDDS, including the provision for more comprehensive information on reserves and improving statistics on external debt and a country's international investment position. Even the Report of the G7 Finance Ministers to the Cologne Economic Summit (June 1999), addresses the issue of enhancing transparency and promoting best practices.

[57] The expanded SDDS will go into effect in April 2000.

[58] In fact, one of the two issues that emerged from the comments and suggestions made following the October 1998 Reports on the International Financial Architecture was the need for measures to implement international standards. For instance, sme parties suggest the use of sanctions, such as conditioning access to financial assistance from IMF to a country's adherence to international standards.

[59] The pilot reports on transparency in the UK and Argentina are the first, other pilot reports are to come. Australia has published a self-assessment transparency report.

the case studies are prepared by IMF staff in co-operation with the respective country authorities and, in some cases, with the assistance of the World Bank.

C) Data dissemination of authorities' foreign currency liquidity position

With reference to statistical information that would enable financial markets participants to assess more precisely the authorities' foreign currency liquidity position, the Euro-Currency Standing Committee made a proposal last year[60]. The belief is that improvements in disclosure practices by the G-10 countries could help to encourage similar behaviour in emerging market countries.

In March 1999, the IMF's SDDS was strengthened by the inclusion of a template covering the disclosure of net foreign exchange reserves and short-term foreign currency liabilities of central governments

D) Data dissemination of external debt indicators

Finally, in response to requests for more dissemination of external debt indicators a joint initiative of the BIS, IMF, OECD and the World Bank was taken[61]. In response to the above-mentioned need, the publication also includes data on international reserves.

E) The transparency and accountability of IFIs

A more specific and recently highlighted issue is the transparency and accountability of International Financial Institutions[62]. They have taken several steps to strengthen their credibility as proponents of transparency and to enhance their accountability to the general public. As a matter of fact, there is a strong support for these positions shown by the comments in the Reports on the International Financial Architecture (August 1999) and the positive reaction to calls for greater transparency also by International Financial Institutions.[63]. In the meantime the International Financial Institutions undertook several actions to strengthen their credibility as proponents of transparency and to enhance their accountability to the general public[64].

3.1.3. Problems arising from the growing need for disclosure and transparency

The adoption of the principle "of transparency about transparency" and the publications of "Transparency Reports" may raise a typical conflict of interest. The IMF may act as a confidential policy advisor while simultaneously publishing its judgements.

Another open "technical" issue is that the development of standards, and performance monitoring, is a demanding job which involves potentially large resources, mainly from the Fund and, to some extent from all the parties involved. To ensure maximum effectiveness of all disclosure initiatives and to ensure that scarce resources are used in the most efficient

[60] See EURO-CURRENCY STANDING COMMITTEE, 1998a; 1998b and (1999.

[61] This initiative aims to facilitate access to a single set of data which brings together information currently compiled and published separately by the contributing institutions. It is a project of the Inter-Agency Task Force on Finance Statistics, which is chaired by the IMF and comprises, in addition to the BIS, IMF, OECD and World Bank, the United Nations, the European Central Bank, and Eurostat.

[62] See Report of the Working Group on Transparency and Accountability, October 1998, Chapter 4.

[63] Numerous proposals were formulated by interested parties. See Comments on the reports on the international financial architecture, August 1999.

[64] With reference to the IMF see "Efforts to Improve Transparency and Accountability" in IMF 1999a, 1999b.

manner, these different instruments need to be effectively co-ordinated, and outputs need to be as complementary as possible.

Pending issues are the involvement of the World Bank in preparing case studies and the implementation of standards outside the IMF's core areas so that financial systems can operate effectively.

In order to ascertain if International Financial Institutions have overlapping mandates, a clear indication of domains of relevant responsibility is essential.

The co-operation of all bodies is also vital for success. In the Declaration of October 1998 the G-7 Finance Ministers and Central Bank Governors called upon the Fund, World Bank and OECD and the international regulatory and supervisory organisations to work closely together to provide advice and, if necessary, assistance to countries to help them meet internationally agreed codes and standards. An interesting example of incentive to improve disclosure is the recognition of internationally accepted standards in the risk-weighting of exposures[65].

3.1.4. Financial institutions' disclosure and risk assessment: the supervisory perspective

Markets entail disciplinary mechanisms which can reinforce the actions of supervisors by rewarding banks that manage risk effectively and penalising those whose risk management is incompetent or imprudent. Recognition of this led to the reinforcement of disclosure at the level of financial institution units (mainly banks and securities firms). It is part of a wider project to strengthen the architecture of the international financial system with specific reference to the private sector.

Public disclosure and supervisory information that promote safety and soundness in banking systems are amply discussed in the Basel Committee on Banking Supervision[66]. The document aims to provide general guidelines for banking supervisors, legislators and other standard-setters in their task of defining the regulatory framework for public disclosure and supervisory reporting and the banking industry directly.

Transparency is therefore defined as the "public disclosure of reliable and timely information that enables users of that information to make an accurate assessment of a bank's practice". This recognises that disclosure alone does not necessarily result in transparency.

Common to all the above mentioned recommendations for enhancing banking transparency are two important principles:

i) the scope and the content of information provided and the level of disaggregation and detail should be commensurate with the size and nature of a bank's operations,

ii) the methods of measurement will depend on applicable accounting standards. This calls for further work at national and international levels.

Suggestions for further improvement of disclosure by banks and other financial intermediaries have also been put forward in the section entitled "Transparency and

[65] See Basel Committe on the Banking Supervision, 1999c, Annex 2, § 9: "The Committee does not believe that banks should rely on an external assessment of a sovereign borrower where the sovereign does not provide sufficient information about its financial and economic status. Accordingly, the Committee is of the view that, to be eligible for a risk weighting below 100%, the sovereign would have to subscribe to the IMF's Special Data Dissemination Standards (SDDS), which provide standards for participating countries in disseminating economic and financial statistics, including to the international financial markets. ….."

[66] See BIS-Committee on The Global Financial System, 1998.

accountability of the private sector" in the report of the working group on transparency and accountability, based on a clearer assessment of deficiencies and areas for improvement. The Report addresses the problem of discrepancies in accounting principles and standards[67], and underlines the high priority of establishing sound practices for loan valuation, loan-loss provisioning and credit risk disclosure.

It also calls for initiatives which involve private sector representatives, the improvement of international banking statistics as well as data on international exposures of investment banks, hedge funds and other institutional investors. Finally, the Report mentions the issue – examined in greater detail in the reports of the two other working groups – of the need for appropriate incentives to use information.

Furthermore, in the "Core Principles Methodology for effective Banking Supervision", the role of bank's disclosure has been put forward in Principle 21[68,]. Subsequently, two issues have been studied more thoroughly by consultant groups within the supervisory authorities:

- public disclosures of trading and derivatives activities of banks and securities firms;
- credit risk disclosure and loan accounting and disclosure.

The first issue is backed by the long experience of the Basle Committee on banking Supervision and the IOSCO Technical Committee in monitoring and debating the problem. These two Committees have recently issued a paper with the aim of promoting the transparency of all significant trading and derivative activities of large banks and securities firms by providing guidance on appropriate disclosures.

The second issue, i.e. credit risk disclosure and loan accounting and disclosure, is more traditional in the banking sector and in banking supervision practices. However, the issue of best practice guidance is considered useful, as demonstrated by the fact that poor credit quality together with weak credit risk management continue to be decisive factors in banking crises and failures.

Furthermore, credit risk emerges not only in lending activities, but also in other types of banking activities, including trading, investments, liquidity, funding and asset management. Financial innovation processes produce new features of credit risk. There is, therefore, an increasing need to develop an appropriate model to assess these risks and produce timely and accurate disclosure.

In the area of credit risk and related issues the Basel Committee recently produced a number of papers[69]. The common aim of these is to ensure that banking assets and income are fairly and prudently stated, and, as a result, capital properly measured.

Emerging issues include fair value accounting for financial instruments including loan portfolio and fair value disclosures, as well as new approaches to credit risk provisioning based upon internal credit rating. These supervisory principles are not independent from accounting treatments and criteria prepared by accounting standard-setters at international and national levels.

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[67] For a discussion of the problem see Section 3.1.4.

[68] It states that: "*Banking supervisors must be satisfied that each bank maintains adequate records drawn up in accordance with consistent accounting policies and practices that enable the supervisor to obtain a true and fair view of the financial condition of the bank and the profitability of its business, and that the bank publishes on a regular basis financial statements that fairly reflect its conditions*". See Basel Committee on Banking Supervision, 1999a.

[69] See Basel Committee on Banking Supervision, 1999d, 1999e, 1999f, 1999g.

3.1.5. Accounting initiatives at the international level

The quality of a set of accounting standards directly influences the reliability of the available financial information, both at the national and international level. This is particularly true when information concerns a growing share of financial activities in international markets: derivatives contracts.

At the international level, derivatives accounting issues could be divided into institutional initiatives and private ones. On the one hand, the most relevant contributions come from the UNCTAD Forums and the Bank of International Settlement publications. On the other hand, it is important to quote two supra-national bodies which represent a number of private associations: the U.S.- based Financial Accounting Standard Board (FASB), and the Europe-based International Accounting Standard Committee (IASC). These organisations have published two sets of accounting standards dealing with financial instruments disclosure and accounting issues. The US- based set of standards mainly refers to the Statement of Financial Accounting Standard (FAS) N.133 and N.137; the European-based one is determined by the International Accounting Standard (IAS) N.32 and N.39. These standards fill the gap in the regulation of derivatives accounting and present a fairly consistent set of principles which identify and measure derivatives contract. However, in order to become effective, these sets of regulations must overcome a number of obstacles.

In this general survey, some contributions to the derivative accounting issue, at the national level, come from the experiences of Canada, France, Japan and the United Kingdom[70]. Furthermore, besides these wide-range initiatives, it is also interesting to consider the role and the contribution of Professionals Organisations, which sometimes constitute formal opposition to the criteria of the Accounting Standard Bodies.

3.1.5.1. The United Nation financial disclosure by banks and the BIS initiatives

The UNCTAD recently released a document which embodies the proceedings of an UNCTAD forum on the issue of financial disclosure by banks[71]. The key issue, at the basis of this document, is summarised as follows:

> "*Accounting rules drive disclosure, and better disclosure stimulates better management and provides the information needed to deal with risk. Therefore, the use of international standards can contribute to financial stability and sound banking sector*".

This sentence demonstrates the international conviction of the importance of a consistent, homogenous and internationally acceptable set of rules regulating financial instruments and derivative accounting procedures. Thus, financial statements transparency and disclosure are intended to reduce systematic risks in international financial markets and to prevent world-wide economic and financial crises.

The BIS initiatives on derivatives accountability issues can be related to two main currents. On the one hand, it is important to consider the activities of the BIS Working Group on

[70] See "The Handbook of the Canadian Institute of Chartered Accountants Section 3860, Financial Instruments-Disclosure and presentation"; Guideline D-6 "Derivative Disclosure" from the Office of the Superintendent of Financial Institutions (OSFI), October 1995. See "French Guidance on market disclosure", from National Accounting Council (CNC), Advice n. 98/05 and Recommendation n. 98.R.01. See "New regulations about market value accounting for trading activities", Switzerland: "Guidelines concerning Risk Management Trading and use of derivatives", 1996. See, also, the "Derivatives and other financial instruments: disclosure", a Financial Reporting Standard (FRS) n.13, from the UK Accounting Standard Board, September 1998.

[71] See: UNCTAD, 1997.

Transparency and Accountability. In October 1998, this Group issued a document entitled "Reports on the international financial architecture". The main result of this document was to address a series of disclosure recommendations to the private sector, national authorities and international financial institutions[72]. In particular, as regards the private sector, the document underlines the importance of "*enhancing the relevance, reliability, comparability and understandability of information disclosed by private sector*"[73]. This seems to recommend that "*priority be given to compliance with an enforcement of high-quality accounting standards*". The accounting principles and standards need to endorse "*useful, meaningful and understandable*" disclosures. In order to achieve this the disclosure should cover five broad areas:

1) *timeliness*;
2) *completeness*;
3) *consistency*;
4) *risk management*;
5) *audit and control processes*.

Furthermore, the Working Group recommends that "private firms should adhere to national accounting standards". This represents a further recognition of the key role of International Accounting Standards.

It is also relevant to keep in mind the Joint Report of the Basel Committee on Banking Supervision and the " Iosco" Technical Committee. In its most recent publication of October 1999, the two Committees made a series of recommendations which were sent to banks and securities firms. They included recommendations related to "Accounting and valuation methods"[74] which comprise a series of tasks linked to information about derivatives management and accounting which should be disclosed (accounting policies and methods of income recognition for the trading and not-trading derivatives, hedge accounting criteria, policies and procedures followed for netting assets and liabilities arising from derivatives transactions…).

3.1.5.2. The Statement of Financial Accounting Standard (FAS) N.133 and N.137

The Financial Accounting Standards Board (FASB) is the private-sector organisation empowered to establish financial accounting and reporting standards in the United States. The aim of the FASB is to establish and improve standards of financial accounting and reporting for the guidance and education of the public, including issuers, auditors and users of financial information.

In June 1998, FASB adopted the Statement of Financial Accounting Standard n. 133, entitled "Accounting for derivatives instruments and hedging activities"[75]. This statement should have become effective on 15 June 1999, but the contents were so innovative that the Board decided to issue a further Statement (the FAS n.137) in order to postpone the date it would

[72] Therefore, the diffusion of widely-accepted international accounting standards seems to be legitimated. A summary of the main recommendation of this Working Group is given in Annex 1, Box 3.1.1

[73] See: BIS Working Group on Transparency and Accountability, 1998.

[74] An abstract of these recommendations is given in Annex3, Box 3.1.2.

[75] This standard was preceded by an Exposure Draft on the "Accounting for derivatives and similar financial instruments and for hedging activities". This exposure draft drew a number of comments. On the issue see: Boyd J.F., Hayt G.S., Reynolds R.C., Smithson C.W., 1996; Sharpe M., 1996.

become effective. In fact, alluding to concerns about companies' ability to modify their information systems and educate their managers in time to apply Statement n. 133 on derivatives and hedging, the Financial Accounting Board made it effective as of the fiscal years beginning after June 15, 2000. The delay, published as FASB Statement n.137, applies to quarterly and annual financial statements.

Statement n.133 establishes accounting and reporting standards for derivative instruments - including certain derivative instruments contained in other contracts (collectively referred to as derivatives) - and hedging activities. The content of FAS n.133 can be summarised on the basis of the following key-points:

a) the *definition* of *financial/derivative instruments* and of *fair value*;

b) the *recognition* of these instruments in balance sheets/financial statements;

c) the *on-going measurement* of these instruments; and

d) the *hedging accounting*.

Derivative instruments represent rights or obligations that meet the definitions of assets or liabilities and should be reported in financial statements. Every entity must recognise all derivatives as either assets or liabilities, and has to measure them at *far value*. Furthermore, the entity must disclose its reasons for holding or issuing derivatives. The entity should indicate its risk management policies, including a description of the items or transactions for which they are hedged. A derivative may be specifically designated as:

a) a hedge of the exposure to changes in the fair value of a recognised asset or liability or an unrecognised firm commitment;

b) a hedge of the exposure to variable cash flows of a forecasted transaction;

c) a hedge of the foreign currency exposure of a net investment in a foreign operation, an unrecognised firm commitment, an available-for-sale security or a foreign-currency-denominated forecasted transaction.

For each derivative instrument not designated as a hedging instrument, the description should indicate the purpose of the contract. A particular accounting treatment is specified according to the designated use of the derivative. Finally, disclosure is required as regards the resulting earning effects for each derivative.

3.1.5.3. The International Accounting Standard (IAS) N.32 and N.39

The International Accounting Standard Committee is an independent private sector body comprising representatives of 143 professional accounting bodies from 103 countries. The European Commission has an observer status on the IASC Board which approves International Standard Accounting (the IASs). The International Accounting Standard (IAS) n.32 was issued by the International Accounting Standard Committee (IASC) in June 1995. This document includes:

a) the classification by issuers of financial instruments and liabilities or equity and the classification of related interest, dividends, and gains and losses;

b) the offsetting of financial assets and financial liabilities;

c) requirements for disclosure of

- terms, conditions and accounting policies for financial instruments;
- interest rate risk and credit risk data;

- the fair value of on- and off-balance sheet financial instruments.

An integration of this document was issued in December 1998. On this date, the IASC Board adopted the IAS n. 39: "Financial Instruments: recognition and measurement". This standard introduced disclosure requirements for financial risk management objectives and policies. This document aims to "*establish principles for recognising, measuring, and disclosing information about financial assets and financial liabilities*". It IASC's first comprehensive Standard on the subject. IAS 39 is effective for financial statements for financial years beginning on or after 1st January 2001. Earlier applications are permitted only at the beginning of a financial year that ends after the date of issue of this Standard, that is 15 March.

Given the presence of two accounting standard-setters (the European and US-based ones), which adopt comprehensive standards to recognise and measure financial instruments, the international debate is focused on finding the differences or similarities, between them. As can be easily seen in table n. 3.1.3., there are very few differences between IASC and FASB standards. Furthermore, the differences involve more *formal* aspects rather than *substantial* ones (e.g. the difference in cash flow hedge accounting). The main pillars are mainly:

a) the recognition of derivatives contracts as financial instruments *to be drawn in the balance sheets*; and

b) the evaluation of derivatives contracts, like most other financial instruments, at their *fair value*.

In many countries, the degree of innovation of these standards is very high. Changes in information systems and in accountability procedures might sometimes be very great (and expensive), as shown by the opposition of many Professional Associations to applying the fair value as the evaluation criteria for derivatives contracts.

3.1.5.4. Professional Organisation initiatives

In this section, a brief description is given of the most relevant initiatives of the main Professional Organisations involved in derivatives accounting issues.

IFCA's International Accounting Practices Committee (IAPC) is currently in the process of revising references to derivatives in its International Standards on Auditing (ISAs). The project is expected to be completed in about a year. In September IFAC's Financial and Management Accounting Committee (FMAC) issued Study n.4 entitled "Reporting Treasury Performance - A Framework for the Treasury Practitioner". The document briefly described derivatives and associated risks (counterparty and market risk). As regards accounting standards and disclosure issues, IFAC agrees that they are within the domain of the International Accounting Standards Committee (IASC).

The International Association of Treasurers (IT) was one of the first promoters of the request to postpone the starting date for FAS n.133[76]. To support this request, in late November 1998, this Federation conducted a survey (called "FAS 133 Survey") to assess the state of treasury readiness, as well as some of the more immediate effects of the new standard. The findings, based on the responses of a representative sample of leading US multinationals, reveal some key trends:

a) most companies planned to adopt FAS 133 on-time, and not before (See Chart 3.1.3.);

b) an overwhelming majority of treasuries did not have systems that could handle FAS 133,

[76] See: www.fas133.com.

and instead, most expected to upgrade existing systems (See Chart 3.1.4.);

c) most respondents expected to rewrite risk management policy to meet FAS 133 requirements and expected that this standard would encourage more accounting- rather than economic-driven hedging;

d) most treasurers saw differences in derivatives accounting implementation procedures (more difficult for swaps, easier and much interesting for forwards).

The International Treasurers also wrote a draft letter to FASB outlining the key reasons behind companies' potential inability to comply with FAS 133 in time for the deadline of January 1st 2000, and suggesting alternatives to a full-scale effective-date delay. Furthermore, the Federation conducted some research in order to foresee the effects of FAS 133 on risk management practices. The conclusions were the following:

a) for most companies, FAS 133 is the single biggest project on treasurers' 1999 task list; and

b) while tactical in nature, it will consume large resources and management time.

Most companies, particularly by June 30th year-end, were still unprepared to implement FAS 133 and most were not expected to make it on time [77].

In order to improve disclosure and transparency in the use of derivatives, the *ISDA* commitment and task is to issue Standard Contracts which are used by operators: the so-called "*master agreements*". They generally establish the terms and conditions of OTC derivatives transactions, with both other dealers and end-users.

At the beginning of October 1999, the *Joint Working Group of Banking Associations on Financial Instruments* (JWG-BA) issued a paper entitled "Accounting for financial instruments for banks", as a basis for discussion with the Joint Working Group of Standard Setters (JWG-SS[78]). This banking association group was specifically created to take part in discussions with the standard setters (the JWG-SS, and before the IASC). The JWG-BA document stemmed from the

> "*growing perception, within the banking industry, that standard setters have not recognised the depth of concern over their radical proposals on accounting for financial instruments. Banks do not accept the working premise of the standard setters – that fair value measurement is always "superior"- and do not believe that there is a demand for users, whether public or professional, for this radical agenda*".

In short, the JWG-BA believes that the needs of the users of bank financial statements are already being met by the existing accounting measurement and disclosure practises of the banking industry.

Finally, the contribution of the *Fédération des Experts Comptables Européens* (FEE)[79] as

[77] For the reasons behind the delay request, see in Annex 3, the box 3.1.5.

[78] On 31st August 1999 this Working Group issued a document entitled "Financial Instruments- Issues relating to Banks" in order to confirm: a) the general relevance of fair value in comparison with cost-based measures of financial instruments; b) the feasibility of reliable fair value measurement; c) the differences between banks. The main result of this document was to onfirm the theoretical and operative application of "fair value" as the measurement principle for derivatives.

[79] The Fédération des Experts Comptables Européens (FEE) is the representative organisation for the accountancy profession in Europe which currently groups together the 38 most important organizations in 26 countries, including the 15 Member States, Cyprus, Czech Republic, Hungary, Iceland, Israel, Malta, Monaco, Norway, Romania, Slovenia and Switzerland.

regards those issues has been quite different over the years. During 1996 and 1997, one of the most relevant issues was the divergence between the US and EU derivatives accounting procedures[80]. Therefore, the FEE issued a paper entitled "Accounting Treatment of Financial Instruments - a European perspective" which contained recommendation on how the EU directive on the Annual Accounts and Consolidated Accounts of Banks and Other Financial Institutions could be changed to recognise, measure, disclosure and present derivatives more accurately.

The debate went on until the "*FEE Discussion Paper on a Financial Reporting Strategy within Europe"* of 8 October 1999. In this paper, the FEE promoted a very innovative and strong position, that is, the support of "*the work of the IASC*" and the conviction

> "*that IASs currently represent the best opportunity to achieve both global and European harmonisation of financial reporting standards. The prospect of this objective would be undermined by the creation of additional regional standard setting bodies, or by the Accounting Directives not keeping pace with international developments*".

This brings the FEE to the conclusion that companies should be allowed to use IASs *instead* of national GAAP (General Accepted Accounting Procedures), *without requiring compliance with the Accounting Directives*. In order to achieve these goals, the FEE proposes that a new body be established - the *European Financial Reporting Co-ordination and Advisory Council*.

Given all these details, the serious problem now is the different binding power of International standards and European Commission Directives. This issue is going to become more complex, given the forthcoming European Commission recommendation on the issue of "Disclosure of information on financial instruments".

3.1.6. The accounting initiatives at the European Union level

This section aims to describe the most relevant initiatives as regards derivative contracts accounting principles and techniques issued by European Union institutional bodies. The general principles for the annual balance sheet statements and accounting standards are defined by:

a) Directive n.660 of 1978, for the general discipline in annual accounts issues (Company Law Directive);

b) Directive n. 635 of 08.12.1986, for annual and consolidated accounts issues of banks and financial intermediaries (Bank Accounts Directive);

c) Directive n.117 of 1989 on disclosure issues of banks and financial intermediaries subsidiaries; and

d) the European Commission Document n.338 of 24.07.1996, also known as "Green book on the legal accounting audit in the European Union".

The Bank Accounts Directive prescribes "*uniform treatment regarding the disclosure of various transactions on and off the balance sheet*" by banks and other financial institutions. In this directive, member states require financial institutions to disclose "*any irrevocable commitment which could give rise to a risk*" in the *notes* to their financial statements and to state "*the nature and amount of any type of commitment which is material in relation to an institution's activities*". A reporting institution is also required *to include in its notes a*

[80] See Avezedo M. P., Lindley D.M., 1997.

statement describing unmatured forward transactions held on the balance sheet date and disclosing whether they are being used to hedge market risks[81].

It is also important to keep in mind a forthcoming European Commission recommendation on the issue of "Disclosure of information on financial instruments". As is well known, this European Union body is committed to keeping up with developments in the accounting filed at the international level. Therefore, the European Commission is abiding by a recommendation to establish principles and methods to improve disclosure levels on financial instruments for the annual accounts of banks and financial institutions.

The problem now is to co-ordinate the regulation of derivatives accounting between the European Commission Derivatives and the International Accounting Standards, as foreseen by the recent FEE document mentioned above.

3.1.7. Open issues

During the 80's and early '90, there were many shortcomings in US and European accounting systems for derivatives including:

a) incomplete reporting - many companies carry derivatives off-balance sheet regardless of whether they are part of a hedging strategy;

b) inconsistent reporting - in applying varying accounting standards, accountants tend to measure derivatives differently, treating them differently according to the type of instrument used for hedging and the type of risk being hedged;

c) complexity - the lack of a single, comprehensive accounting approach to derivatives creates reporting difficulties;

d) lack of transparency - current standards lack the necessary procedures to ensure that the effects of derivatives are always properly reflected in financial statements[82].

Since 1995, many institutional authorities, standard setters and professional associations have begun dealing with this issue. Thus, a number of "over-regulations" have emerged. Currently the open issues are the following:

a) the need to harmonise the US and EU approaches to the derivatives accountability procedures (quite solved with FAS 133 and IAS 39);

b) the need to harmonise different binding power sources of regulation: International standards, Accounting European Union Directives, national standards (GAAPs);

c) the costs and availability of accounting systems able to handle fair value- based measurement, in particular for financial institutions; and

d) the informative effects of fair-value –based accounting system on the income results of financial institutions (widely influenced by short-term prices fluctuations).

A relevant issue is how to co-ordinate co-existing standards with different binding power (for example, in Europe, the European Commission Accounting Directives and the International Accounting Standards). Moreover, the recent set of derivatives accounting standards do not meet with the complete approval of some Professional Associations.

The debate continues.

[81] See Azevedo M.P., Lindley D.M., 1997.

[82] See Azevedo M.P., Lindley D.M., 1997.

3.1.8. Policy proposals

There is evidence of a general need for the international community to develop a strategy both to encourage countries to implement the IASC standards and to monitor their implementation. Nevertheless, the positions of the addressee of these standards should be carefully considered.

We advise European authorities to speed up the regulatory procedure in order to match market requirements and avoid rapid obsolescence.

3.2. Risk measurements and control

3.2.1. Introduction

Recent years have seen a significant increase in the complexity of financial institutions' trading portfolios and in financial market volatility. While in the past, bank crises were mostly generated by credit risk, in the last twenty years excessive market risk-taking activities have often generated significant losses and insolvency crises in the banking and financial industry. Recent examples include the bankruptcy of Barings, a British bank that recorded significant losses on stock index futures and options trading; and the crisis of Long Term Capital Management (LTCM), a US-based hedge fund that was bailed out by the Federal Reserve to prevent contagion effects on the banking system.

These trends have, in turn, stressed the need for bank senior management to obtain precise measurements of market risk. Appropriate market risk measurement techniques have become critical not only for risk control but also for risk-adjusted performance measurement and efficient capital allocation purposes. The most significant response to such a demand came from the use of value at risk (VAR) models. These models generally measure the market, or price risk of a portfolio of financial assets - i.e. the risk that the market value of the portfolio will decline as a result of a change in a market factor (interest rates, exchange rates, equity prices, commodity prices, or volatility of these factors) - as the potential loss given the portfolio sensitivity and market factor volatility and correlations. More precisely, VAR is a measure of potential loss where loss is directly linked to the probability of occurrence of the simulated moves in the risk factors. VAR models are mainly used for four basic applications: setting limits to risk-taking units, measuring risk adjusted performance, pricing financial transactions and allocating capital in the different units of a bank.

Since they were first introduced in the early '80s by some of the leading US financial institutions, VAR models have enjoyed a rapid and extensive growth: a new generation of software - favoured by the introduction of the RiskMetrics database compiled by the US commercial bank J.P. Morgan - has been built around it; major banks, not only in the Anglo-Saxon world but also in Europe and Asia, have introduced a VAR model for their trading activities and even industrial corporations started using VAR models to achieve competitive advantage.

A critical step in the increasing use of these models is their recent recognition by the international regulatory community. In its 1995 market risk-based capital ratios proposal, the Basle Committee on Banking Supervision endorsed the use of such models[83], contingent on important qualitative and quantitative standards. More recently, a proposal by Paul Kupiec and James O'Brien (1995) of the US Federal Reserve to eliminate such minimum standards has been supported by the US regulatory authorities.

[83]Basel Committee on Banking Supervision , 1995b.

While it is clear that VAR models have improved risk management techniques and procedures in the major financial institutions, it is less clear whether they represent an improvement at the systems level. Recently, doubts about the role of VAR models as regards systemic financial stability have been advanced. The two main arguments run as follows:

a) risk measurement models tend to underestimate potential losses when significant market shocks occur;

b) VAR model-based risk limits tend to generate uniform market participant behaviour when significant market shocks occur, thereby potentially increasing the international financial instability.

3.2.2. Risk measurement models and practices: an overview

In the framework of VAR models, risk is defined as the maximum potential loss that can be suffered in a time horizon t with a given confidence level. A portfolio with a €1 million daily VAR measured with a 99% confidence level has only a 1% probability of experiencing a loss higher than €1 million the next day. .

There are two main approaches to estimating a portfolio's VAR: the variance-covariance or parametric approach and the simulation approach. The variance-covariance approach is generally based on three key assumptions: market factor returns are normally distributed and serially independent and the price-sensitivities of the single positions are linear. The assumption of normality allows the risk manager to associate a confidence level to VAR because all percentiles are assumed to be known multiples of the standard deviation. Thus, a single volatility estimate can be used to obtain different confidence levels. The assumption of serial independence allows the risk manager to calculate VAR for different time horizons (holding periods) using a single volatility estimate: if market returns are serially independent, then a t-day period volatility can be obtained by simply multiplying daily volatility by the square root of t. The assumption of linearity simplifies the calculation of VAR by avoiding the use of higher than first order sensitivity coefficients and makes it possible to ignore the peculiarities of option portfolios which have a non-linear and often non-monotonically increasing or decreasing sensitivity.

As far as simulation approaches are concerned, two main techniques are currently available:

- historical simulations; and
- Monte Carlo simulations.

Historical simulations estimate VAR by using past changes in market factors. Rather than using past historical observations to estimate volatility and correlations of market factors, historical simulations are based on the use of actual percentiles of past-market factor changes. This means that, if the past observation period is made up of 200 data, the 95% confidence level historical simulation VAR is obtained by fully revaluing the actual portfolio at the 11th worst past market factor changes. This is because 5% of the sample that should exceed the risk measure is equal to ten losses. Therefore, historical simulations can overcome both the "fat tails" problem and non-linear sensitivity when, as frequently occurs, they are coupled with a full valuation of the portfolio.

Monte Carlo simulations are based on a random generation process, which is used to simulate the evolution of market factors. Two inputs are generally needed to model the evolution of market factors: the stochastic process followed by market factors and the statistical parameters such as the means, the variances and the covariances between different market factors. Once the possible evolution paths of the relevant market factors are obtained,

it is possible to calculate the value at risk equivalent to the desired confidence level by simply revaluing the portfolio at the simulated market factor levels and "cutting" the distribution of portfolio values at the corresponding tail.

Banks use VAR models for four main purposes:

i) setting risk limits to risk- taking units,

ii) measuring risk adjustment performance[84],

iii) pricing financial transactions and

iv) allocating risk capital in a more efficient manner.

Setting limits expressed in terms of value at risk allows the single risk taking unit to know the amount of risk he or she is allowed to take and, at the same time, it gives senior management the possibility of imposing limits that entirely reflect the different risk profile of different financial positions. One significant advantage of VAR limits is that they do not need to be updated when significant changes in market factor volatility occur. This is because a change in market factor volatility automatically reduces the notional position that a single VAR limit allows the trader to take. The same VAR limit can therefore give rise to different notional positions in different time periods because of the different volatility of market factors.

The second purpose of value at risk models is relatively straightforward: knowing the amount of risk a single unit of the bank is taking allows senior management to calculate a risk-adjusted performance measure by simply dividing the unit's income by its value at risk limit[85]. Since the value at risk limits of the different risk-taking units of a bank are considered as proxies of the unit allocated capital, these performance measures are generally called *risk adjusted return on capital* (RAROC) or *return on risk adjusted capital* (RORAC). By comparing these performance measures to the bank's cost of equity capital, senior management can evaluate whether a business division, a risk- taking unit, or even a single transaction, is creating or destroying shareholders' value.

At the same time, VAR models can be used for pricing financial transactions in which the bank is price-setter. This is the case when the bank is dealing with counterparts with a relatively inelastic demand for financial services. In order to find the appropriate price that would adequately remunerate the risk the bank is taking, the amount of value at risk of the single transaction is needed together with the bank's cost of equity capital. An example could be that of a foreign exchange forward transaction with a domestic importer who is hedging its foreign exchange risk by buying foreign currency forward. In this case, the bank would quote a forward FX rate which is equal to the interbank corresponding rate plus a spread calculated as the product between the amount of risk associated with the transaction (VAR) and the cost of the bank's equity capital.

Finally, VAR models can be used by senior management as the basis for efficiently allocating a scarce resource – the bank's risk-taking capacity or, equivalently, its equity capital – to the different risk-taking units. Allocating more capital to those units offering higher expected risk-adjusted performance usually do this. In doing so, a top-down approach is generally followed: capital is first allocated to the different business areas of a bank (credit, trading, asset management, etc.); these divisions have, in turn, the possibility of suballocating this scarce resource to their different risk-taking units.

[84] See Zaik E., Walter J., Kelling G. and James C. 1996.

[85] See Bralver C. and Kuritzkes A. 1993.

3.2.3. Capital regulation: from the standardised to the internal model approach

Capital regulation, in the form of minimum capital requirements, was originally introduced at the international level in January 1987, when the US regulators - the Board of Governors of the Federal Reserve System (FRB), the Office of the Comptroller of the Currency (OCC) and the Federal Deposit Insurance Corporation (FDIC) - together with the Bank of England issued a joint proposal which established minimum capital standards applicable to commercial banks in the US and the UK[86]. Implementation of this proposal was deferred in order to allow other countries to participate. In December 1987 the Basle Committee for Banking Supervision issued a consultative paper on a risk-based capital framework. This led to the July 1988 accord on capital adequacy which was subsequently adopted by most OECD countries and, with minor changes, by the EEC directive on bank solvency. The BIS 1988 capital adequacy framework is based on a risk asset ratio focused on credit risk[87].

In March 1993 a European Directive was issued to extend minimum capital ratios to market risks[88]. In 1995 the Basle Committee proposed extending capital requirements to market risks[89]. The basic thrust of the proposal was to impose capital requirements for the open positions in debt and equity securities of the trading portfolio (as opposed to the banking book) and in foreign currencies. The proposals for debt securities and equities are based on the so-called "*building block*" approach which differentiates between specific risk unique to the instrument and general risk shared with other instruments. For debt securities, capital charges range from 0% to 8% of the net open position for specific risk, depending on whether they are classified as "government", "qualifying" or "other", the three classifications reflecting a general assessment of credit risk. As regards general risk, a standard method based on the classification of positions according to a ladder of different maturity bands is used to determine the interest rate risk of the bond-trading portfolio. According to this method, the level of market risk in a portfolio of interest rate sensitive positions is measured by multiplying the net position for each maturity band by a risk factor which, in turn, depends on the average modified duration and interest rate volatility of the band.

For equity positions, the 1993 Basle proposals require a capital charge of 8% of the gross position – the sum of long and short positions – in any single stock for specific risk. They also allow national regulators the possibility of setting lower requirements for portfolios that are both liquid and well diversified. Another 8% charge is set against the net position in any stock market for general market risk. Finally, for foreign exchange risk the proposals suggest a capital charge equal to 8% of the net open position in foreign currencies, defined as the larger of the sums of the net long positions and of the net short positions in the different foreign currencies.

These proposals drew comments from market participants in the period from April to December 1993. Following these comments, the Basle Committee issued a new draft of the proposals in January 1996. The most important change has been to allow banks to use their own internal models to calculate the capital charge. The possibility of calculating market risk capital using internal models is, however, allowed only to banks that meet strict quantitative and qualitative criteria: daily value at risk must be estimated using a two week (ten day) holding period and a 99% confidence level, volatility and correlations must be updated

[86] See also Chapter 5 of this report.

[87] See Basel Committee on Banking Supervision 1988.

[88] See Directive n.93/6/CEE.

[89] See Basel Committee on Banking Supervision 1995a.

quarterly using at least one-year historical data, an independent risk management unit must be introduced and regular stress tests must be performed. Once value at risk has been measured and meets all these criteria, a bank's market risk capital charge is set as the larger amount between the previous day value at risk or a multiple of the average of the previous sixty-day VAR.

According to the back-testing approach adopted by the Basle Committee to evaluate the accuracy of an internal model, the value of MF depends on the number of exceptions, defined as the number of days in which the losses of the trading portfolio exceed the corresponding VAR measure over the previous 250 trading days: a sound 99% confidence VAR model should produce a number of exceptions equal to 1% of the size of the testing sample (two or three exceptions). In this case MF is equal to three. If, instead, the number of exceptions is higher, the MF can increase up to four.

3.2.4. Value at risk models: potential weaknesses

VAR model weaknesses can be classified into two main categories:

- "intrinsic" weaknesses, mostly connected to the explicit or implicit assumptions;
- "systemic" weaknesses, which are mostly connected to the way their output measures are used by financial market participants and the consequences of their applications at the financial system level.

The first kind of weaknesses is connected to the following main assumptions:

- serial independence of market factor returns;
- normal distribution of market factor returns;
- stability of market factor returns' volatility and correlations.

These assumptions tend to collapse when significant financial market shocks occur. In fact, during these episodes, market factor returns tend to show serial correlation, volatility and correlations both significantly increase and the shocks appear in the order of 10 to 15 times higher than the historical standard deviations, i.e. significantly higher than a normal distribution would implicitly suggest.

As far as "systemic" weaknesses are concerned, two potential problems need to be highlighted:

- if all market participants use the same risk model to limit risk positions, a problem of uniform market participant behaviour can arise, with a potential destabilising effect on financial markets;
- if banks and other financial institutions base their capital adequacy decisions on VAR models, without taking into consideration extreme market shocks through the use of stress testing, a problem of under-capitalisation of the banking industry may arise when market shocks occur.

3.2.5. Open issues

In addition to the above-mentioned potential problems, two main issues appear relevant as far as market risk management is concerned. The first one is related to the degree of disclosure concerning the risk measures produced by VAR models. More generally, a reinforcement of market discipline is considered as a necessary part of risk control system on bank behaviour. This requires obtaining an increase in transparency through explicit disclosure requirements concerning risk positions and value at risk outputs.

The second issue is related to the effective use of VAR measures for risk control purposes. Many major banks and financial institutions have developed sophisticated risk measurement models but do not have a risk management system in place. This simply means that there is no risk control system based on VAR limits to traders nor a risk-adjusted performance based incentive system. Explicit requirements concerning the effective use of VAR measures for risk control and management purposes are therefore necessary in order to improve financial stability.

3.2.6. Policy proposals

Many different ways of tackling the weaknesses and open issues mentioned have been proposed by regulators, academics and various working and study groups. These proposals generally focus attention on improving market discipline by:

- establishing a more uniform and homogeneous set of regulations concerning *disclosure of banks' market risk-taking* activities; this is especially true for banks operating in those countries where marking-to-market the trading positions and providing detailed information (maturity and currency mismatching, sensitivity to predetermined parallel shifts in the interest rate curve) on the banking book risk profile is less developed;
- explicitly requiring banks to issue *subordinated debt* on a revolving basis, the cost of which should be an explicit function of the bank's riskiness (Evanoff, 1992);
- explicitly *forbidding bail-out policies* for insolvent banks, especially when the cause is excessive risk-taking;

These three measures are strictly interdependent. The first would provide the market with adequate information to analyse major banks' risk profiles, while the second and the third would give market participants (subordinated debt holders, equity holders and uninsured creditors in general) the incentive to monitor and price bank risk coherently.

In addition, a stronger *connection between risk measurement and risk management techniques* would also be needed. This could be achieved by explicitly requiring internationally active banks to use VAR models in day-to-day risk taking activities (risk limits, risk adjusted performance measurements, etc.), by introducing organisational restructuring consistent with the bank's risk management policy, and by explicitly requiring senior management to become involved in the process.

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Chapter 4

Prudential concerns and the implications for the international monetary system: lessons from the financial crisis in emerging markets

4.1. Introduction and methodology

The devaluation of the Thai Baht on the 2nd of July 1997 started a period of financial turmoil in international financial markets which, in terms of intensity, outweighed the effects of the 1994 Mexican crisis. The contagion process was quite rapid; and during the following months other economies in the Far East suffered a crash in financial activities and a currency devaluation. Financial instability immediately affected the banking systems which acted as a channel to spread and worsen the crisis. Outside Asia, the worst effects of the crisis were felt in Russia, Brazil and Argentina, starting from the second half of 1998. The growing integration and globalisation of international financial markets magnified the contagion process in such distant areas and economic systems. Contrary to what happened in 1994, however, banking systems in Latin America and Eastern Europe suffered only moderately from the financial crisis.

The different impact of the crisis on the three geographical areas and the different recovery capacity have been explained by differences in financial structures. It therefore seems important to identify the weaknesses and shortcomings in regulations or prudential practices which could affect the stability of both single countries and the overall international financial system.

We therefore adopt an empirical approach, and analyse the existing link between prudential practices and regulations and financial stability in a certain number of developing and transition economies which represent the three main areas affected by the latest crisis[90]. For each country we analyse the development of some aspects of the banking system and identify those specific areas which came under stress during the latest crisis (1997–1998 period). This analysis will allow us to identify the most vulnerable and fragile areas where possible corrective measures might be adopted to help countries recover from the crisis and prevent further instability[91]. This will, however, be the main issue in the next chapter when internal policy measures are considered.

When analysing financial systems, the main focus will be on the banking sector. An evaluation of soundness and stability of banking systems is essential to an understanding of the process of resource allocation and the functioning and growth potential of modern economies. This is particularly true in the case of developing and transition countries where the role of capital markets is still limited and the backbone of the financial system is represented by banking institutions. Moreover, the recent experience of the crisis in developing countries is mainly linked to the fragile banking system rather than to debt or current account problems (see Chapter 1.4).

[90] See annex 4.1.

[91] It is important to note that we do not analyse causation in the spread of a crisis to different compartments of an economy. If an area proves to experiencing stress it could be either the warning sign of an approaching crisis or the consequence of a crisis already underway.

The chapter is organised in the following way. We first evaluate the relevance of banking systems in each economy in order to have a measure of the possible impact of their instability. Sub-section three provides a comprehensive analysis of the banking systems by highlighting the relationship between prudential concerns and financial instability thus identifying possible situations of stress. Sub-section four analyses the impact of "non traditional" factors on financial stability. Sub-section five concludes by suggesting possible areas of intervention and open problems.

4.2. Role of banking systems in Eastern Europe, Asia and Latin America

The impact of banking sector instability on the whole economic system strictly depends on the degree of intermediation of each economy, in terms of financial deepening and lending activities[92]. A high level of financial deepening, coupled with high lending ratios, could show that the economy relies heavily on banks as a means of financial intermediation, whereas capital markets tend to be a limited source of finance. This can be particularly risky if there are signs of a crisis. In such a situation banks, sooner or later, reduce their lending and a credit crunch occurs. Soon there is a widespread diffusion of both illiquidity and default situations which turn the initial instability into a serious economic crisis.

In order to evaluate the degree of intermediation of each economy in terms of financial deepening and lending activities, we consider the development of two different indicators[93]: M2/GDP, and the ratio between domestic credit to the private sector and GDP.

4.2.1. Evaluating financial deepening

A typical measure of the relative size of the formal financial intermediary sector is the ratio between a broad measure of money (money plus quasi-money) and GDP which accounts for financial sector development or "financial depth". The level of financial development has two different effects:

- a low level of financial development interferes with economic growth possibilities; and
- a high level of financial development and liberalisation[94] increases the risk of financial instability and contagion from abroad.

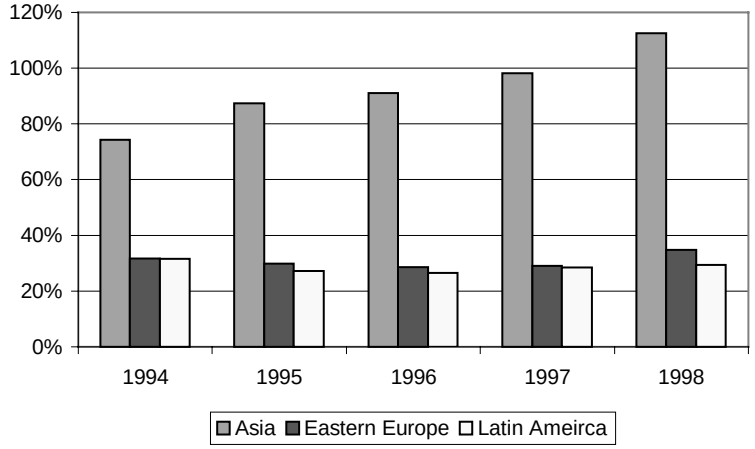
The first element is more important in the medium and long term, while the second could prevail in the short run.

[92] In this section we consider variables that take into account only monetary authorities and the deposit money bank, due to the predominance of these institutions in the analysed countries and to data availability. Moreover, the balance sheet analysis of the next sections is mainly based on commercial bank data.

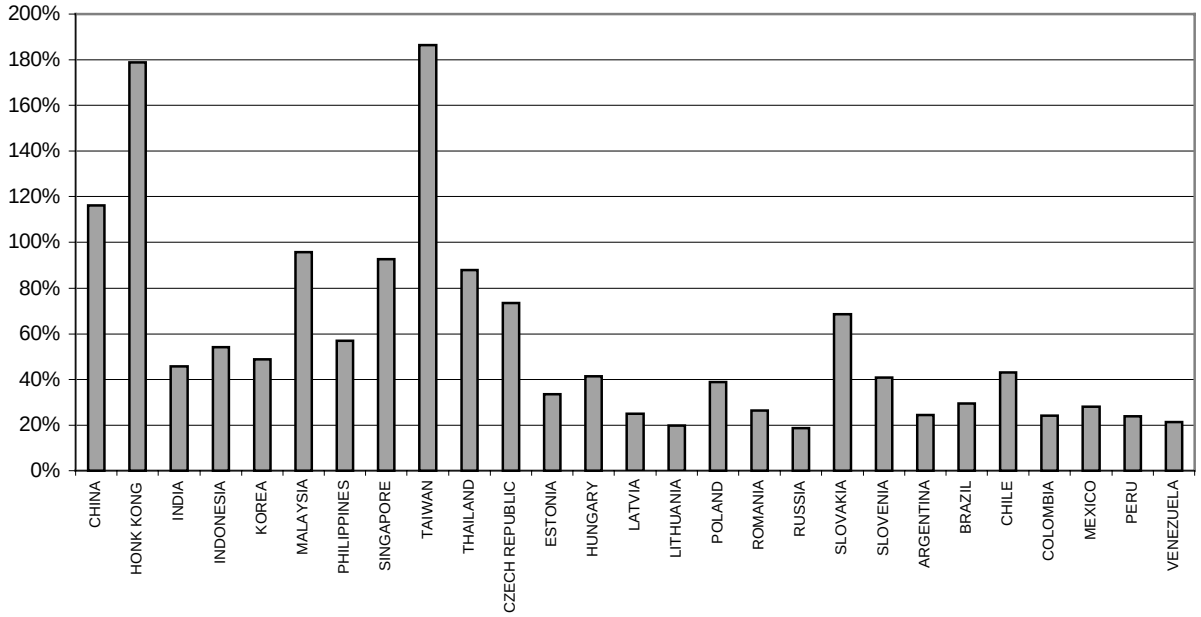
[93] All the indicators considered are measured according to GDP, thus the evolution of this variable influences the value of the indicator. In particular, following the 1997 crisis, the sharp decline in economic activities in 1998 were able to make our indicators increase (or interfere with the decline) due to the dynamic of GDP since the other variable are not perfectly linked to GDP. Moreover, our indicators might be distorted by inflation as they are a result of ratios between stock and flow variables.

[94] These two variables are usually closely linked.

Graph 4.1 – Evolution of M2/GDP



Graph 4.2 – Average value 1995-1998 of single countries M2/GDP



Graphs 4.1 and 4.2 show the high level of financial deepening which characterises Asia[95], especially when compared to Latin America and Eastern Europe[96]. By considering a 60% level of the variable as a threshold, it is possible to observe that most of the economies exceeding the level are located in Asia (China[97], Hong Kong, Malaysia, Singapore, Taiwan and Thailand). In Eastern Europe only the Czech Republic and Slovakia exceed this level (for historical reasons) while in Latin America the country with the highest level of financial development is Chile, with a value of 43%.

[95] Average 1995-1998 value equal to 97.2%.

[96] Average value of 27.9% and 30.6%, respectively.

[97] In the case of China, the high level of financial deepening is not due to a financial liberalisation process since the financial system is still almost completely government controlled.

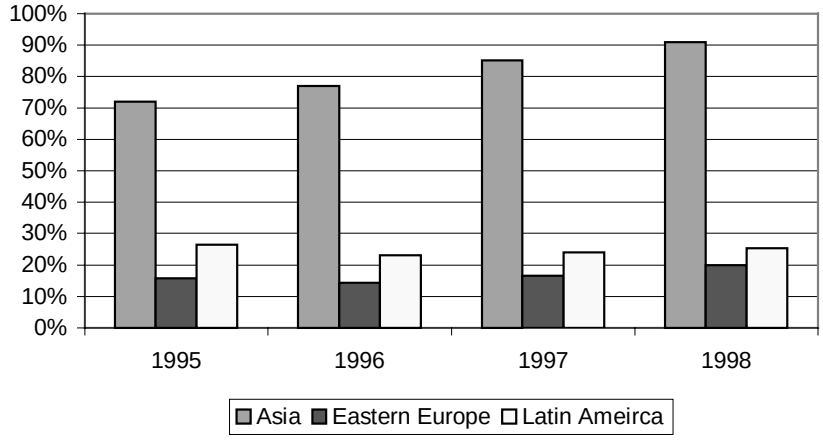
4.2.2. Evaluating the role of banking systems in financing the private sector

As an indicator of size we analyse domestic credit[98] to the non-financial private sector over GDP. This indicator isolates credit activities towards the private sector (where the evaluation and monitoring skills of a financial intermediary are more important) as opposed to credit to governments and public enterprises.

Graph 4.3 confirms that Asian countries have by far the highest level of banking intermediation (over the 1995-1998 period, an average value of 81.2% compared to 16.7% in Easter Europe and 24.7% in Latin America). In most Latin American and East European countries banks tend to invest in government bonds rather than in loans to the private sector[99], whereas public financing requirements in Asia have usually been limited. As for Eastern Europe, delays in the transition process may have influenced overall banking system size. Banks in this area are reluctant to become involved in credit activities as the quality of clients and screening capacity are low and there are more profitable activities other than lending. The prominent role played by banking in financing the private sector in Asia implies that banks are very sensitive to an economic crisis and that the private sector is sensitive to banking crisis.

Among East European countries, the average level of domestic credit/GDP is lowered by the bad performance of Russia (with an average level of 9.4%[100], but which is weighted over 50% in the region). The best performer in the region is the Czech Republic (with an average value of 61%). In Latin America, Chile is the country with the highest level of this variable (58% on average). In Asia, all countries, except India, have a high level of credit to the private sector with Hong Kong over 160%. Interestingly China has a value of almost 100%.

Graph 4.3 – Domestic credit to private sector/GDP



4.2.3. Banking sector: channel of crisis transmission?

Table 4.1 summarises the results. It shows countries that have a high level of financial development (average value of M2/GDP over the 1995-1997 period greater than 60%) and a high incidence of domestic credit to the private sector (greater that 60%). As previously pointed out, these countries reveal a potential fragility in the relationship between the banking sector and the real economy.

[98] By deposit money banking and monetary authorities.

[99] With a perverse effect on credit availability for private sector.

[100] In Russia banks have largely invested in government papers (GKO).

It is extremely interesting to note that outside of Asia, only the Czech Republic and, to a lesser extent, Slovakia, show a high level of intermediation and are thus potentially fragile. In Asia, however, most of the analysed countries present this problem. It is therefore possible that the serious effects of the recent crisis were at least partially determined by the fact that those economies relied so heavily on banks.

Table 4.1: Financial development and intermediation: potential fragility

Country	M2/GDP (>60%) Average 95-98	DC/GDP (>60%) Average 95-98
China	116.35%	98.37%
Honk Kong	179.01%	165.07%
Korea	48.84%	68.49%
Malaysia	95.60%	98.94%
Singapore	92.56%	99.57%
Taiwan	186.41%	n.a.
Thailand	87.94%	107.81%
Czech Republic	73.45%	61.03%
Slovakia	68.40%	34.67%

4.3. Banking systems and prudential concerns

A second step in the analysis considers the main features of banking systems, and focuses on those elements which are related to prudential issues. We identify the most fragile and vulnerable areas where possible corrective measures could be adopted in to help countries recover from the crisis and prevent future instability. In particular, we consider capitalisation, asset quality and liquidity in order to understand to what extent situations of stress exist and whether stronger regulations and supervision should be implemented. We also analyse profitability which, even if not directly linked to prudential regulation, is an important indicator of banking sector performance. This analysis will be developed using aggregate data at the sector level by IBCA (see Appendix 4.1).

Due to data availability problems, we will focus on proxies for the main regulatory variables. However, comparisons between different time periods and different countries allows us to have a picture of the main issues. The descriptive analysis will consider the main developments during the 1995 – 1998 period; however, when stress conditions are discussed we will focus only on the period of the recent economic crisis, namely 1997 – 1998.

4.3.1. Capitalisation

Lack of regulation of capital adequacy, at least according to the Basle standard (8%), might fail to encourage adequate capitalisation, thus causing an increase in bank vulnerability to adverse shocks. The reported capital adequacy ratio, however, may be overstated if there are shortcomings in provisioning and classification regulations since the Basle standard refers to risk-weighted assets.

Our objective in evaluating bank capital is to understand the degree to which a bank's risk capital is sufficient to absorb potential losses on its loans and security portfolio as well as its off-balance sheet activities. It is important to note that, although a low level of capitalisation can hinder the ability of a bank to fulfil its main obligations, extremely high levels – well above legal requirements – can be proof of both inefficiencies or risk exposure. Indeed, high

provisions imply the deviation of resources from lending activities thus reducing bank profitability.

Virtually all major emerging countries have adopted minimum capital adequacy standards that meet the requirements established by the Basle Capital Accord and in a number of countries ratios exceed the basic norm[101] (table 4.2). It is interesting to note that, following the recent turmoil, capital requirements in Asia have been raised to quite high levels. However, poor accounting standards might hide potentially unstable situations (see chapter 6.3). A further issue, which is the subject of recent debates, refers to the fact that existing standards might be inadequate for developing countries.

Table 4.2: Prudential ratios

	Capital (% of risk weighted assets)	**Minimum capital**	**Liquidity ratio**	**Required reserve ratio**
China	*8*	*RMB 1bn*	*25*	*8*
India	*9(by March 2000)*	*Rupee 1bn*	*25*	*10*
Hong Kong	*10-12*	*HK$ 150 mn*	*25*	*0*
Indonesia	*12 (by end 2001)*	*Rupiah 3000 bn*		*3-5*
Korea	*8*	*Won 100 bn (national) 25 bn (regional)*	*30*	*3*
Malaysia	*10 (by end 1999)*	*Ringitt 20 mn*	*15*	*4*
Philippines	*10*	*Peso 2-5 bn*	*7*	*7-10*
Singapore	*12*	*S$ 1.5 bn*	*18*	*3*
Thailand	*8.5*		*6*	*0*
Argentina	*11.5*	*US$ 5-15 mn*	*20*	
Brazil	*11*	*Real 9.3mn*	*None*	*75 (demand) 20 (time)*
Chile	*8*	*US$ 25 mn*	*100% demand deposit over 2.5 times capital. 10% on foreign currency deposits*	*9 (demand) 3.6 (time)*
Colombia	*9*	*US$ 24 mn*		*2.5 (medium term)*
Mexico	*8*	*US$ 13 mn*	*10% of deposits allocated to reserve fund until equal capital*	*0*
Peru	*9 (by end 1999)*	*NS 16.9 mn*	*8 (domestic) 20 (foreign)*	*7 (local currency) 38 (foreign)*
Venezuela	*8*	*Bs 1.2-3 bn*	*None*	*19*
Czech Republic	*8*	*Crown 500 mn*		*5*
Hungary	*8*	*Forint 2 bn*		*12*
Poland	*8*	*Euro 5 mn*		
Russia	*8*	*Euro 5 mn*		

Source: Hawkins and Turner (1999). p. 86

Due to data availability, the ratio between equity and total assets has been considered as a proxy for bank capitalisation, without any assessment of assets risk. Graph 4.4 shows the low, though increasing, level of capitalisation of the Asian banking systems when compared to the Latin American and Eastern European ones. A situation of particular risk is seen in

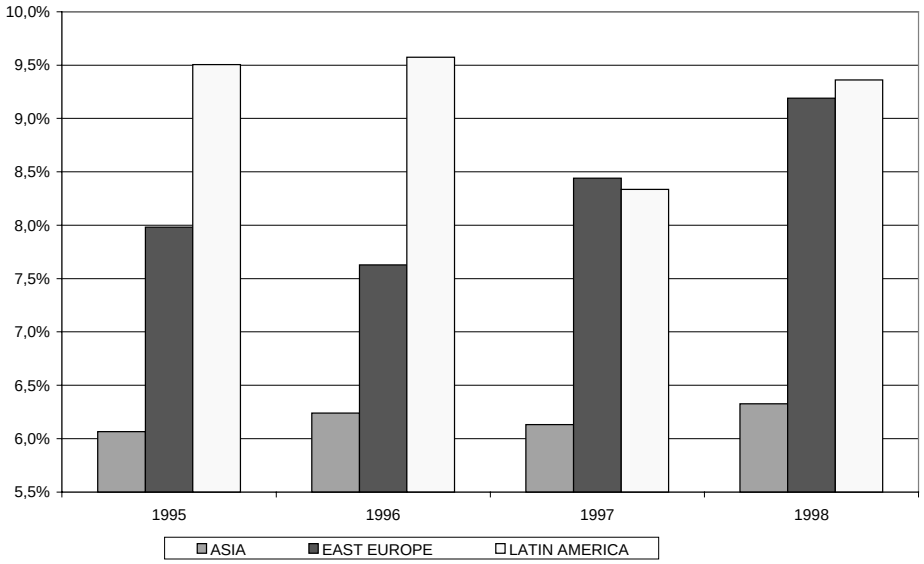
[101] This could be justified by the fact that the level of risk and volatility is higher in developing economies.

Indonesia, where the equity over total assets ratio had a negative value of -51.4% in 1998 as a consequence of widespread bank failures. Eleven banks, out of the 24 considered in the 1998 aggregate, report a negative equity over total asset level as a consequence of the exhaustion of all reserves and outstanding capital coupled with a negative end-of-year result.

An increasing trend in bank capitalisation is a characteristic of East European countries resulting from a tightening of prudential concerns as the transition proceeds. The extremely high level of capitalisation which characterises Romanian banks (19% in 1998), however, is proof of their inefficiencies and of the risk linked to their activities rather than to their soundness and stability. We should note that most East European banks (i.e., those located in Bulgaria and in the three Baltic states) are required by national regulations to hold capital ratio which is more stringent than that of the Basle standard because of a riskier operating environment.

The reduction in 1997 of the aggregate level of equity over total assets in Latin America stems from the behaviour of the Argentinean and Colombian banking systems (which, in any case, were always characterised by an extremely high level of capitalisation). In 1997 a sharp reduction in capitalisation also characterised the Mexican banking system due to the restructuring process which followed the 1994 crisis.

Graph 4.4 - Banking system capitalisation: equity over total assets in Asia, Latin America and Eastern Europe



4.3.2. Asset quality

Low asset quality can erode bank capitalisation, thus increasing vulnerability to external shocks. Low asset quality may be determined by different factors: a particularly severe macroeconomic downturn, rush credit policies, government intervention in credit allocation and an inadequate legal framework.

When comparing asset quality in an international perspective, a serious problem is the lack of a homogeneous definition of a bad loan. The definition of loan losses varies from country to country, especially when the best international practices are not adopted (see chapter 3.1). In such a situation those countries which do not comply with international regulations are more likely to report low loan losses even if they have a fragile banking sector. In terms of the

overall financial system stability this is an important issue because it may hide potentially unstable situations at the single country level. Table 4.3 shows non-performing loans classification regulations in a number of developing and transition countries.

Table 4.3: Non-Performing Loans classification

	Substandard	Doubtful	Loss
China	*Overdue*		
India	*7M*	*25M (19M from March 2001)*	*Loss identified but not written off; no collateral; fraud*
Hong Kong	*3M*	*Collection in full improbable*	
Indonesia	*3M*	*6M*	*9M*
Korea	*3M*	*Expected to be loss*	
Malaysia	*6M*	*9M*	*12M*
Philippines	*3M or under litigation*		
Singapore	*3M or borrower in weak financial situation*	*Full liquidation questionable*	*Debts uncollectable*
Thailand	*3M*	*6M*	*12M*
Argentina	*3M*	*6M*	*12M*
Brazil	*2M*	*6M*	*12M*
Chile	*1M (mortgage). 2M (consumer)*	*7M (mortgage). 4M (consumer)*	*5M (consumer)*
Colombia	*4M (housing). 1M (other)*	*6M (housing). 4M (commercial). 3M (other)*	*12M (housing and commercial). 6M (other)*
Mexico	*6M (mortgage). 3M (other)*		
Peru	*3M (mortage). 1M (consumer). 2M (commercial)*	*4M (mortgage). 3M (consumer). 4M (commercial)*	*12M (mortgage). 4M (consumer). 12M (commercial)*
Venezuela	*"past due"= 1M*		
Czech Republic	*3M*	*6M*	*12M*
Hungary	*International standard*	*International standard*	*International standard*
Poland	*1M or borrower in poor state*	*3M*	*6M; borrower in bankruptcy*

Source: Hawkins and Turner (1999). p. 25

We use the ratio between loan loss reserves and gross loans as a measure of asset quality. The expected relationship with banking sector stability is positive because banks with low-quality loans cover risk by increasing contributions to the loan loss reserve fund. This is, however, an indirect measure of asset quality, as most of the balance sheets provided by IBCA do not have comprehensive information on loan losses and thus aggregate data are not reliable.

Loan loss reserves are affected by each bank's internal prudential rules and by country regulation in terms of legal provisioning requirements loan classification regulations. Even if there is a great variety of national legislation, the most common requirements imply a small amount for performing loans, 20% for substandard loans, 50% for doubtful loans and 100% for losses. It is clear that the considerable differences in definitions of the different categories of loans could imply wide variation in the level of provisioning required.

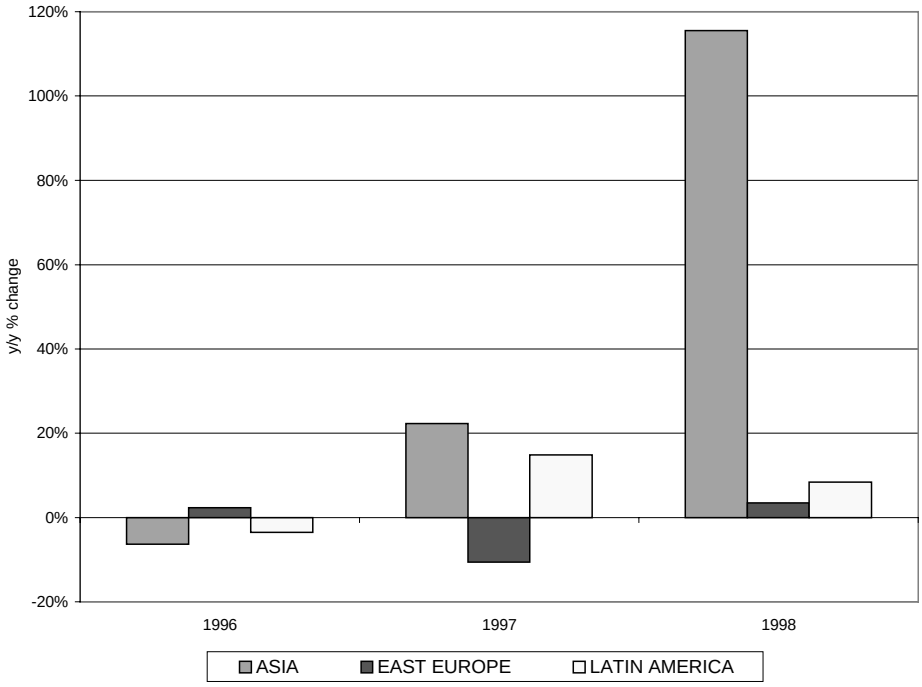
By comparing the dynamics of the loan loss reserve over total loan ratio in the three areas of interest since 1995, one immediately notes the fast growth which characterises all Asian banking systems as a consequence of:

- the deterioration of loan portfolios (official data report a value of loan losses over total loans equal to 10% on average in the Asian countries, with a peak of 45% in Indonesia and Thailand in 1998);

- the extremely low level of reserves at the beginning of the crisis (1.66% in 1997) which was mainly a consequence of insufficient risk coverage rather than of a high quality of outstanding credits.

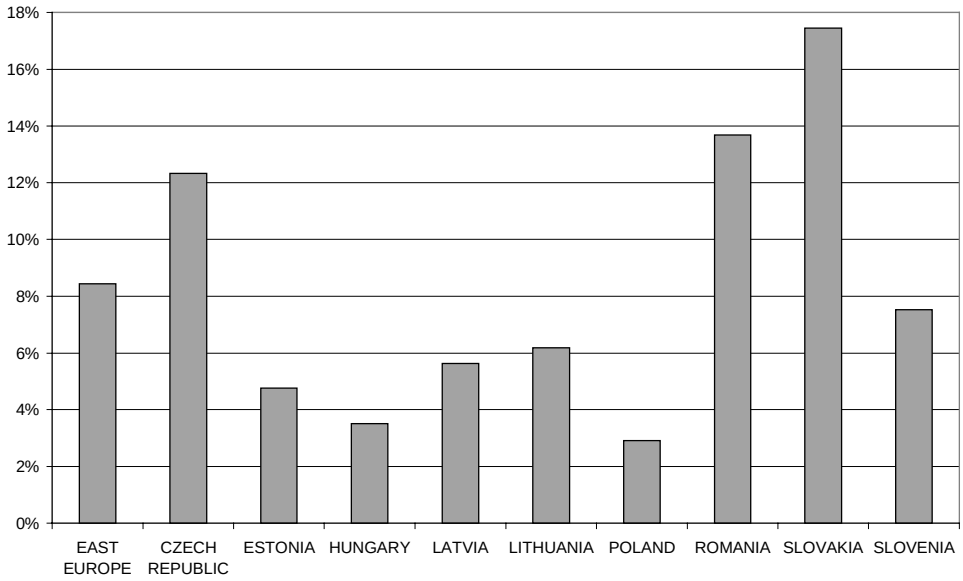
Those countries more seriously struck by the crisis perform a higher growth of the loan loss reserve ratio: in Indonesia the ratio increased from 3.1% to 43.7% between 1997 and 1998, in Thailand it went from 2.8% in 1996 to 10.7% in 1998, in Malaysia from 2.9% to 5.9% and in Korea from 1.4% to 5.6%. Even the banking system of Singapore experienced a huge increase in loan loss reserves in 1997 as a consequence of increased lending risks, coupled with a very low level of reserves in 1996 (the loan loss reserve ratio was equal to 0.08%).

Graph 4.5 - Asset quality: growth rate of the loan loss reserves over gross loans ratio in Asia. Latin America and Eastern Europe



In Eastern Europe asset quality has been much more stable. The level of reserves over gross loans has always been higher than in Asia as a consequence of a tradition of risky lending and more stringent prudential regulations. Poland and Hungary are the two countries which show the lowest loan loss reserve ratio, while considerable risk is associated to lending activities in the Czech Republic, Slovakia and Romania. Considerable increases in the reserve ratio have been recorded in Romania (a 144% growth rate in 1996) and in Estonia (a 124% growth rate in 1998), thus showing the increase in instability risks.

Graph 4.6 - Asset quality in Eastern Europe in 1998: loan loss reserves over gross loans



In Latin America all the countries analysed experienced an increase in the loan loss reserve ratio resulting from a deterioration of credit quality. High growth rates were recorded in Brazil (41.6%) in 1997 and in Colombia (60.5%), Peru (45.3%) and Venezuela (68%) in 1998[102]. A peculiar situation characterises the Argentinean banking system which experienced a decrease in reserves during the 1995-1998 period. Because of the high ratio of non-performing loans over gross loans (24.8% in 1998 for all banks in our sample). This decrease in reserves should be considered a consequence of loss rectification rather than of increases in credit quality.

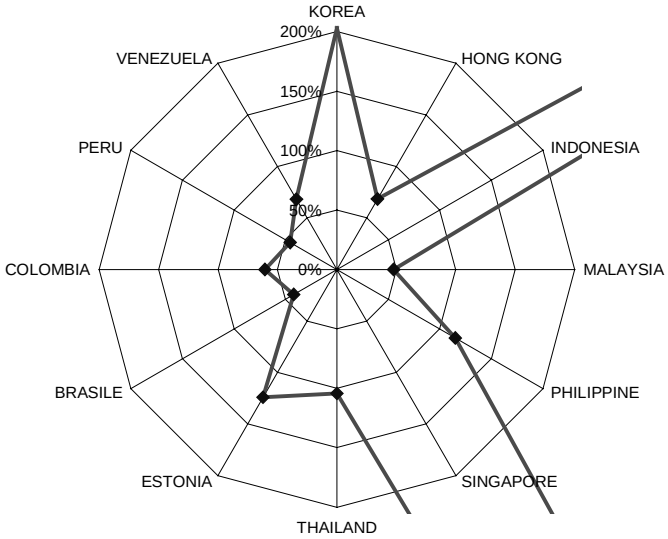
Graph 4.7 considers all those countries which experienced sharp increases in the loan loss reserve ratio in 1997 and 1998. The maximum growth rate for each banking sector in the two years has been selected and all those countries with values above 40%[103] in any one of the two years have been considered. The Indonesia banking system stands out for the extremely fast growth of its reserve ratio; this ratio increased from 3.1% in 1997 to 43.7% in 1998, as a result of the bad loan problem stemming from the economic and financial crisis. Other countries in Asia have been characterised by huge increases in the reserve ratio including Korea, Malaysia, the Philippines, Thailand and Hong Kong.

In Eastern Europe only the Estonian banking system experienced considerable increases in this ratio in 1998. However, as previously mentioned, reserve levels in the entire area have always been higher, accounting for the risks associated with the banks' operating environments. Latin America experienced high reserve growth rates: Brazil in 1997 and Colombia, Venezuela and Peru in 1998.

[102] The average level of the loan loss reserve ratio in Latin America was 7.2% in 1995 and 8.7% in 1998.

[103] The value suggested is discretionary and should be balanced with the absolute level of the loan loss reserve ratio. However, although increases in reserves can be determined by many causes, including a change in prudent regulation, we consider a 40% increase y/y as a signal of increasing asset quality risk.

Graph 4.7 – Stress in asset quality – max y/y growth rate of the loan loss reserve ratio in the 1997 – 1998 period



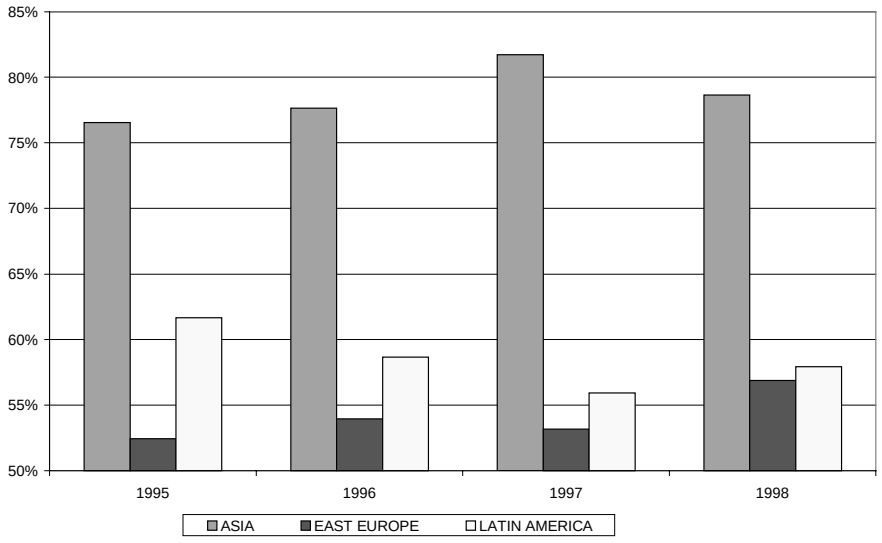
4.3.3. Liquidity

Banking system liquidity concerns the capacity of a bank to finance itself under stress; liquidity is particularly relevant in the developing and transition economies where the operating environment is highly volatile and many banks have weak financial fundamentals.

We use the net loans over customer and short term funding as liquidity indicator. A high ratio may be indicative of the extent banks rely on non-traditional sources of funding. It may suggest greater maturity risk as economic conditions deteriorate and banks experience a low level of liquidity in response to shocks.

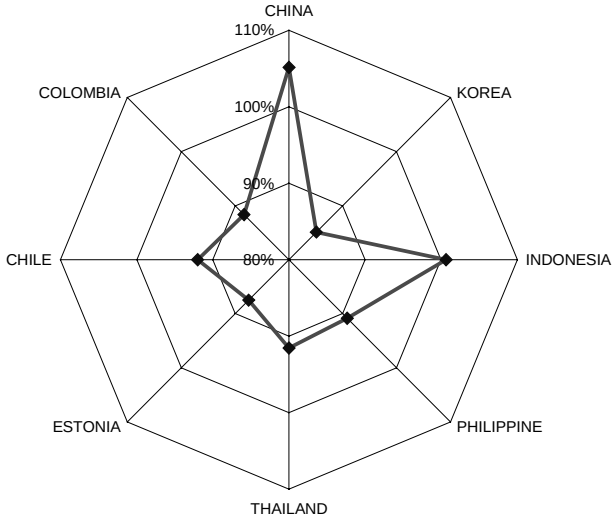
Graph 4.8 shows the low level of liquidity which characterises banking systems in Asia, especially when compared to the high level in Latin America and Eastern Europe.

Graph 4.8 - Banking system liquidity: net loans over customers and short term funding in Asia. Latin America and Eastern Europe



The country level analysis for the 1997-1998 period (Graph 4.9) shows that in the Asian area low liquidity should be considered a problem for the banking systems in China, Thailand, the Philippine, Indonesia and Korea. In Latin America liquidity problems are found in Colombia and Chile and in Eastern Europe only in Estonia.

Graph 4.9 – Stress in liquidity: max net loans over customers and short term funding in the 1997 – 1998 period



4.3.4. Foreign exchange risks and regulations

An important source of the instability of banking systems is the exposure to exchange rate risk. As the recent experience in Asian countries shows, international banks in developed countries have always been ready to lend to banks in developing countries. The problem of mismatching which stems from short term liabilities in foreign currency (foreign loans usually have short maturity) with long term assets in domestic currencies can explode when there are large and unforeseeable swings in exchange rates. It is also important to consider that potential risks also arise from large private sector borrowings in foreign currencies. In case of a sharp devaluation, customers could encounter problems in paying back their loans and this could have a contagion effect on the banking system even if it has no foreign currency denominated liabilities.

Foreign currency exposure is usually regulated through limitations expressed as a share of capital (Table 4.4). In some countries regulation is very detailed and, if coupled with effective supervision, it can limit these risks. However, very few countries regulate customer borrowing in foreign currencies and this can have disruptive consequences.

Graph 4.13 shows the trends in international bank lending in the three regions[104]. The large increase in flows towards Asian countries before the crisis made these countries more fragile. The high-risk situation was only revealed by the currency devaluation of 1997 and by the consequent strong decrease in international lending flows (-21% in 1998 and -4% in the first half of 1999).

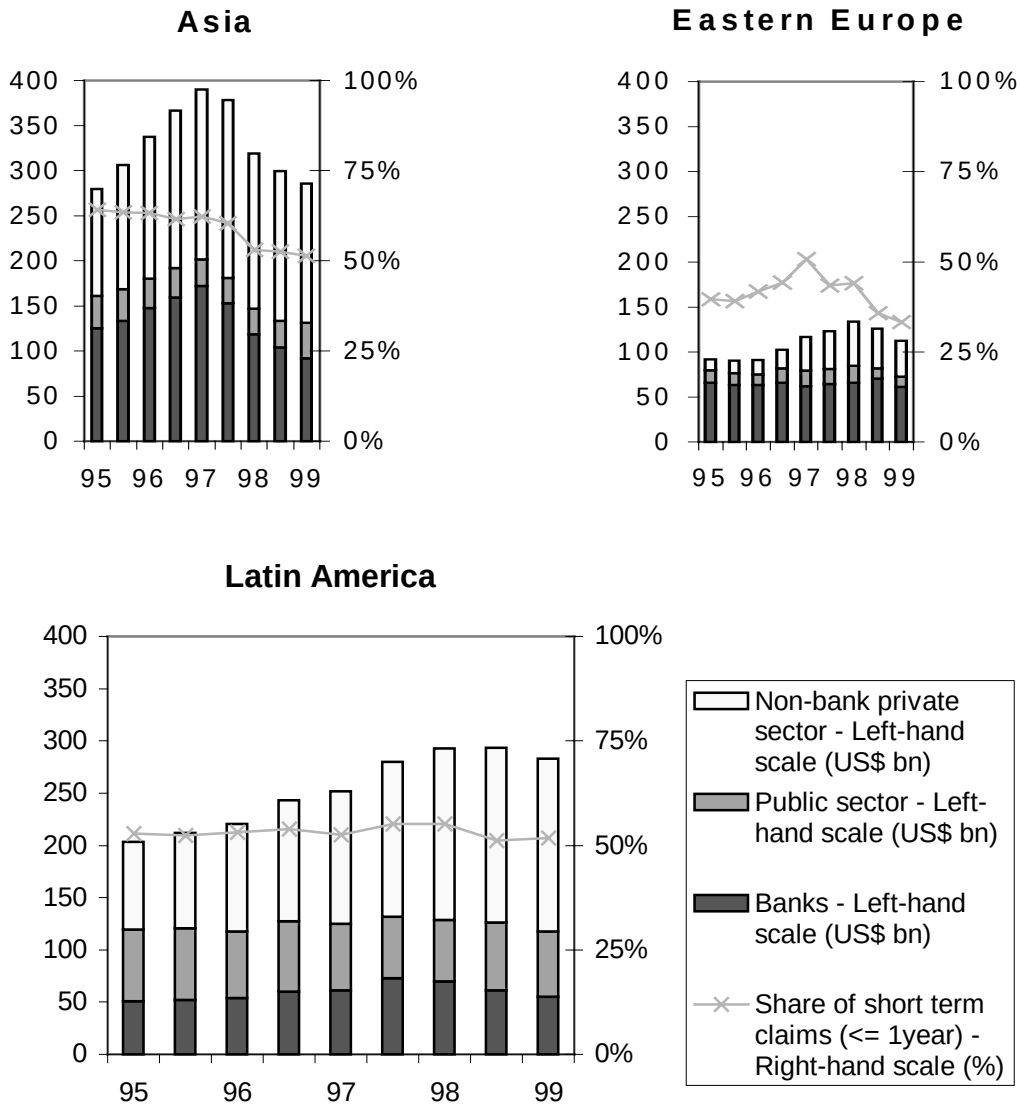
[104] Although we analyse regional dynamic, there are often large variations between countries.

Table 4.4 – Prudential regulation on foreign currencies exposure

India	*Bank must obtain approval for its OP limits*
Honk Kong	*Overnight OP (excluding HK$/US$ position) of local banks ≤5% of K (15% for experienced institutions)*
Indonesia	*Maximum net OP 20% of K*
Korea	*15% of K (overbought or oversold)*
Malaysia	*Each bank has individual net OP limits*
Philippines	*Maximum short position of 20% of K temporarily suspended; maximum long position 5%*
Singapore	*No formal limits; banks must establish. monitor and report self-determined limits*
Thailand	*Maximum overbought position of 15% of K; maximum oversold position 15%*
Argentina	*No formal guidelines; K requirement associated with fx position*
Brazil	*Limits on bought and sold positions. New policy will relate fx exposure to K requirements*
Chile	*Absolute weighted sum of net currency position <20% of K. with weights reflecting currency volatility and ratings of the country of issuance*
Colombia	*OP between –5% and 20% of K*
Mexico	*Limit of 1.83 times core K*
Peru	*Net liabilities ≤2.5% of K; net assets ≤100% of K*
Venezuela	*Maximum OP of 15% of K*
Czech Republic	*OP in any currency should ≤15% of K; OP of non-convertible currency ≤2% of K; overall OP ≤20% of K*
Hungary	*Absolute sum of OPs ≤30% of K*
Poland	*Limit of 15% of K in any currency; limit of 30% for overall net position; limit of 40% for absolute sum of OPs*
Russia	*Maximum OP 30% of K*
K = capital. fx = foreign exchange. OP = open position	

Source: Hawkins and Turner (1999). p. 92

Graph 4.10 – International bank lending[105] in Asia, Eastern Europe and Latin America



As regards the exposure of the banking system to international lending, banks in Eastern Europe have the largest share (60.1% on average during the period considered[106]). In Asia the banking system has been a large recipient of international lending (40.4% on average). Since most of the loan portfolios of Asian banks were in the local currencies and, as Graph 4.10 shows, a large part of their debt in foreign currencies was short term (over 60%), their positions were quite fragile and were based on the assumption of an exchange rate stability. When the currencies were devalued, the banking system was severely hit. Moreover, the large exposure of non-bank private sector to foreign lending and the subsequent negative impact of devaluation also indirectly affected the financial health of the banks. Following the crisis there has been a decline in the share of banking system on overall lending from BIS reporting banks (partly due to a general tendency of the public sector to take over foreign

[105] Measured as the international claims of BIS reporting banks on individual countries (stocks of end of period).

[106] From 1995 to mid-1999.

debt) and a change in the maturity composition towards longer maturity.

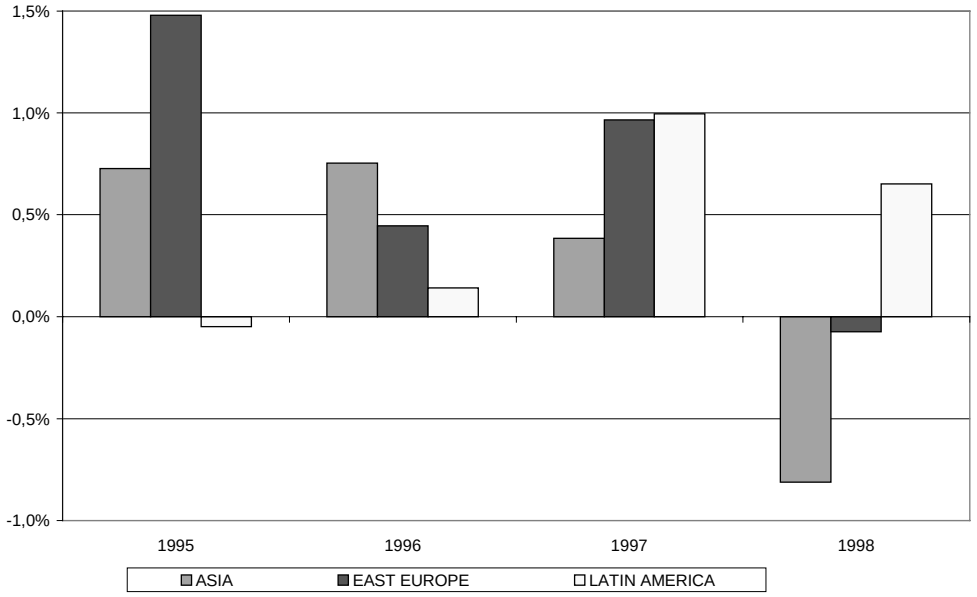
In Latin America the exposure of the banking system to international lending is lower with an average of 23.6% during the period analysed while the maturity structure is only slightly better than the Asian one, with constant value around 50% (see also chapter 1.3.3).

4.3.5. Profitability

The likelihood of banks remaining solvent and viable also depends on their profitability. Profitable banks can make required provisions to withstand adverse conditions, add to their capital and build investor confidence by paying attractive dividends whereas those producing losses deplete capital. The return on average assets (ROA[107]) has been considered as an indicator of profitability. A low value of this ratio (especially a negative one) and a declining trend may signal problems regarding the soundness of a given financial system.

Graph 4.11 shows the dynamics of banking systems profitability in Asia, Latin America and Eastern Europe since 1995. Both the decreasing trend in aggregate ROA in Asia and the negative level achieved in 1998 reflect the emergence of solvency problems for Indonesian, Thai and Korean banks (all those banking systems performed negative ROA levels in 1998).

Graph 4.11 - Banking system profitability: ROA - return on average assets



In Eastern Europe the 1998 negative profitability was due to the bad performance of the Czech, Latvian, Estonian and Slovak banking systems as a result of the delays in the transition process. Repercussions of the Russian crisis have only been seen in the Baltic

[107] When transition or developing countries are considered ROA should be preferred to ROE for two different reasons:

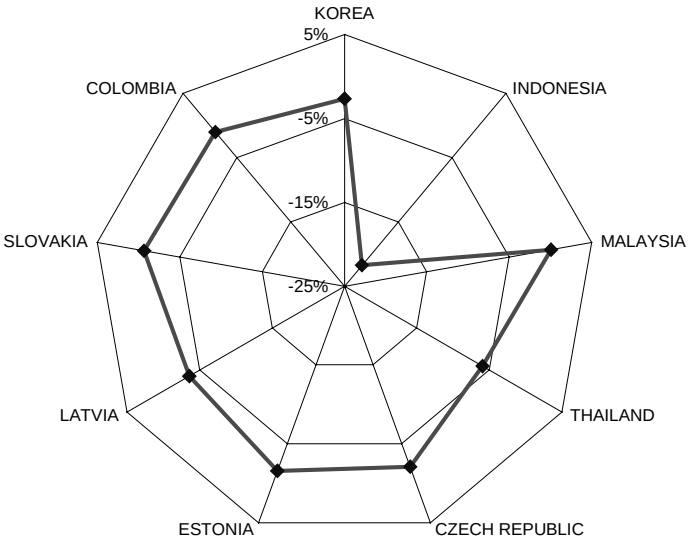
- the equity level of a bank is affected by the risks associated with its operating environment through its amount of reserves; for this reason banks operating in riskier environments could have higher equity and thus lower ROE, other things being equal;
- a positive ROE could be the result of negative returns matched to negative values of equity. In such a situation, very unstable banking systems can be classified as profitable; such a mistake is avoided when ROA is considered.

countries. In Lithuania, the lack of proper prudential regulations, the strong economic ties with Russia and the banks' exposure to Russian bonds, GKO, led to the failure of two banks last year.

In Latin America only the Colombian banking system experienced a negative profitability during the period analysed as a result of increased loan losses which determined a reduction in interest rate margins.

As previously mentioned, both low levels of profitability and sharply decreasing trends are indicators of soundness problems. For this reason, we define banking systems characterised by a very low or negative ROA and/or a drop in profitability (measured by a y/y growth rate lower than -90%) as experiencing conditions of stress. Incidentally, we discovered that all banking sectors which experienced negative profitability during the observation period also reported a highly negative growth rate for the ROA indicator. We thus decided to represent stress conditions according to profitability level rather than profitability dynamics.

Graph 4.12 – Stress in profitability:
negative ROA in the 1997-1998 period (min value)



4.4. Criminal and illegal factors

In this section we underline the potential role of "non-traditional" causes of financial instability. An analysis of the root causes of recent financial crises in emerging countries suggests that criminal and illegal factors (organised crime, corruption, tax evasion), and their related revenues in the economy, were prevalent enough to have influenced or precipitated the development of the crisis. The infiltration of illegal and criminal capital into financial systems has probably increased in recent years.

The role of illegal capital movements can be captured from a twofold point of view:

- distortions in the normal and regular behaviour of financial market; and
- the credibility of the intermediaries and of the institutions involved.

On the basis of different official sources, we can note that the banking sector has traditionally been, and still remains, the most important vehicle for laundering illegal funds. That is why the

attention of regulators in most countries focuses on it.

The possibility for criminal organisations to launder their proceeds through banking institutions occurs less frequently without the financial or commercial operator being aware of its illicit source. In a growing number of cases the bank's involvement implies a more or less explicit complicity. This seems to be a recurring trend: a corrupted or controlled institution.

According to experts, the control of banks by criminal groups or by elements with criminal ties is especially worrying. For example, many of the 2,000 banks in Russia are believed to be "mafia" controlled. Until the Central Bank recently raised capital requirements, it was cheaper to buy a bank than a luxury car. The mafia has also attempted to obtain significant shareholdings in small or provincial banks in order to install their representatives for purposes of money laundering.

Some banks in Eastern Europe are also believed to be influenced or controlled by criminal elements. But, apart from mafia control, many banks in Eastern Europe really do not differentiate between legitimate and illegitimate funds.

This situation occurs not only in Russia but also in connection with financial institutions located in countries where governments lack the legal mechanisms and enforcement competence to deal with money laundering; institutions which do not co-operate in identifying the real owner of the funds because of corporate or bank secrecy laws.

Representative offices seem to constitute another favourite vehicle for money laundering. These are offices representing a foreign bank that does not have a branch in a specific country. Since they are not banks, they are not allowed to carry out real banking activities, such as having a file of creditors (account holders). However, these kinds of offices can transfer sums of money through the corresponding bank to the parent bank. The representative offices do not keep books, so that searches can never be successful, and the paper trail cannot be followed up. By supplying a receipt, the parent bank enables the client who makes the deposit to collect the money abroad. Representative offices can therefore be part of the money laundering chain and recently some of those located in Turkey and Morocco have been found to be involved in such criminal acts.

Furthermore, we have to note that, since stricter legislation is putting banking institutions in a position to prevent such illegal acts, money managers are increasingly oriented towards the acquisition or the control of non-banking financial institutions. These institutions are often not subject to the same reporting requirements as banks, and can be effective conduits for criminal proceeds, while circumventing many foreign exchange and reporting requirements.

Obviously the new emerging figures of money launderers, as well as the traditional ones, increasingly use the same financial instruments which are employed daily by legitimate commercial enterprises. Some of these instruments are more conducive or preferred by money launderers because of their inherent convenience, or because they make it easier to conceal the original source of the funds they represent.

To assess the vulnerability of different countries to illegal capital movements we can use the so-called "money laundering multiplier model". From a qualitative analytical perspective we can say that money-laundering represents the multiplier of the criminal organisations' economic – and subsequently political – power. This occurs because money-laundering has the particular economic function of transforming capital from illegal sources which carries just potential purchasing power into real purchasing power, thus benefiting those subjects who can dispose of such laundered money.

The rationale of the multiplying effects of money laundering with respect to the criminal

subject's economic power is the following: starting from the initial crime and illegal acts that produce "dirty" revenues, the laundering process allows – given some laundering costs – such capital to be re-invested in legal and illegal sectors of the economy. The part that ends up in the illegal sector will further produce additional dirty revenues to be laundered; the money-laundering cycle has therefore taken off and each step – provided that no obstacle hinders the process – contributes to strengthening the economic and financial power of criminal subjects.

Money laundering can represent a dangerous polluting factor from at least three points of view:

- it can raise the incidence of *financial pollution* since the laundering process requires the involvement of banking and financial intermediaries who are more or less aware of what is going on
- money-laundering can also increase the rate of *real pollution* by boosting illegal revenues and financial assets since it makes it feasible for criminal subjects to re-invest such capitals;
- greater economic power in the hands of criminal organisations inevitably leads to their increased influence on a country's social and political life, with subsequent exacerbation of *social pollution* standards.

Other things being equal, the pollution effects are likely to increase the probability of financial instability.

There are at present no consistent estimates regarding the instability risks due to criminal and illegal factors. As regards policy decisions, in the future it will therefore be crucial to promote specific international studies on this critical issue since the growing diffusion of international financial intermediaries, driven by the globalisation process, will offer criminals a channel through which to expand.

Increased understanding of the relationship between financial instability and illegal factors will offer some indications for planing anti-money laundering legislation in a perspective of scarce resources, limited technical capabilities and undesired effects on legal environments.

From this point of view, it is important to develop the money laundering multiplier model thoroughly in order to have a theoretical framework to select those financial instruments, markets and institutions which should be controlled and put in charge of anti-money-laundering tasks..

In fact, the policy measures should not necessarily be addressed to the most commonly used financial devices, but rather to those which are the most dangerous. Concentrating law enforcement efforts and resources on those financial instruments, markets and institutions that contribute mainly to the growth of criminal systems will produce three potentially beneficial effects:

a) reducing the cost charged by legislation to a large part of the financial system (that most commonly used by ordinary individuals);

b) concentrating the efforts on well-defined and limited targets, encouraging the exploitation of scale economies and understanding cumulative effects in the law enforcement activities;

c) reducing the opportunities for criminals to shift from controlled to uncontrolled financial devices. Only the less economically convenient financial devices (with regard to the growth process of the criminal business) should, in fact, be left without control.

4.5. Conclusions

This chapter has analysed the relationship between prudential concerns and banking sector stability in a number of developing and transition economies in a period of generalised turmoil in the world financial system. The relevance of the link between the two variables has emerged as a key factor of stability, especially during the latest crisis. It is indeed widely accepted that the internal shortcomings of individual countries made them unable to react to external pressures, thus transforming the banking systems into channels which transmitted and amplified the crisis.

Our analysis has revealed a number of instability factors related to prudential regulation. In particular, in the case of Asian banks, a low equity level, low liquidity and a high exposure to lending in foreign currencies were some of the causes of the banking sector crisis. On the other hand, the different intrinsic characteristics of Latin American and Eastern European banks explain their resilience when faced with the spreading crisis. We have also discussed the relevance of criminal and illegal factors, which emerge as important causes of financial instability.

Generally speaking, we detected areas of weakness connected to insufficient prudential regulation that should be amended in order to increase the stability of national and international financial systems. The great differences in regulations and definition among countries have important consequences not only in terms of the efficacy of prudential regulation but also on the comparative evaluation of the situation in different countries. Setting international standards in regulations – but also in other areas like accountancy – is therefore crucial to improving international investors' decisions (see chapter 3.1). It is important to stress that a good regulatory environment is useless without effective supervisory authorities having the instruments to impose sanctions.

An important aspect is related to the structure of the financial system, since we have seen that excessive dependence on the banking system might produce disruptive consequences on the economy in case of a banking sector crisis. It is therefore important to develop a more diversified and balanced financial system both in terms of capital markets and a variety of non-banking financial institutions (leasing, factoring and venture capital companies, merchant banks, pension funds, insurance companies, mutual funds).

It is important to take into consideration the risks linked to financial liberalisation and deregulation. Increased competition lowers the franchise value of financial institutions and increases the incentive to take more risks. Again, we would like to stress that a liberalisation policy must be coupled with effective regulation and supervision.

Finally, we focus on the possible role of non-traditional factors (criminal and illegal) as a possible channel of instability. We note that there are no consistent estimates on the instability risks caused by criminal or illegal factors. As regards policy recommendations, we therefore suggest promoting specific international studies on this issue. A greater understanding of the relationship between financial instability and illegal factors will be useful in planning anti-money-laundering legislation in view of the scarce resources, limited technical capabilities and undesired effects on the legal environment. Moreover, the money-laundering multiplier model should be more thoroughly developed so as to have a theoretical framework to select those financial instruments, markets and institutions which should be controlled and put in charge of anti-money-laundering tasks. It is extremely important to achieve these objectives since the globalisation process has led to the increase in financial intermediaries which will provide criminals a channel through which to expand their illegal activities in the future.

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Chapter 5

Available internal policy instruments

5.1. Introduction

The explosive growth in the volume of financial transactions, the increased complexity of modern financial instruments, and the real costs of financial crises, have put *financial stability* at the top of policymakers' agenda. The growing number of financial transactions, and the integration of capital markets have made financial institutions more interdependent, and have brought to the fore the issue of systemic risk. Although international capital flows generally improve the efficient allocation of savings and investment, they can also undermine national economic policies and destabilise financial systems.

The central case for making the health of the financial system a public policy concern rests on two propositions.

First, left to itself, the financial system is prone to bouts of instability.

Secondly, that instability can generate sizeable spillover effects (externalities)[108]. The relevance of such externalities is probably sufficient to make achieving and maintaining stability a public policy goal.

It is nevertheless difficult to determine how public authorities should promote stability. In general terms, they should balance the need for financial stability with the desire for an innovative and efficient financial system.

This chapter focuses on how to design policies which will keep the financial system safe, efficient and stable, and how to respond to financial crises. While this chapter emphasises the role of internal policy instruments, chapter 6 will discuss issues linked to the international dimension of financial stability, and to the need to reform the international financial architecture. The rest of this chapter proceeds as follows. Section 5.2 looks at prudential financial regulation and financial safety nets as basic instruments to promote financial stability. After a brief survey of the theoretical framework on financial stability, sub-section 5.2.2 describes the functioning of the US model, while sub-section 5.2.3 discusses the applicability of such a model to the Euro zone, and highlights subtle issues in the area of European financial stability. Finally, sub-section 5.2.4. looks at prudential regulation and

[108] To be less succinct, the collapse of a financial firm imposes direct costs on shareholders who lose their investment; on employees who lose their jobs; and on depositors and unsecured creditors, whose claims may be forfeit. The direct or private costs of instability, financial firms and markets are not therefore qualitatively different from other sectors of the economy. Moreover, while there is always pressure to compensate for private losses, it is generally assumed that the public interest is best served by allowing market discipline to work -- unless there is evidence of market failure. The reasons why difficulties in a financial firm might give lead to public policy concerns may be due to the following (overlapping) factors: (1)losses to depositors and other creditors may be exacerbated because of the particular vulnerability of financial institutions to "runs"; (2) the risk of losses spreading to other financial institutions through "contagion" or direct exposure is high; (3) the possibility of budgetary costs from the perceived need to protect depositors or bail out troubled institutions; (4) the possibility of increased widespread macroeconomic consequences from instability in the financial sector; and (5) a loss of confidence in financial intermediation may lead to financial "repression" resulting in sub-optimal levels of savings and misallocation of investment. The first two points concern the potential for an "instability bias" in the financial system; the last three, the external costs generated by such instability.

"safety nets" in developing countries. Section 5.3 discusses the role of foreign banks as an instrument to enhance the functioning and stability of financial system, while section 5.4 analyses the choice of exchange rate regime – an important policy variable during the recent Asian crises.

5.2. Policies for maintaining financial stability: prudential financial regulation and financial safety nets

5.2.1. An institutional framework for financial stability: lessons from theory

The normative answer to the prevention of financial instability in the context of industrialised countries provides an institutional framework composed of two pillars:

- prudential financial regulation and
- financial safety nets.

Prudential regulatory and supervisory measures are generally understood as encompassing official actions (laws, regulations, and officially sanctioned policies and procedures) that

(1) promote the soundness of individual institutions by enforcing adequate risk management, promoting effective internal governance, and fostering market discipline; and

(2) protect investors against fraud and deceptive practices, ensuring performance by financial agents of fiduciary responsibilities.

Specifically, prudential regulation should be addressed in order to

(1) reinforce private incentives for banks (and other participants in the financial markets) to recognise the risks they are taking; and

(2) enable the authorities to monitor potential threats to systemic stability so corrective measures can be taken, if needed.

The scope and content of prudential measures and procedures are undergoing a significant global evolution which reflect, among other things, the updating of techniques to identify, measure and manage financial risk and the increasing need to harmonise supervisory approaches at an international level.

In recent years the dominant form of financial regulation to promote systemic stability has been ***risk-based capital adequacy*** (see also Chapter 3.2). Liberalisation and deregulation have increased competition, which, in turn, has eroded bank's profitability and diminished franchise values. As a result, regulation to limit competition and bolster the profitability of financial institutions has no longer been a practicable or acceptable means of ensuring systemic stability. Instead of limiting banks' activities, regulators have sought to ensure that banks[109] are adequately capitalised against the risk they run. This is the philosophy behind a

[109] Two reasons are usually given for believing that banks warrant special treatment in the preservation of financial stability. The first is that banks' liabilities are repayable at par on demand, while their assets are typically comparatively illiquid. This makes them more liable to runs (if something happens to undermine confidence) that cause illiquidity and even insolvency. The second is that banks continue to be responsible for operating the payment system. This means that difficulties in one institution are transmitted, semiautomatically, to the rest of the financial system, with the risk, in the extreme, that the payment systems could size up. Both reasons continue to be valid though, perhaps, not as much as before. Banks remain special, in that, instability in the banking system has a greater capacity to generate systemic contagion than difficulties elsewhere in the

series of documents issued by the Basle Committee on Banking Supervision: supervisors have divided assets into a number of risk classes and specified the amount of capital to be held against each. Although such an approach has several advantages, certain aspects of the way the approach has been implemented have drawbacks, which are becoming increasingly recognised.

As a result of these perceived shortcomings, growing attention is now being given to using regulation to better harness market incentives in support of stability. In other words, regulation should, as far as possible, be directed to reinforcing the self-regulatory tendencies of the market. This means less prescriptive regulation, and a greater reliance on the internal controls of market participants (see also Chapter 3.2), supported by mechanisms that increase the incentive for prudent behaviour. In any market, self-regulation is a powerful force. The strongest incentive to act with prudence and integrity comes from those with the most to lose when they fail to do so. Recent thinking has therefore focused on ways of strengthening the incentives on individual institutions to manage their own affairs prudently and on their counterparts to exercise appropriate discipline: in the jargon, "*incentive-compatible financial regulation*".

The debate therefore seems to be moving towards a distinction between the *measurement* of risk, which is best done by those who are closest to the portfolio and have the tools to do so, and the *capitalisation* of risk where decisions raise public policy issues. Since by underwriting the stability of the financial system the authorities are essentially providing financial institutions with catastrophic risk insurance, it is legitimate for them to limit the potential recourse to such insurance by requiring a minimum level of capital holding.

One could conceivably go even further and assign responsibility for decisions on capital holding also to the private sector. This is the philosophy behind the so-called "*pre-commitment" approach* (see also Chapter 3). The institution itself would choose how much capital to assign to cover the value-at-risk in its portfolio. If losses exceeded the calculated probability then the institution would be subject to some kind of penalty.

The idea of harnessing the forces of self-discipline is also behind the proposals of the Group of Thirty to develop industry-led standards for risk management, internal operating controls, and public disclosure (see also Chapter 3.1). By allowing the industry to propose more efficient ways of reducing risk, it would reduce the possible danger of firms cutting corners to avoid burdensome official regulation. However, with the possible exception of New Zealand, where certain special circumstances apply, no countries have adopted the position that market forces can be relied on as the sole guarantor of stability in financial institutions[110].

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financial sector. But the distinctions are becoming more blurred, with problems at key nonbanking institutions increasingly having potential spillover effects.

In many respects, size has become more important than an institution's formal character in determining its systemic significance. Regulators frequently deny that there is a "too-big-to-fail" doctrine. One can understand why they do, since to make it explicit would court moral hazard. Still, it is only realistic to recognise that certain institutions are so central to the financial system that their failure would constitute a systemic crisis. Their obligations to counterparts are so large that failure to discharge them would also cause a widespread contagion. This group of institutions includes both banking and non-banking institutions.

[110] But while official support for the pure market solution is limited, there has traditionally been strong support in academic circles.

In short, the case for market solution goes as follows: when all actors, including depositors, counterparts, managers, and shareholders of financial institutions realise they are "on their own", they will be much more prudent and financial institutions will therefore be forced to operate in a sounder and more careful way. The

Financial safety nets are generally said to be a set of institutions, laws, and procedures that strengthen the ability of the financial system to withstand bank runs and other systemic disturbances. Although the best safety net is one that makes market participants behave as if the safety net did not exist, the design of a good safety net must balance its components – including deposit insurance, lender-of-last-resort facilities and their linkages with capital requirements, supervision, and closure and recapitalization rules – in such a way as to carefully control the amount of risk borne by the government. Although prudential regulation may sometimes not imply the creation of an explicit safety net, state regulation of the financial system frequently results in state intervention during a time of crisis even when there is no formal role for the government.

Deposit insurance is one form of the safety net in which depositors, with or without a limit to the amount, are insured against losses due to a bank failure. In general, a deposit guarantee scheme is run by a public body that charge periodic premia on insurees (member banks); such assessments flow in a fund and are used in case of a bank failure to refund depositors. The most delicate aspect of a deposit insurance scheme (as in any contract of insurance) is probably the premia system: while most schemes provide for size-related assessments (that is premia are related to the size of the bank) a more promising approach adjusts premia to the risk profile of the single insuree.

Deposit insurance is not the only way in which governments provide depositors with a safety net. Governments often stand ready to provide support to domestic banks when banks face runs even in the absence of deposit insurance. This support is sometimes provided by lending from the central bank to troubled institutions, and is often referred to as the *lender-of-last-resort role of the central bank.* In other cases, funds are provided directly by the government to troubled institutions, or these institutions are taken over by the government and the government then guarantees that depositors will receive their money in full.

Although a government safety net can be quite successful in protecting depositors and preventing bank panics, it is a mixed blessing. The most serious drawback of a safety net stems from moral hazard which arises because depositors do not expect to suffer losses if a bank fails. Depositors are less likely to impose the discipline of the marketplace on banks by withdrawing deposits when they suspect the bank is taking on too much risk. Consequently, banks that are provided with a safety net have incentives to take on greater risks than they would otherwise.

One way to deal with such a problem has been that of charging risk-adjusted deposit insurance premia (anyway, the existence of a government safety net dampens the incentive for banks to hold diversified portfolios even when regulators attempt to impose risk-adjusted deposit insurance premia). The effectiveness of an institutional safety net depends on its ability to promote adequate capital adequacy levels in banks and firms, create effective monitoring and supervisory mechanisms and impose appropriate punishment (such as bank

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failure of an individual institution will become less likely, and the risk of systemic contagion will be almost non-existent. The moral hazard implied by official intervention will be removed, with favourable consequences on the efficiency of resource allocation.

The case against can be put on several levels. Basically, it is argued that there are events that may occur very infrequently, that cannot be predicted and that can destabilise the financial system if not prevented. More prosaically, as pointed out by Goodhart and others, political pressures make it very hard for elected authorities to refuse to assist institutions whose depositors have powerful electoral influence. Since most market participants know this, any ex ante announcement by governments not to support the financial system lacks credibility. Moral hazard is therefore not avoided. Thus, despite the attraction of reliance on market forces, most observers accept that, by itself, it is insufficient to guarantee stability in all circumstances.

closure or removal of bank management) when the resources of the safety net are called upon. Safety nets should also strengthen rather than supplant private capital, monitoring, and closure mechanisms.

Closure policy is the Achilles' heel of any explicit or implicit government safety net for the financial system. The inability to close failing banks allows bank equity holders to engage in the rollover of loan losses and other risky lending practices, thereby bidding deposits away from other institutions and transmitting incentives for risky lending to the rest of the financial system. Just a few banks operating in this way during good times can weaken the entire system's ability to withstand large aggregate shocks.

There are both technical and political reasons why closure policy is such a thorny issue for bank regulation. From a technical standpoint, bank liquidation is generally only undertaken as a last resort to avoid the loss of the ongoing operation value of the bank. Between the two poles of forbearance and liquidation there are a wide range of possibilities, including voluntary recapitalisation by the bank owners, cash-assisted acquisition by another bank, temporary administration by a government work-out agency and forced capital levies on depositors[111].

From a political standpoint, allowing a bank to fail will not only incur the wrath of non-insured lenders against the bank but will also go against the interest of politicians who depend on bank owners for political support. The problems for designers of safety nets is to create *ex ante* agreements that make it difficult *ex post* to renege on the "no bail out" position. Since the impending failure of a large bank may disrupt the payment system, the various intervention options must be clearly identified in some detail in advance in order to facilitate the bank resolution process without resorting to a political rescue of the bank owners.

5.2.2. A concrete and consistent institutional framework for financial stability: the US model.

Although financial instability is a particularly severe problem for emerging-market countries which suffer disproportionately when it occurs, it has struck industrialised countries just as frequently. In the wake of the S&Ls (Savings and Loans) crisis – which cost the American taxpayer dearly – the United States instituted the Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991. This implemented a new financial regulatory model that was to create the right incentives for all the parties involved. Such a regulatory framework not only appears to have worked well since then, but it has also been recently adopted in a similar form by Japan and Canada and it now seems to be the dominant financial regulatory framework in the industrialised countries.

The main elements of the above-mentioned US scheme are

- compulsory risk-based banking capital requirements (see also Chapter 3);
- a system of bank deposit insurance that charge risk-related premia;
- a clear allocation of the supervisory responsibilities among the various supervisory agencies, especially between the Federal Deposit Insurance Corporation (FDIC) and the Fed in managing the two main components of the financial safety net: that is, deposit insurance and lending-of-last-resort facilities; and
- the introduction of clear bank closure rules.

[111] Compounding the technical problems associated with bank closure are additional technical problems stemming from difficulties in monitoring the true net worth of banks.

As regards the provision of lending-of-last-resort facilities by the central bank, the FDICIA limits the Federal Reserve's ability to provide, *de facto*, too-big-to-fail treatment of a failing bank through its discount window. Allowing a bank to borrow at the discount window makes it possible for uninsured deposits to be withdrawn prior to the resolution of a failing bank by providing the liquidity needed to cover withdrawals. The FDICIA limits such lending to undercapitalised banks to 60 days within any 120-day period unless the Federal Reserve or its primary federal bank regulator certifies the bank as viable.

For banks that are critically undercapitalised the Federal Reserve is instructed to demand repayment no later than at the end of five days. If violation of the five-day limit occurs, the Fed is liable for part of the increased cost to the FDIC, and the Board of Governors of the Federal Reserve must notify Congress of any payments to the FDIC under this provision. Under the FDICIA, the Federal Reserve discount window retains substantial legal authority to lend to problem banks, but failure to comply with the intent of this portion of the act exposes the Fed to substantial ex-post political pressure.

In the case of closure policy, a firm and credible commitment is made that

- banks can be closed by the relevant authority;
- that they can be closed before they become insolvent if they do not comply with special obligations (to increase capital ratios, sell bad loans at a discount, restructure certain sections of their activity, discontinue other activities, etc.); and
- that the authority dictates when prudential indicators signal an increasingly risky situation and/or a dangerous deterioration in their profitability.

This financial supervisory procedure called of Prompt and Corrective Action (PCA) limits regulators' discretional power and should prevent them from exercising forbearance in disciplining or closing banks approaching insolvency. The basic indicator is the bank's capital/asset ratio and corrective measures are imposed when the ratio goes below certain threshold values (see Table 5.1).

The PCA is probably the most innovative element of the US model; after its introduction in the United States in 1991, it looked as a promising and appealing approach to Japan and Canada as well, which implemented similar supervisory procedures in the middle of the 90s.

5.2.3. Systemic stability in the Euro zone

This section discusses whether the complex but seemingly consistent financial regulatory framework that exists in the US can be applied to the European Union. While it appears that the EU would benefit from the application of the US model, a number of sensitive issues will first have to be discussed among European policymakers. These issues concern the fundamental components of the above-mentioned financial regulatory approach (namely prudential financial supervision and financial safety nets), as well as the European need to co-ordinate roles and competence between the national authorities and the ECB. In the rest of the section we analyse these issues with a view to understand whether further policy action is needed at the European level. Finally, this section argues that systemic stability in the Euro zone is affected by the lack of a well-defined LOLR function, and by the existing separation of competence between national and central authorities in the area of financial supervision.

Table 5.1– US Version of Prompt and Corrective Action

Supervisory categories	Capital Adequacy Ratio Trigger		Mandatory provisions	Discretionary provisions
	Risk-based capital ratio [a]	Leverage ratio [b]		
Well capitalised (Zone 1)	>= 10%	>= 5%		
Adequately capitalised (Zone 2)	>=8%	>= 4%	No brokered deposits except with FDIC approval	
Undercapitalised (Zone 3)	< 8%	< 4%	No brokered deposits Suspend dividends and management fees Require capital restoration plan Restrict asset growth Approval required for acquisitions, branching and new activities	Order recapitalisation Restrict interaffiliated transactions Restrict deposit interest rates Restrict certain other activities Any other action that would better carry out prompt corrective action
Significantly undercapitalised (Zone 4)	< 6%	< 3%	Same as for Zone 3 Order recapitalisation Restrict interaffiliate transactions Restrict deposit interest rates Pay of officers restricted	Any Zone 3 discretionary action Conservatorship or receivership if fails to submit or implement plan or recapitalise Any other Zone 5 provision, if such action is necessary to carry out prompt corrective action
Critically undercapitalised (Zone 5)		<= 2%	Same as for Zone 4 Receiver/conservator within 90 days Receiver if still in Zone 5 four quarters Suspend payments on subordinated debt Restrict certain other activities	

Source: Board of Governors of the Federal Reserve System (1991)

[a] *Risk-based capital ratio: total capital, including equity, subordinated debt, and preferred stock, divided by risk-weighted assets.*

[b] *Leverage ratio: tier 1, including equity capital, divided by total average assets.*

The EU framework for financial stability was set forth in 1985. In the original plan, three areas were considered crucial to the stability of the European financial system: the establishment of minimum banking risk-based *capital requirements*, the establishment of compulsory bank *deposit guarantee schemes* in each member country, and banking *closure*

policies.

The issue of minimum *capital requirements* has been dealt with in an extensive manner in two important directives (89/299/EEC and 89/647/EEC), and the policy directives are fairly comprehensive. Nevertheless, even though banking capital requirements are the same across the EU, different accounting methods in different countries prevent a complete uniformity. While we refer to the discussion of these issues in Chapter 3, we believe that some further co-ordination effort in this area would be desirable, and that the EU should have a leading role in the undergoing revision of the Basle Criteria.

Even though a European Directive on *deposit insurance* (94/19/EC) has been issued, the European regulation lacks specific discipline on several key aspects of a guarantee scheme. While the Directive issued in 1994 established common minimum requirements for European deposit guarantee schemes, the country-specific insurance schemes differ along several dimensions:

- the degree of coverage provided (which varies from Euro 20,000, the minimum required by the European Directive to around 100,000 provided by the Italian guarantee scheme);
- the legal nature of the scheme (some schemes are publicly administered while others are privately run); and
- the types of premia charged (few countries charge risk-related premia).

This impressive heterogeneity is partly due to the lack of specific guidelines on the part of the European authorities, and partly to the fact that the usual mechanism combining the home country principle with the principle of mutual recognition has not led to a *de facto* harmonisation of deposit insurance schemes.

The 1994 Directive on deposit insurance requires some important "fine tuning". The existing Directive is unambitious about the financing procedures and the ceiling of the guarantee (and thus the extent of co-insurance). To enforce a true "level playing field" funded systems must be the rule, the pricing of deposit insurance must be related to global risk of each bank, and a clear linkage must be established between deposit insurance and capital ratio regulations.

In the area of *closure policies*, the European Union lacks a unified framework. While in the late eighties the Commission drafted the relevant guidelines, a Directive was never issued. More recently, the Commission published a communication to the member countries, and called for the necessity to build a "framework for action"[112]. We believe that in the area of closure policy the US experience surveyed in the previous section may turn out to be very useful for the EU, especially if the latter were to adopt a well defined procedure of early intervention and resolution of ailing banks.

Systemic stability in the Euro-zone may be seriously affected by the lack of a well defined lending-of-last-resort (LOLR) function. Indeed, under the existing setting, inside the Euro zone there is no explicit provision for the lending of last resort function. What the ECB should do in the middle of a financial crisis has not been specified, and remains largely and dangerously ambiguous. Conversely, in order to manage in an effective way the LOLR facility, a transparent and well-organised procedure must be put in place. In other words, a banking crisis strategy, like the European one, where there is no explicit, official role for LOLR, is not sufficiently transparent and lacks credibility, and, as we argue below, may even

[112] "Financial Services: Building a Framework for Action", Communication from the Commission to the Council and European Parliament, 28 October 1998, available on line at http://europa.eu.int/comm/dg15/en/finances/general/fsen.htm

worsen the effects of potential conflicts of interest between national and central authorities, and consequently trigger distorted behaviour in risk-taking and moral hazard.

While the LOLR function has to do with the management phase of a systemic crisis, financial stability is typically prevented by financial supervision. In the latter area, the ECB has almost no responsibility, and there is no European harmonisation. Supervision is essentially left to Member States, and different countries have put in place different arrangements. In some countries, the competence is assigned to the National Central Bank (NCB), in others to a government agency, yet in others the NCB and a government agency share it. Further, the existing provisions relating to co-ordination and exchange of information among the national supervisory authorities and the ECB impose very weak requirements. While the ECB can request information about individual banks from national supervisors, the latter do not appear to be under any obligation to provide it in full.

As several authors have recently stressed, the separation of competence in the area of financial supervision makes the possibility of implementing the LOLR function particularly difficult, since national supervisors do not have the right incentive to communicate the information of problem banks truthfully. To the extent that an insolvent bank is treated like an illiquid one, the cost of the insolvency is partly shifted to the rest of the Union.[113] Thus, although the relevant information is available inside the ESCB, it is quite possible that this information will not be brought to bear on the decision concerning the lender of last resort activities.

Several reform proposals have been suggested in the literature. Some authors argue that harmonising the supervisory procedures would reduce these problems. Others are convinced that the removal of the incentive problems would require centralising financial supervision at the European level. While these reforms would be substantial in nature, it appears that they could be implemented without formal changes in the Maastricht treaty.

5.2.4. Financial regulation and safety nets in developing countries

The implementation of an effective scheme of financial regulation and of properly designed safety nets is a particularly important issue in the developing country perspective, as the recent experience of financial instability at the world level highlighted.

An analysis of the relevance of internal financial regulation in emerging markets has been developed in chapter 4. While detecting the main fragilities of banking systems in a selected number of developing and transition economies, we focused on financial regulation. We noted that, although internal measure to prevent instability – such as risk based capital adequacy ratios – have been implemented and are now compulsory in most countries, several shortcomings hinder their proper functioning. As previously mentioned, indeed, a proper regulation has no value if a well functioning supervisory authority is not in place. Moreover, the efficacy of financial regulation can be limited by the lack of proper accounting and reporting roles.

Deficiencies under both these perspectives have been reported to be relevant in most developing economies. For this reason, it is possible that banks, insolvent by international standards, continue to operate, concealing their problems through creative accounting practices or the absence of reporting actions.

[113] This problem has been stressed by several authors (e.g. Bruni and de Boissieu, 1999) and organizations like the IMF (Prati and Schinasi, 1998), the Centre for Economic Policy Research (Begg and others, 1998), and the Centre for European Policy Studies (Lanoo, 1999)

An even more serious problem may arise when national regulations do not provide adequate market exit instruments to be applied to insolvent institutions. The lack of bankruptcy regulation, indeed, by preventing insolvent banks exit from the market, reduces the trigger of a Central Bank intervention in case of failure to accomplish to financial regulation requirements, thus perpetuating instability at the overall system level. Such a situation has been common in most of the developing countries during the first years of transition, and in Asia at the beginning of the recent international financial turmoil.

Also the design of functioning safety nets, deposit insurance or lender of last resort schemes appears a particularly urgent task in developing economies. Both the advantages of safety nets, i.e. preventing systemic failure, and the risks, i.e. generating wrong incentives, appear to be enhanced in the developing country context.

As regards systemic risk prevention, the backbone of the financial system in most developing countries is composed of banks, due to the underdevelopment of sophisticated financial instruments. A loss of confidence due to a global failure may hinder future economic developments and financial intermediation for a long time.

In transition economies, the limited role of intermediation of all Baltic countries, for example, is definitely a consequence of a loss of confidence by the public, due to failures occurred in the early 1990s. It should however be noted that in certain developing economies, where there are limited interrelations among banks and limited reliance on underdevelopment payment systems, the risk of a direct contagion among banks might be reduced, thus rendering systemic failure less probable.

In terms of incentives, a wrongly-designed safety net can be even more disruptive than in developed economies. A full comprehensive insurance covering depositors can hinder their monitoring role over banks, while a guaranteed rescue intervention over an insolvent bank may totally distort bank lending and risk-taking policies.

A relevant example comes again from the early years of transition in Eastern Europe. The automatic intervention of the Central Bank as a lender of last resort determined a huge increase in the bad debt problem. Local banks, indeed, were used to refinance insolvent enterprises, due to the fact that they were confident of Central Bank recapitalisation. The incentive problem was worsened by the role of the State as a significant shareholder of local banks.

Table 5.2 presents the main issues concerning deposit guarantee schemes and lender of last resort interventions in place in the main developing and transition economies. It is important to note that most of the countries analysed have now implemented depositor’s protection schemes. Most of the analysed measures focus on small depositors and do not insure interbank deposits, thus limiting wrong incentives.

Moreover, official interventions to rescue problematic banks are slowly changing from always-guaranteed rescue interventions for all large banks to selective measures towards highly interrelated illiquid banks (Mexico is an example of this evolution).

This kind of selective approach in providing lending-of-last-resort facilities should reduce the too-big-to-fail problem.

Table 5.2– Main regulation affecting contagion probability

Country	Deposit protection scheme	Lender of last resort and recapitalisation
China	*Informal stated policy of protecting the interest of depositors; more formal system for medium and small-sized deposit-taking financial institutions*	
India	*Deposit insurance and Credit Guarantee Corporation since 1962*	*Government recapitalisation for some State Owned Banks*
Hong Kong	*No formal scheme is in place, but since 1995 small depositors receive priority payment*	*Liquidity support by Exchange Fund; Government bought three banks as a rescue measure*
Indonesia	*Informal promise of guarantee since January 1998, formal scheme under study*	*Liquidity support by Central Bank and support via Bank Restructuring Agency for insolvency*
Korea	*Korea Deposit Insurance Corporation since 1996*	*Liquidity support by Central bank. Government and Deposit Insurance Fund support for insolvency*
Malaysia	*No protection in place*	*Special agency (Danamodal) for insolvency*
Philippines	*Philippines Deposit Insurance Corporation*	*Central Bank provides emergency advances to prevent liquidity problems*
Singapore	*No protection in place*	
Thailand	*Financial Institution Development Fund*	*Ministry of Finance for insolvency and Financial Institution Development Fund for illiquidity problems*
Argentina	*FGD (deposit insurance fund for financial institutions) since 1995*	
Brazil	*Credit Guarantee Fund for financial institutions*	*Lender of Last resort by Central Bank*
Chile	*State deposit system for time deposits; demand deposits are fully guaranteed by the central bank*	*Central Bank, both for liquidity and insolvency problems*
Colombia	*Guarantee Fund for Financial Institutions since 1985*	*Central Bank for liquidity and Deposit Insurance Fund for insolvency*
Mexico	*New guarantee scheme since January 2000 with limited guarantee (under the previous full guarantee)*	*Deposit Insurance Fund. SINCE January 2000 rescue is no more automatic.*
Peru	*Insurance Deposit Fund since 1991*	*Lender of Last resort by Central Bank*
Venezuela	*Bank Deposit Guarantee and Protection Fund since 1985*	*Deposit Insurance Fund rescued three banks*
Czech Republic	*Deposit Insurance Fund since 1994*	*Lender of Last resort by Central Bank*
Hungary	*National Deposit Insurance Fund, since 1993*	*For liquidity problems banks are excused for reserve requirements and massive interventions in terms of recapitalisation*
Poland	*Banking Guarantee Fund since 1995*	*Central Bank interventions for both liquidity and insolvency problems*

Source: Hawkins and Turner (1999), pp47/48, 56 and 59.

5.3. The activities of foreign banks

The issue of liberalisation of foreign banks' activities is a further policy option with relevant effects in terms of financial system stability and efficiency. Like the previous suggestions, this is an internal policy instrument that each national government could pursue, both in developed and developing countries. The direct effect of such a policy is likely to differ according to the economic environment in which it is implemented. While the main consequences in terms of stability are likely to appear in the latter case, enhanced competition and efficiency gains can be expected in more developed economies. Foreign bank entry appears to be a particular up-to-date issue in Europe due to liberalisation of the banking system originated by the first[114] and the second[115] European Union directives and

[114] 77/780 EEC amended with 85/345 EEC, 86/137 EEC, 86/524 EEC, 89/646 EEC, 95/26 EC, 96/13 EC, 98/33 EC.

[115] 89/646 EEC implemented since 1993.

further enhanced by EMU.

We define foreign banks' activities as a bank's entry into a foreign country through the acquisition of a share in a local bank or the settlement of a branch or an operative representative with the aim of providing a whole range of services for the host market. This is different from cross-border trade in financial services, i.e. international bank landing and flows of capital related to capital account (analysed in chapter 1).

5.3.1. Determinants of foreign bank activities

There are two main reasons why banks decide to develop their activities outside their home countries:

- in order to facilitate their international activity development. This motivation mainly relates to bank investment activities directed towards international financial centres where capital market trade tends to be concentrated. It may also relate to bank investment in tax holiday centres;
- in order to adopt new development strategies. Indeed, due to the globalisation of financial systems banks cannot merely adopt domestic competitive strategies but should pursue world-integrated expansionary policies.

Focusing on the first reason, Hultman and McGee (1990) and Grosse and Goldberg (1991) analyse foreign bank activities in the US. They find evidence that foreign bank entry is positively related to international links between the domestic and the foreign countries and to the size of the foreign banking system. It is therefore likely that bank direct investments towards the most advanced banking systems are mainly meant to support their own international activity development. Fisher and Molyneux (1994) provide similar results, focusing on the foreign bank presence in London. They show that both the size of the foreign banking sector and trade interrelations between the host and the foreign country appear to be relevant determinants of foreign bank entry.

Similar investment strategies can be shown as regards fiscal paradises or tax-competitive systems. One example is the development of investment activities by European banks in both Luxembourg and Ireland, the two most tax-competitive financial systems in the European Union. Moreover, the recent reduction in the number of foreign banks operating in London, highlighted by "The Banker" (November 1999), has been at least partially determined by a shift of Japanese bank development aims from international to domestic operations in the wake of the recent period of crisis.

Focusing on new development strategies, several issues concerning the shape of international financial system are likely to have influenced the growth of banks direct investments. The main issue is related to the radical change which has affected the banks' operating environment as a result of increasing globalisation, liberalisation and competition. Such a transformation is forcing banks to behave internationally and to expand in other markets which can be considered as an extension of the domestic sector.

Due to continuous developments in IT, size is increasingly becoming a fundamental strategic variable in an integrated banking system which can profit from economies of scale and thus enhance efficiency. A concentration process is thus under way which also involves international expansion. International bank expansion can be directed towards developed or developing countries. Whatever the destination, an efficiency or development gap between the investor bank and the host banking system should exist to justify the investment decision.

Generally speaking, the main reasons for the expansion of banking activities in foreign

markets are:

- A "follow-the-client" attitude, which means that banks follow their domestic clients when they start operating in new markets. If such an investment strategy is pursued, it means that in order to protect the exclusive relationship with their home country clients foreign banks are prepared to enter new markets, following both trade and investment flows in the real sector. The rationale for such behaviour stems from the existence of a unique relationship between a bank and its clients, due to the information advantage provided by existing credit links. If a bank wants to preserve its advantage over other competitors, it has to provide a whole range of services and to localise its business wherever the client requires it. For this reason, direct investments in the banking sector are usually positively linked to foreign direct investment and trade in the real sector.
- A second motivation for foreign bank activities in external markets refers to trade relations and cultural and geographical proximity. Such a motivation can be extremely relevant when the domestic market becomes too small for local banks. In such a situation, banks may try to expand their activities towards those countries which are culturally and geographically closer to the home market. Several examples of such an attitude could be reported including: the recent expansionary policy of Spanish banks in Portugal, or past investments in Latin America, investments of Swedish and Finnish banks in the Baltic area, Austrian and German investments in East-Central Europe.
- A third motivation is related to the aim of exploiting opportunities provided by a new market. In such a situation investor banks tend to be large and more efficient players compared to domestic banks. They provide new or better services and products at a lower cost.
- Finally, the last motivation for entry may be linked to the international competitive framework. Indeed, a restricted number of large world players may try to enter new markets according to the competition strategies of an oligopolistic game[116].

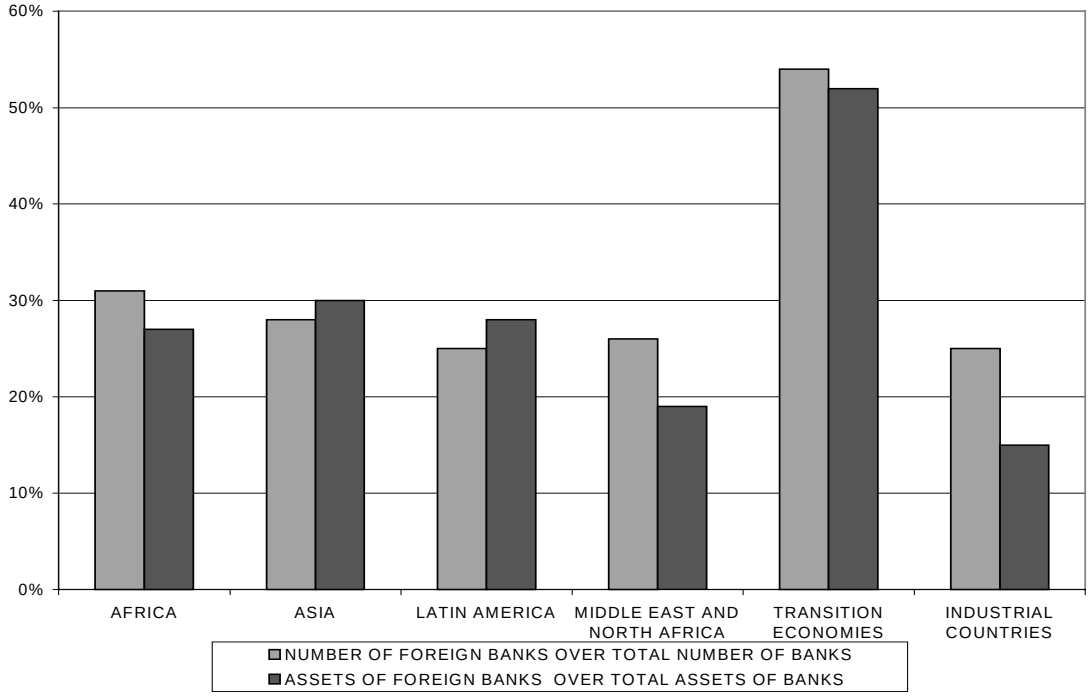
Although all of these motivations can apply to both developed and developing economies, the emphasis on different issues may differ. In particular, as regards entry in developing countries, follow-the-client attitudes tend to be the prevailing motivation, at least during the first few years. Subsequently, market opportunities and geographical proximity might matter more. In developed countries, instead, competitive pressures, both at the national and international level, may play a relevant role. As an example in Europe a process of cross-border concentration has been recently originated by a strong increase in competition mainly determined by EMU.

5.3.2 Banking activities in a foreign country

Graph 5.1 shows the relevance of foreign bank activities in different geographical areas throughout the world, taking into account both the incidence of the number of foreign banks over total number of banks operating in a determined country and the percentage of assets related to foreign capital over total assets of the local banking system.

[116] If such a bank enters a new market, its direct competitors will follow.

Graph 5.1: Role of foreign banks in different geographical areas in 1998



Source: Claessens (1999), table 4

The impact of foreign banks on the local banking systems is lowest in developed countries. Although the liberalisation of financial services has been in place for the last twenty years, most of the banks have continued to pursue non-aggressive policies towards other developed countries.

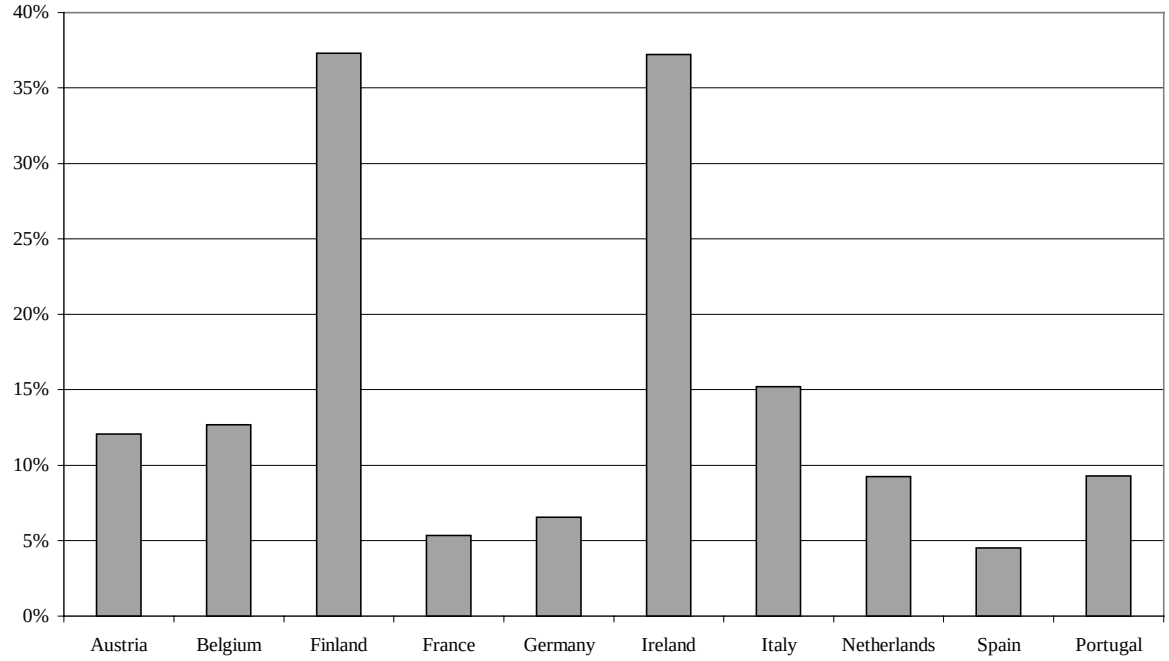
Particularly interesting is the European case. By introducing liberalisation of trade in financial services and banking freedom of settlement, the 1992 Single Market was a first fundamental step for the development of an integrated financial market in Europe. The persistence of technical barriers (mainly determined by different currencies, cultural traditions, fiscal treatments and regulatory practices), however, allowed even later a large segmentation of the banking system to persist. Single European banks continued to operate mainly in domestic market, following competitive policies which were highly defensive internally and non-aggressive in external market, in order to avoid direct interaction with foreign institutions.

Only recently, are the creation of the Monetary Union and the introduction of the Euro as a single European currency changing the situation. The development of a wholly integrated market, the emergence of cross-border competitive pressures and the need, perceived by all banks, of gaining a role in the market in order to achieve economies of scale and scope, impose a repositioning in terms of both geographical and business localisation,. This is starting up a consolidation process in the sector. In a first phase this concentration process mainly involves national banks. However, following the progressive removal of both technical and strategic barriers to international competition, a repositioning of banks in a cross-border context is expected. Although large cross-border mergers are not yet diffused, the high number of minority investments already recorded among European banks should be considered as a signal of such a growing integration in the European banking system.

Graph 5.2 shows the degree of cross-border penetration among European banks, by accounting for the share of assets related to foreign capital (coming from another European

country) over total assets of the local banking system. The Irish and the Finnish banking systems are the most internationalised in Europe, as far as foreign penetration by European banks is concerned. They both account for a foreign shareholding higher than 40% of total banking system assets. As previously mentioned, this is a consequence of an integrated market involving North-European banks, in the first case, and of favourable fiscal treatments concerning financial markets, on the other.

Graph 5.2: Incidence of cross-border bank penetration in Europe in 1999



Spain, France and Germany are the three countries characterised by the lowest penetration of foreign banks, with a share of assets in the banking sector which can be related to foreign shareholders equal to 5%. As far as France is considered, this result is mainly due to the limited dimension of foreign investments initiatives compared to the overall banking system size although France is the first destination, in terms of both number and value of investment initiatives from EMU countries. As far as Germany and Spain are concerned, instead, the low penetration has been revealed also in absolute terms.

The banking systems from the Netherlands, Belgium, Austria and Portugal are slightly more open, accounting for a foreign penetration equal to 10% of total banking assets. In Italy the share of total assets which could be related to foreign shareholdings is equal to 15%; this testifies to a progressive internationalisation, which is a consequence of the growing interest of foreign investors in that country.

Going back to graph 5.1, it is interesting to note the relevance of foreign banks in transition economies. In these countries the process of transformation of the economic system required a quick restructuring and foreign banks, which had the necessary capital competence, played a major role. However, the presence of foreign banks has been limited by the policies of individual countries regarding privatisation and liberalisation.

In other regions of the world, foreign bank penetration is the highest in Africa for two different reasons: the presence of foreign banks in South Africa, and the limited development of other banking systems. In Asia foreign banks account for 30% of total banking assets, with

radically different levels throughout the area. Before the recent crisis, foreign bank penetration was extremely limited in most countries. Only recently have most of the limitations been removed. To give an example, in Indonesia any constraint on foreign bank entry has been abandoned, foreign banks' entry in Malaysia is allowed up to a 30% share, while in Thailand, a 10-year maximum period of majority ownership is allowed. A large number of foreign banks operate in Hong Kong and Singapore.

Even in Latin America liberalisation has been regarded as an instrument to provide stability to the banking systems. After long periods of protectionism, a substantial liberalisation is now in place. For instance, recent legal reforms in Mexico have removed previously existing regulations which limited foreign ownership in local banks with a relevant market share. In Brazil discrimination against foreign banks have been removed and in Argentina foreign banks now play a major role in the market.

Generally speaking, the process of foreign bank entry analysed in this section is linked to a broader process of liberalisation of trade services under the General Agreement on Trade in Services (GATS) of the WTO. This agreement includes a specific part on financial services that covers both insurance, insurance-related services, banking and other financial services. At the last round of negotiations, at the end of 1997, a new set of obligations regarding financial services was stipulated. The Fifth Protocol to GATS includes the schedules and the Most Favoured Nation (MFN) exemption list. 61 countries have accepted it and 10 others are expected to ratify it in the next period.

5.3.3. Arguments for and against foreign bank entry

The position of different countries towards foreign bank penetration differs and this is also reflected in the theoretical literature where we find a wide range of convincing arguments both for and against foreign banks.

5.3.3.1. Arguments against foreign bank entry

The main theoretical arguments against foreign bank entry are related to Government fears of losing control over the financial system and to the assumed inadequacy of local banks to face external competition. These general arguments address a number of specific issues:

- A general "infant industry argument" has been widely advocated. The main idea is that, in the presence of economies of scale and scope, domestic banks, generally smaller and thus less efficient than foreign ones, would greatly suffer for the new competitive pressure. A generalised protection, lasting for a limited period of time, would allow them to reach the minimum size to exploit economies of scale and scope, thus increasing their efficiency. Several counter arguments can be addressed. In past experience, protected banking systems have seldom been characterised by concentration processes; rationalisation and consolidation have been much more frequent in periods of liberalisation when the fear of foreign competition becomes more pressing.
- A second argument against foreign bank entry is related to Government fear of losing control over the banking system. Indeed, in most countries a large share of the banking system has been under direct or indirect government influence for long periods of time. Governments could therefore implement their policies in terms of selected lending activities (towards specific regions, segments of the market, etc). The entry of foreign banks is likely to reduce such phenomena, thus curbing the power of Governments to intervene. However, it is also likely that bank governance would be enhanced, thus allowing an efficient allocation of resources in economic terms and reducing instability problems.

- Foreign banks may also pursue different objectives and behaviour compared to local banks. In particular, it has been suggested, in some circumstances foreign banks divert funds to other less risky environments, thus depriving the economy of its internal financing resources. Convincing evidence on this issue, however, has never been provided. Moreover, it has been argued that foreign banks are generally less involved in lending activities inside the host country, thus affecting development. Argentina has experienced such a situation where, for example, foreign ownership in the banking sector is very common. In the country, foreign capital has partially stabilised the banking sector. However, banks tend to refrain from lending. Imposing minimum lending requirements to foreign banks may rectify the inefficient internal allocation of resources through this channel.
- A further argument concerns a "jeopardising" attitude of foreign banks. When they enter, they may tend to exploit all the most profitable segments and clients in the market, thus leaving domestic banks with an extremely risky business. However, a counter-argument is that foreign and domestic banks have different information advantages and should therefore obviously specialise in different businesses. In particular, foreign banks should first focus on foreign companies or large corporations, while domestic banks can have a comparative advantage over small and medium enterprises.
- A more general argument is that local banks can suffer from competitive pressures from abroad. The reduction in franchise value due to increased competition could reduce incentives to pursue prudent policies and this could affect banking system stability.

5.3.3.2. In favour of foreign banks activities

The theoretical literature has presented a number of potential advantages for the host country of foreign bank activities, which mainly emerge when a development and efficiency gap exists between the host and the foreign banking systems.

- First of all, foreign entry is likely to increase competition in the host-banking sector. In terms of pricing policies, this implies a contraction in bank interest rate spreads and commissions. Although this can certainly have a negative impact on bank profitability, it should be positive for general economic development due to the reduction in the costs of investment. We should also note that the negative impact on profitability resulting from the contraction in bank spreads could be counterbalanced by an expansion in bank intermediation activities. This can be achieved through more aggressive lending (which should, however, be accompanied by better credit risk management practices) and provision policies or through the development of new and higher quality products.
- A further advantage emerges when entry takes the form of acquisition of a domestic bank. In such a situation, the entry of foreign capital is likely to increase the efficiency and soundness of the local bank. In particular, foreign entry can increase bank capitalisation and thus its ability to react to liquidity shocks. Moreover, foreign entry should provide new practices of risk management, additional personnel skills and competencies, effective governance and, in general, more efficient practices which are likely to increase profitability and reduce costs. Such competencies could also spread to the overall banking system.
- Moreover, when there are considerable economies of scale and scope, the entry of a large foreign institution by mean of acquisition can provide local banks with the minimum amount of profit from them, thus reducing costs and increasing efficiency. This is a particularly relevant issue when considerable IT investments must be made in order to

modernise the host banking system.

- Foreign banks can also provide new services and products which require greater skills and technologies. Such a behaviour produces relevant externalities in that local banks, can try to imitate them. Depending on the development gap between the host and foreign banking system, new services and products range from traditional commission-generating ones to Internet banking.
- Foreign banks can provide better access to capital through their links to the home country and to international financial markets. Moreover, the presence of foreign capital can sustain the development of efficient capital markets.
- As Calomiris (1998) notes, opening the domestic banking sector to foreign competitors is likely to reduce the size of the local system. In case of a systemic crisis, the cost of bailing out banks would thus be lower.
- Finally, it has been argued that the entry of foreign banks can provide incentives for the widespread diffusion of good banking system practices. Parent banks with a reputation for financial probity have an incentive to apply to their foreign partners (branches or parent companies) state-of-the-art internal controls and accounting standards, even if they are not compulsory by law. As Levine (1996) notes, local banks could try to imitate the behaviour of foreign ones, following their risk management practices or regulatory and prudential behaviour. Should this be the case, the overall banking environment can become less risky, even without compulsory prudential requirements.

5.3.4. Foreign banks and the host banking system: empirical evidence and consequences on financial stability

There are a large number of studies that try to identify the effects of foreign bank entry on both the host banking system and on individual local banks. Most of them are country case studies as cross-country databases are not easily available. The envisaged effects of foreign penetration are generally positive even if some aspects (like the effects on regulatory standards and the consequences on particular categories of customers such as small and medium enterprises) are difficult to measure due to data availability.

Claessens, Demirgüç-Kunt and Huizinga (1999) study the different behaviour of foreign and domestic banks in 80 countries during the 1988-1995 period. They find different patterns in the performance of foreign banks in developing countries with respect to developed ones. In particular, they find that in developing countries foreign banks tend to have higher interest margins, profitability and tax payments compared to domestic banks, while the opposite is true in developed countries. Moreover, a larger foreign ownership share of banks is associated with a reduction in the profitability and overall expenses of domestic banks. These results suggest that there is a positive welfare effect on customers due to foreign entrance. They also find that domestic banks react immediately to foreign bank entry, without waiting for foreign banks to gain a substantial market share.

Papi and Revoltella (1999) analyse the Central and Eastern European region and, unlike other studies, discriminate among different levels of foreign participation. They find that foreign bank participation shows higher profitability compared to local banks partially due to higher loan quality. Moreover, they have a higher cost efficiency but only when foreign participation exceeds 70% of bank capital. In their study on the banking sector of eight Asian countries, Claessens and Glaessner (1999) find a negative relationship between openness to foreign financial service providers and both net margins and profitability thus suggesting an increase in competitive pressures, due to foreign entry.

As regards specific country cases, in their study on Argentina, Clarke, Cull, D'Amato and Molinari (1999) demonstrate that foreign bank activities are concentrated only in some specific sectors (like manufacturing and mortgage lending). Entry in those markets caused declining profits and increasing overheads. In other sectors, where foreign domestic banks did not enter, local banks were not affected. Steiner, Barajas and Salazar (1999) for Colombia and Denizer (1999) for Turkey find that foreign bank entrance increases competitiveness shown by lower interest margins and profitability of the overall banking system. In Colombia some costs are evident with a deterioration of loan quality and increasing administrative costs (due to technological upgrades) for domestic banks.

The process of the enlargement of the EU and the consequent liberalisation of financial systems to foreign entrance in new member countries have been analysed in various research studies. Pastor, Pérez and Quesada (1999) for Spain and Honohan (1999) for Greece and Portugal demonstrate that foreign entrance has been limited in all three countries but, especially as regards Spain, competitive pressure has encouraged domestic banks to improve their efficiency and benefit from scale economies (through merger and acquisition) with no significant increase in risk.

Generally speaking, the empirical evidence shows that the most common effects of foreign bank entry include an increase in competitive pressures but also a transfer of competencies, corporate governance and capitalisation, stronger and increased efficiency, with possible spillover effects on the overall banking system. The expected benefits of foreign entrance are therefore usually larger than associated costs, especially when the gap of efficiency in banking technology between foreign entrant and domestic banking system is high. Although those general consequences can apply to both the developed and the developing countries context, a particular caution should be posed during the liberalisation process in the latter case.

The expected positive impact of foreign bank entry suggests the possibility of using banking system liberalisation as an instrument to prevent and to rectify situations of instability in developing countries and as an instrument to enhance efficiency and competition in developed ones.

In the latter case, indeed, the liberalisation process implemented is widely increasing competition, by disrupting previously existing privileges for local banks, thus generating a more efficient provision of services and resources to the economy. Moreover, the related concentration process, which has been certainly influenced by growing competition, is likely to further incentives efficiency, by generating new and larger institutions, able to take advantage of economies of scale and scope.

In developing countries, instead, the main impact of banking system liberalisation is in terms of stability, as foreign banks seem to have a role both before and after a banking crisis. The positive effects of foreign entrance in terms of greater efficiency and capitalisation of the banking sector could make the system more resilient when face with future shocks. The positive response of the Argentinean banking sector in the face of the financial turmoil of 1997-1998 could be partially ascribed to foreign bank entrance in previous years. Moreover, in the context of a transition economy, foreign banks introduced new services, competencies and capital, thus increasing overall banking system stability. It is a fact that Hungary and Poland, the two countries with the highest share of foreign capital, have the most stable banking systems of the region.

Foreign banks can also play an important role in the restructuring of banking systems as the experience of some countries demonstrates. In Mexico and Venezuela foreign banks have

been the key players in the process of banking recapitalisation following the banking crisis. However, it should be noted that, as previously mentioned, foreign entry might increase instability since increased competition lowers the franchise value of banks and makes them assume greater risk. For this reason, the approach to banking system liberalisation should be cautious and supported by strong prudential regulations and supervision.

5.4. The role of the exchange rate regime in the prevention of financial instability

In section 5.3 we have discussed the role of liberalisation of foreign banks activities as an internal policy option with relevant effects on financial stability and efficiency. As we have said, it is a different issue from the liberalisation of the capital account. The first does not imply the second, and certainly the converse is true.

In this section we briefly discuss an important aspects related to liberalisation of the capital account and its effects on financial stability and the performance of the financial system: the choice of the exchange rate regime. Even if it is an argument related to international economic environment, the choice of exchange rate regime is mainly an internal policy decision and, for this reason, it should be included in this chapter. Moreover it is important to stress that, although the choice of a suitable exchange rate regime is a sensible issue also for developed countries, it is particularly important for developing in the context of financial stability.

As we have pointed out, the obvious way to reduce the danger of financial instability is to strengthen a bank's risk management practices and the supervisors' oversight and regulation of those practices. However, especially in many developing countries, banks have a limited capacity to manage risk and regulators have a limited capacity to supervise a bank's actions. When the capital account is partially or totally open, financial institutions have the possibility of borrowing abroad and create a mismatching between their liabilities, denominated in foreign currency, and their activities, denominated in local currency.

This mix of badly managed financial institutions, inefficient supervision and mismatching in financial institutions balance sheet due to open international markets could have perverse effects when there are large and unforeseen devaluations of the exchange rate. In this case the large increase of the value of liabilities, coupled with a constant value of activities, puts pressure on financial institutions and increases the risk of default. As we have seen in Chapter 4, this is exactly the situation occurred in Asia during the last crisis.

There are two sensible means to cope with the financial instability described above.

The first is related to opening the capital account, supervision and management practices and capitalisation of financial institutions. This implies that in countries with a weak or embryonic financial system both the pace of capital account liberalisation and the design of prudential measures become more complex. Therefore, for prudential reasons, these countries might need time to develop financial institutions, markets and instruments before being able to permanently liberalise their capital account. As part of any program of capital account liberalisation, particular attention might have to be paid to strengthening banking sectors for the simple reason that, in many developing countries, banks are the major financial intermediaries and channels for capital flows (see Chapters 4 and 6).

The second issue is related to the choice of exchange regime and it is discussed below.

One commonly-used method to reduce inflation and keep it low, is for a country to peg the value of its currency to that of a large, low inflation country. In some cases, this strategy

involves pegging the exchange rate at a fixed value to that of the other country's currency so that its inflation rate will eventually gravitate to that of the other country. In other cases, the strategy involves a crawling peg or target in which one country's currency is allowed to depreciate at a steady rate against that of another country so that its inflation rate can be higher than that of the country to which is pegged.

Although adhering to a pegged exchange rate regime can be a successful strategy for controlling inflation, we have said above that this strategy is particularly dangerous if the emerging-market country has a fragile banking system, short-duration debt contracts and a substantial amount of foreign currency debt. The countries that have suffered most from the Asian crisis have been developing countries with central banks maintaining pegged exchange rates to the US dollar.

Therefore, there is an increasing intellectual and policy consensus that "fixed but adjustable" pegs, the traditional means of "fixing" the exchange rate, do not work well for emerging market economies. Hence, they must either float to a considerable extent or convincingly fix the rate (through currency boards or dollarisation of the economy).

A flexible exchange rate regime has the advantage that movements in the exchange rate are much less non-linear than in a pegged exchange rate regime. Indeed, the daily fluctuations in the exchange rate in a flexible exchange rate regime have the advantage of making clear to private firms, banks, and governments that there is substantial risk involved in issuing liabilities in foreign currencies. Furthermore, a depreciation of the exchange rate may provide an early warning signal to policymakers that their policies may have to be adjusted to limit their potential for a financial crisis. Finally, floating permits a country to maintain a degree of national control over its monetary policy since it does not have to defend the exchange rate.

However, markets can substantially overshoot the economic fundamentals. They can push a currency far below its underlying economic value, thereby generating inflation and large debt servicing costs; or far above that level, thereby hurting the country's competitiveness and throwing its trade balance into a large deficit. Irrevocably fixed exchange rates can avoid these costs if the authorities can successfully set the rate at a sustainable level and convince the market that they can and will keep it there. Moreover, fixed rates reduce the transaction costs of international trade and investment. Finally, as mentioned earlier, a fixed rate can provide a useful anchor for price stability.

5.5. Conclusion

In conclusion, let us summarise the main policy recommendations outlined in this chapter.

- Regulating financial institutions is of the utmost importance. The incentives for banks (and other financial market participants) to recognise the risks they are taking (so-called incentive compatible financial regulation) should be reinforced; and authorities should monitor potential threats to systemic stability so as to take the necessary corrective measures (possible institutionalising a supervisory procedure of Prompt and Corrective Action).
- As regards financial safety nets, the two main features – namely deposit insurance and lending-of-last-resort facilities – must be designed in such a way as to strengthen rather than supplant private capital, monitoring and supervisory mechanisms and minimise the attendant problem of moral hazard.
- The suggestions proposed above have several consequences for systemic stability in the

Euro zone. In the field of banking capital requirements further co-ordination of accounting methods would be desirable. In addition, the effective management of the LOLR facility would require a more transparent and better-organised procedure than the existing one. Finally, the fact that the existing directive on deposit insurance is incomplete, and that the ECB has no specific role in the area of financial supervision, add more urgency to the need of defining a European banking crisis strategy.

- As for the liberalisation of banking systems, we should distinguish among developed and developing countries. In the former case, banking system liberalisation, by disrupting previously existing privileges for local banks, is likely to enhance competition end efficiency, thus generating a more efficient provision of services and resources to the economy. This is even more so, when competition stimulates a concentration process in the industry, which could allow local banks to increase in size and to profit from economies of scale and scope.
- In developing countries, foreign bank liberalisation can be an important internal instrument to enhance banking system stability, both preventing and repairing to situations of instability. Empirical evidence highlights a possible positive impact of foreign bank entry. This is particularly true when foreign banks have a higher level of skills and better management risk procedures. It should however be noted that, in these countries, foreign entry might also increase instability as the higher level of competition lowers the franchise value of banks and may induce them to undertake greater risk. For this reason attention should be paid during the process of the banking system liberalisation and it should be peered to strong prudential regulation and supervision.
- As regards the most suitable exchange rate regime for developing countries, there is increasing policy consensus that these countries must either float or fix it convincingly (through currency boards or dollarisation of the economy). “Fixed but adjustable” pegs which are the traditional way of fixing exchange rates do not work well for emerging market economies. This is particular important in order to avoid problems of financial instability arising from a mix of badly managed banks, inefficient supervision, open capital account and “fixed but adjustable” exchange rate.

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Chapter 6

Reforming the international financial architecture: objectives, problems and solutions.

6.1. Introduction

The frequency, magnitude, and global spread of financial crises in emerging economies in the last five years has revealed serious flaws in the structure and regulation of financial markets and this has prompted a wide debate regarding the reform of the "international financial architecture"[117].

Generally speaking, the term *global financial architecture* refers to the institutions, structures and policies designed to prevent and manage crises[118]or, more generally, the set of institutions, contracts, and incentives that determine how financial risks are taken and how losses and gains from taking these risks are allocated[119]. The main reasons for the widespread interest in this issue are twofold.

First, each country's economy is now much more connected to the rest of the world economy than it was two or three decades ago.

Secondly, in today's global financial system, financial disturbances can be rapidly transmitted from one place to another, through what has been termed *financial contagion*[120].

Even though the various reform proposals differ considerably in nature, objectives, and main policy recommendation, they do have some features in common[121].

[117] Chapter 1 surveyed the anatomy of these crises – Mexico in 1994, with the subsequent tequila contagion of Latin America; East Asia in 1997 and 1998, Russia in 1998 – to some extent itself affected by the Asian contagion – subsequently infecting Latin America in addition to Eastern Europe and the rest of the former Soviet Union.

[118] See Eichengreen B., 1999.

[119] See Calomiris C. 1998.

[120] There are several explanations for this contagion. One explanation is irrationality on the part of the investors. A second is rational portfolio re-balancing by international investors – if portfolio investors target a given default risk on the debt they issue, they will endogenously shrink asset risk in one country in response to capital losses or exogenous increases in asset risk in another. A third revolves around the international trade links that can transmit economic decline which is then reflected in asset prices. A fourth revolves around multiple equilibria, either through changes in speculators' views about the probability of bad equilibria or through reductions in central bank liquidity following a flight to quality.

[121] There is no shortage of proposals to reform the international financial architecture. The UK government proposes merging the IMF, the World Bank and the Bank for International settlements to create a single super-regulator of financial markets. The French propose giving additional decision-making power to the interim Committee of Finance Ministers (which oversees IMF operations) in order to enhance accountability, allow the institution to respond more quickly to crises and make it possible for Europe to counterbalance the disproportionate influence of the US Treasury. The German government has mooted the idea of target zones for exchange rates to prevent currencies from misbehaving. The Canadian government proposes providing for an IMF-sanctioned pause or payment standstill to be put into effect in case of financial difficulties. The Group of 22, an ad hoc grouping of developing and advanced industrial countries, has released three reports on the reform of international financial institutions and arrangements. The Group of Seven ministers have issued a separate declaration on how to renovate the international financial system. The IMF Managing Director has made a

- First, the existing proposals generally take into account the recent financial crises. These crises have been characterised by the prominent role of financial factors related to both domestic financial deregulation and international financial liberalisation[122].
- Second, the various proposals try to identify the appropriate policy which will alleviate instability at both the national and international levels. Specifically, they try to find measures which can be implemented by domestic governments together with international financial institutions (the IMF, the World Bank, the Bank for International Settlements) to reduce the probability of the outbreak and spread of financial crises and limit their costs[123].
- Third, the various proposals involve three main types of actors: emerging market countries, industrialised countries and international financial institutions. With respect to the emerging economies, the emphasis is usually put on improving economic policies, strengthening banking and financial systems, corporate governance, and the capacity to deal with capital flow reversals. In the case of the industrialised countries, where capital flows originate, measures are being studied to improve the regulation of, and information about the activities of international investors.
- Finally, international financial institutions are being asked to do the following: improve surveillance also of short term capital flows; encourage the adoption of banking and other international standards in emerging market countries and monitor their implementation; improve the information provided to markets and the general public; consider changes in their lending practices also by providing guarantees and possible precautionary and contingency lending[124].

Our discussion of policy reforms begins by briefly identifying the specific problems. They can be generally divided into two groups:

(1) problems that seemingly make the system fragile and lead to the outbreak of a crisis; and

(2) those strictly linked to the management and resolution phase of the crisis after its onset.

In the recent crises, the risky mix of badly managed banks and open international capital markets belongs in the first group, whereas co-ordination problems in the rescheduling of debt and the supply of contingent financial rescue packages (the IMF role) belong in the second.

With reference to the available policy options for *crisis prevention*, we discuss in some detail the proposals for limiting or taxing bank borrowing abroad, taxing short-term capital inflows, establishing controls on capital outflows and taxing foreign exchange transactions. A major effort has clearly been made to devise crisis prevention mechanisms but, since crises are still bound to occur, there is also a need to address issues related to *crisis management* – the set of institutional mechanisms necessary to overcome information asymmetries and collective-action problems that prevent crises from being rapidly resolved.

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number of speeches with titles like "Toward an Agenda for International Monetary and Financial Reform". George Soros proposes an international debt insurance corporation, Henry Kaufman an international credit-rating agency, Jeffrey Garten an international central bankruptcy court. See Eichengreen B. 1999.

[122] Both domestic and international financial liberalisation, is being driven by powerful changes in information and communications technologies which makes it difficult to restrict the financial transactions of market participants.

[123] See Swoboda A. 1999 and Calomiris C. 1999.

[124] See Fischer S., 1999.

As regards these latter instruments, much emphasis has been put on measures to "bail in the private sector": that is, ways of having the private sector share more of the burden of crisis management. Finally, we discuss the various proposals to reform how the IMF functions – this international organisation played a key role in the recent financial crisis. We maintain that the role of the international lender of last resort is best carried out by a network of central banks rather than by the IMF.

While there is clearly no international consensus regarding fundamental policy options – the most appropriate exchange rate regime, the use of taxes on capital inflows, foreign exchange transactions and controls on capital outflows – there is much more agreement on the need for more and better information, enhanced transparency, the promulgation of international financial standards of acceptable practice by private-sector bodies with expertise in these areas (International Accounting Standards Committee, IASC; and International Corporate Governance Network, ICGN), and by international committees of national regulators (IOSCO, Basle Committees). It is obvious, however, that implementing these measures involves some hard choices and the details involve particularly sensitive issues.

Section 6.2 of this chapter briefly discusses the nature of the problem and the relation between weak banking system and capital flows in emerging economies. Section 6.3 looks at the available policy options to prevent financial crises. Finally, section 6.4 discusses the possible roles of the International Monetary Fund in the crisis management phase.

6.2. Banks and capital flows: the nature of the problem

Banks represent a special problem in emerging markets: they are disproportionately relied upon for the provision of intermediation services because, in developing countries, legal and regulatory infrastructures are relatively weak. Bank-based systems are intrinsically fragile. In many emerging markets, the stage has been set for banking crises by financial liberalisation that creates the opportunity for banks to expand their risky activities without concomitant upgrading of supervision and regulation to ensure that those risks are appropriately managed, and to limit them when they are not.

These dangers can be greatly intensified by the liberalisation of international capital flows. The more integrated domestic and foreign financial markets are, the greater the sensitivity of the domestic economy and financial system to foreign interest rates will be. If foreign interest rates are the immediate trigger for banking crises, the trigger can now operate more powerfully[125]. Moreover, the higher the capital mobility, the greater the scope for banks seeking to expand their risky activities by funding themselves abroad. Foreigners will fund the risky activities of emerging-market banks more freely if they are confident that governments regard those banks as too big to fail. In the presence of government guarantees, foreigners will be attracted by the high interest rates characteristic of capital-scarce emerging markets without being deterred by the risk

A weak financial system was at the core of the Asian crises. Indeed, in the months leading to the crises, there was a large build-up of short-term foreign currency debt by banks and/or their corporate customers. Local interest rates in these Asian economies were much higher than those abroad, thereby creating a sizeable incentive for foreign borrowing. Since their currency had been relatively stable *vis-à-vis* the US dollars in the 1990s[126], currency risk did

[125] See Eichengreen B., 1999.

[126] The assumption that the exchange rate was stable profoundly affected economic behaviour in those countries, especially in the banking system, and contributed to the severity of the post-devaluation crises. In any

not seem to be high. Governments encouraged the banks to continue making loans to the corporate sector. The Asian crisis countries experienced a lending boom in the run-up to the crisis, with much of that lending going into real estate and equities. When cyclical conditions later deteriorated and interest rates rose, property prices fell and non-performing loans soared. Lending standards were also jeopardised by heavy government involvement in, and ownership of, the banking system and by a high level of related lending (that is, lending to bank owners, directors, managers, and/or their related businesses). A weak accounting, disclosure, and legal framework added to the problems. Bank capital was low relative to the risky operating environment.

In many of the crisis countries, bank supervisory agencies lacked the independence, resources, and legal authority to carry out their mandate. Since the governments had maintained a disciplined fiscal policy and had a history of providing generous support to institutions that ran into trouble, it was generally expected that, in the event of bank failure, governments would have the means and the will to bail out depositors, creditors, and shareholders.

Because there was no well-developed debt market in these economies, banks were the dominant source of intermediation. When the banking system crashed, there were few alternative sources of credit: the impact of the banking crisis on the real economy was that much greater.

6.3. Available policy solutions

The obvious way of reducing the danger posed by the mix of badly managed banks and open international markets is to *strengthen banks' risk-management practices* and *supervisors' supervision and regulation* of those practices. These issues have been covered at length in chapters 3 and 5 of the report where we discuss in greater detail the issues linked to the transparency of banking operations and the need to strengthen bank risk management practices.

However, as already mentioned, in many developing countries banks have a limited capacity for risk management, and regulators a limited capacity for supervising bank actions. In these countries, moreover, capital requirements in theory and capital requirements in practice are two very different things. Given the inadequacy of auditing and accounting standards and the political situations, written records of capital are rarely kept. This means that revising the Basle capital standards to key capital requirements as well as the riskiness of their investments is unlikely to prove effective.

In an environment with these characteristics, free access to foreign finance, short-term finance in particular, is incompatible with financial stability[127]. This creates an argument for limiting or taxing bank borrowing abroad as a third line of defence against banking system instability in countries where the first and second line of defence – bank's own risk-management practices and regulatory supervision, respectively – do not suffice. When banks

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case, the basic idea is that the Asian crisis was mainly about financial weaknesses and corporate borrowing excesses in the crisis countries and not about large exchange rate misalignments.

[127] Foreign funding gives banks gambling for redemption and otherwise seeking to take on excessive risk an additional way to lever up their bets. Governments guarantees for banks regarded as too big too fail encourage foreign investors to provide those funds. But a blow to confidence may prompt these foreign investors to flee at any time, and the short maturity of their loans provide ample opportunity for them to get out. Their rush for the exits can precipitate a crisis that brings down both the banking system and the currency. See Eichengreen B., 1999.

can circumvent these measures by having the corporations do the borrowing and pass on the proceeds to them, broader measures may be required, such as a tax to limit short term borrowing by all domestic entities (see below).

With regard to the key point – that the overwhelming majority of developing countries still have not put in place the prudent debt management[128] and liquidity arrangements needed to cope with today's volatile international capital markets – there are a number of things borrowers can do to improve their liquidity, reduce their currency exposure and control leverage.

- First, they can lengthen the maturity structure of their debt so that there is lower rollover risk.
- Second, they can build up their stock of international reserves so that there is an adequate cushion against external shocks in both goods and capital markets[129].
- Third, they can make their banks subject to rigorous liquidity and reserve requirements so that there are enough liquid assets on hand to meet sudden deposit withdrawals.
- Fourth, they can use derivatives to hedge their interest rates and currency exposure.
- Fifth, they can limit the share of new public and private debt that is in a foreign currency.
- Sixth, they can arrange contingent credit lines of credit with private banks and other commercial lenders to give them an assured source of liquidity if needed.[130]
- Finally, they can avoid using medium and long term debt with put options (that is, debt with an accelerated repayment clause which can be exercised at the option of the lender).

6.3.1. Taxes on capital inflows, capital outflows, and on foreign exchange transactions

As we maintained in the previous paragraph, when bank's own risk management practices and regulatory supervision, respectively, are not sufficiently strong, a third line of defence could consist of placing *limits on bank's foreign funding*, specifically taxes[131] or quantitative limits on bank's short term foreign-currency borrowing. However, corporations could borrow offshore in foreign currency and deposit the proceeds with domestic banks which would offer relatively attractive deposit rates since their access to external funding is restricted. The banks could then lend the proceeds to their domestic customers. If corporations hedged their exposure by making foreign-currency denominated deposits, the banks would end up with the same short-term foreign-currency exposure as when there were no limits on their capacity to fund themselves abroad. Assuming there is no change in the pressure on the authorities to provide the banks with guarantees, foreigners would have the same incentive to freely supply

[128] For the details of the recent UDROP (Universal Debt Rollover Option with a Penalty) proposal, see below.

[129] It should be emphasized that, during the recent crises, countries with very large reserves have done better in dealing with the crisis than those with small reserves (Fischer, 1999).

[130] Argentina, for example, has increased the maturity profile of its government debt to such an extent that short term debt now accounts for only 3% of total debt. In addition, it has arranged a $6.7 billion contingent credit line with 14 international banks, it holds international reserves larger than the requirements set by its currency board, and it has imposed a stiff liquidity requirement on its banks.

[131] Emerging markets, for example, could put in place price-based incentives by keying capital requirements to the riskiness of banks' funding as well as to the riskiness of their assets. The advanced industrial countries, for their part, should agree to raise the Basel risk weights on short term claims on banks from their excessively low 20% and to differentiate lending to banks in countries that meet internationally recognized accounting, regulation, and disclosure standards from lending to countries that do not.

short-term foreign currency funding because there would still be little doubt about their ability to get their money back.

An obvious solution may be a *tax on all short-term foreign capital inflows* (not just on inflows into the banking system) designed to offset distortions that result in excessive reliance on short-term foreign borrowing. Given the difficulty of distinguishing the term of investment by the type of instrument, a holding-period tax that falls disproportionately on short-term investments would work better than a tax on specific instruments[132].

Those who endorse the adoption of such a measure, maintain, first, that emerging- and mature-market economies should adopt different policies toward the capital account; and, second, that there is a crucial distinction between controls that seek to prevent international financial transactions from taking place at any price and taxes that merely seek to correct the price for discrepancies between private and social costs. The criticism that taxing capital inflows will raise the cost of short term borrowing for emerging markets, is probably mistaken because that is precisely what the measure is designed to do.

The case for *controls on capital outflows* is probably weaker. Outflow controls are less of a deterrent to excessive risk-taking by bank owners and managers. They attempt to prevent instability in the banking system not by preventing bank owners and managers from hedging their bets but by preventing depositors who are fearful of the consequences from taking flight and bringing down the banking system. They treat the symptoms rather than the cause.

As regards taxes on foreign-exchange transactions *(Tobin taxes)*, they are probably less effective than Chilean-style taxes. First, a tax on all capital inflows would apply to all financial transactions between residents and non-residents and therefore be less subject to asset substitution. Second, it would limit countries' vulnerability to the destabilising effects of sudden capital outflows not by attempting to staunch those outflows, which is unlikely to be effective, but by taxing capital at the inflow stage when the incentive for evasion is less.

Of course, a Chilean-style inflow tax will make no difference when it is residents who are fleeing the currency. But where excessive capital inflows, such as those prompted by government guarantees that permit domestic banks to hedge their bets create problems that lead ultimately to that outflow risk, there is a sound rationale for the policy. Further, as was already discussed in chapter 5, there is no obvious consensus on the optimal exchange rate arrangement.

6.3.2. The UDROP Proposal: A Small Contribution to the New International Financial Architecture (Buiter – Sibert, 1999)

The aim of the UDROP (Universal Debt Rollover Option with a Penalty) proposal is to prevent rollover crises for foreign-currency denominated debt instruments. At an international level, these liabilities have nothing analogous to the domestic lender of last resort or to domestic deposit insurance. The proposal is that all foreign currency liabilities should have a rollover option attached to them. The option would entitle the borrower to extend or roll over his performing debt at maturity for a specified period. The pricing of the option would be left to the contracting parties[133]. The scheme has the unique feature that no

[132] Chile long required all nonequity foreign capital inflows to be accompanied by a one-year, noninterest-bearing deposit, whose tax equivalent therefore declines with the duration of the investment. Chile's deposit requirement has had a larger effect on the composition of inflows than on the overall level.

[133] A number of variants make the individual borrower's ability to exercise his option contingent on the prior declaration of a state of disorderly markets, by the national central bank, the IMF or an indicator of disorderly markets.

commitment of public money is required, either by national governments or by international agencies such as the IMF. UDROP also ensures that all creditors, private and public, are automatically bailed out. The UDROP proposal is based on regulations and is general: it is automatic and mandatory for all foreign-currency debts, that is, it is exercised at the discretion of the borrower.

This stands in sharp contrast to the IMF's current practice of discretionary and politicised refinancing arrangements hammered together in an *ad hoc* manner on a case-by-case basis – an approach adopted in the recent scheme for contingent contagion credit lines (CCF) proposed by the Fund.

UDROP is market-oriented: the lenders and borrowers negotiate the terms and conditions on any foreign-currency loan and associated rollover option. It is immune to the "dynamic hedging critique", according to which a borrower can undo the effect of the mandatory rollover insurance by subsequently trading in contingent claims. This is because all foreign currency liabilities, including contingent liabilities, would be required to carry a rollover option. In the case of contingent liabilities, the amount of rollover insurance would be the magnitude of the foreign currency liability that emerges when the contingency defining the contingent claim materialises.

The UDROP proposal is only meant to address disorderly market conditions. Sudden large capital inflows or outflows can, even under orderly market conditions, create serious dislocations in the real economy. It does not help countries cope more effectively with overvalued exchange rates and overheated economies, nor does it address the ultimate cause of these common problems. The scheme is compatible with the above-mentioned proposals (Tobin or Chilean-style taxes) to restrain capital flows but its effectiveness does not depend on their success.

6.3.3. The crisis management phase: bailing out the private sector.

While crisis prevention efforts mainly require actions to be taken at the domestic level, the international community is more heavily involved in the crisis management phase. The international community has two extreme ways of responding to crises: running to the rescue of the crisis country or standing aside and letting nature run its course. Both can be avoided. This implies devising the appropriate role for the IMF (see below) and creating a more orderly way of restructuring problem debts.

In the present circumstances, restructuring problem debts is too difficult and drawn out. The problem is that there is neither an international bankruptcy code, nor, in many cases, good national bankruptcy laws, and no private-sector equivalent of the Paris and London Clubs (which handle rescheduling officially-held public debts).

As we move from the '80s to the '90s, a noteworthy feature in the composition of private capital flows to emerging economies is the notable decrease in syndicated bank loans and the increase in other types of flows – mainly bonds, in the case of gross financing flows, and foreign direct investments and portfolios flows (equities and bonds) in the case of net flows. However, the increasing importance of bonds and securitisation introduces a new problem: compared to syndicated bank loans, sovereign bond contracts are rescheduling-unfriendly. More specifically, unanimous consent is usually required to restructure them. Individual bondholders can sue the issuer, successful lawsuits can trigger both cross-default clauses on other securities and accelerated repayment schedules, and there is no requirement that proceeds recovered in litigation with other bondholders be shared. Moreover, ownership of bonds tends to be quite common and – unlike bank loans where there are bank advisory

committees – there are no standing steering committees to handle negotiations from the creditor side. This can make it costly and time consuming to organise creditors on the spot. On top of this, financial regulators can exert less leverage on bondholders than they can on their banks.

Faced with all these obstacles, the debtor may just see rescheduling as too burdensome an undertaking to embark upon – even if such rescheduling would benefit the majority of debtors and creditors.

The solution to this problem could be to alter the terms of bond contracts and include "collective action clauses" (i.e. majority-voting, sharing, and non-acceleration clauses) that would make it harder and less profitable for a few rogue creditors to block a rescheduling and to organise *standing steering committees*[134] to conduct future negotiations. One of the objections comes from private creditors who have opposed mandatory inclusion of rescheduling clauses in bond contracts as making default too easy. Some others argue that, by making it easier to wriggle out of debt contracts, such provisions would increase borrowing costs. However, if moral hazard and other market imperfections cause governments to rely excessively on foreign borrowing, this is not an undesirable thing[135].

The fact that no progress has been made suggests that there are significant obstacles to market-driven reform. One is the adverse signalling effect: if only some issuers include qualified-majority-voting clauses in their loan agreements, creditors may suspect that those debtors anticipate having to restructure in the near future. Without the introduction of actual legislation and regulations in the creditor countries, progress on this front is unlikely. Another way of pushing ahead would be the IMF (see below).

Short-term credits extended by one bank to another are a more difficult case. Because interbank loans are not governed by formal contracts, altering contractual provisions cannot ease renegotiations. Moreover, since banks are the key to the stability of a country's payment and credit system, governments are reluctant to contemplate treatment of these claim that might threaten their provisions. These factors make it extremely difficult to write down foreign claims on domestic banks.

As regards the creation of standing committees of creditors, the community of investors has been reluctant to act. It fears that standing committees would make it too easy for debtors to initiate restructuring negotiations and too tempting for them to suspend debt payments. But the interest of the international policy community, which seeks to create a viable alternative to large-scale bailouts of crisis countries, is clearly different.

6.4. What Role for the IMF?

The IMF plays a central role in the architecture debate for a number of reasons, including its almost universal membership and its mandate to safeguard the soundness and stability of the

[134] Restructuring negotiations are most difficult when information is least complete. Establishing a standing committee of representatives of the various classes of creditors – bondholders, banks, hedge funds – would open lines of communication and help overcome information problems. A standing creditors' committee would thus reduce transaction costs in times of crisis.

[135] In practice, however, there are grounds to question whether borrowing costs will in fact rise. Majority voting, sharing, and nonacceleration may make it easier to renegotiate defaulted debts, but if this permits a long deadlock to be avoided and renders the majority of investors better off, there is no reason why they should shun bonds with these features. Small bondholders, who lack the resources to sue, would be rendered better off if such clauses averted a long period when interest was not paid and bond prices were depressed while the government and maverick creditors fought their war of attrition.

international monetary system[136]. If one considers the main issues in the current architecture debate – transparency and accountability, strengthening financial systems, engaging the private sector in managing and resolving economic crises – the IMF is actively involved in all three.

The IMF, however, is not only an actor in this debate but is itself an issue in the reform of the global financial architecture. This means that the IMF is somehow part of the problem.

6.4.1. The evolving role of the IMF

The IMF was originally designed to promote co-operation among countries in the conduct of monetary and exchange rate policy. In July 1944, 300 representatives of 44 nations met at Bretton Woods and set up a system of fixed exchange rate (the Bretton Woods System) that could be altered only by mutual consent with the approval of the IMF. The system collapsed in 1973 when the United States chose to increase its money supply growth to achieve some domestic objectives. The increase in US inflation conflicted with its commitment to maintain the price of the dollar pegged to gold. Unwilling to follow deflationary policies, the United States let the system collapse. After 1973 countries were at liberty to let their exchange rate fluctuate without IMF consent.

With the collapse of the Bretton Woods system, the IMF changed its mission. During the late 1970s, Latin American countries greatly increased their indebtedness to the rest of the world. The IMF played an important role in the subsequent debt crises, by co-ordinating the restructuring of government debts. The break up of the Soviet Union in the early 90s, and the need to finance the transition to a market economy gave further impetus to the IMF.

More recently, the IMF has taken on a new role. In 1994, the Mexican government had difficulty rolling over its short-term debt, raising the possibility that the government would default. The IMF and the U.S. government solved the problem by providing substantial funding.

Several authors, including Friedman (1998) and Schwartz (1998), argue that this funding package was at better rates than the market would provide and hence was a *bailout.* They argue that this bailout made lenders believe that similar bailouts would occur in other developing countries when a crisis emerged. Therefore, the bailout in Mexico reduced the incentives of lenders to probe into the conditions of other countries before making similar new loans. In addition, the prospect of similar bailouts gave governments less of an incentive to pursue painful but responsible policies needed to convince lenders of their creditworthiness.

In this regard, IMF bailout policies can increase *moral hazard* of both governments and lenders. Consequently, the IMF may end up destabilising international financial markets. During the recent Asian financial crises, which we analysed in section 6.3, the IMF helped organise substantial loans to these countries.

6.4.2. International lender of last resort, or networks of Central Banks?

Both critics and defenders of the IMF argue that the recent activities of the IMF resemble those of an international lender of last resort. Fischer argues that there are three problems that the IMF should solve.

[136] In this context, the IMF conducts an annual economic policy consultation and surveillance with every one of its member governments. In these annual reviews, known as Article IV consultations, the IMF engages in a broad policy dialogue with member governments, trying to address and anticipate specific problems. The member governments are obliged to accept this surveillance.

- First, it should make sure that defaults by developing country governments do not have contagion effects on other countries and thus lead to world-wide financial crises.
- Second, it should prevent financial panics in developing countries even when they do not threaten to destabilise international financial markets.
- Third, it should encourage and enforce general policy reform even if it is not directly connected to the countries' financial systems.

It is with reference to the first goal – the need to prevent contagion in the financial markets – that the IMF acts as an international lender of last resort. The argument in favour of such a role goes as follows: since there is a clear need for a domestic lender of last resort, by analogy, everyone should accept the need for a world lender of last resort.

In general, the case for a domestic lender of last resort stems from the extreme mismatch between the maturity and risk characteristics of assets and liabilities common to the banking system. The governments of emerging countries rely heavily on short-term debt especially those experiencing periods of economic turmoil. Since the assets of governments are mostly claims on future tax revenues, such governments face a mismatch between assets and liabilities. In such a situation panic is possible. If the government creditors are unwilling to roll over their debt, then the government is faced with a liquidity crisis and is often forced into default. The difficulty of co-ordinating creditors can lead to flight from a country's debt.

Creditor panic can clearly justify the intervention of an international body to enforce regulations that help solve the problem. These panics, however, do not justify lending at subsidised rates to troubled countries[137]. First, such panics can occur only if the government chooses to rely heavily on short-term financing. Most developed countries stagger their debt maturity so that at any given tome only a small fraction of the overall debts has to be rolled over. Therefore, developed countries are relatively immune from creditor panics. Second, even if financial panics spread in a contagious way from one nation to another thorough some mechanism other than creditor panic, central banks have the ability and the willingness to expand world liquidity to prevent severe damage to the world economy.

The role of a liquidity provider for the world as a whole can be played by the joint intervention of the central banks of the major powers. These interventions do not require that funds be directed to a particular country. All that is needed is that liquid funds be readily available in the marketplace so that the market can channel them in the best possible way. In this respect, the interest rate reductions taken in the summer and fall of 1998 by the Federal Reserve System and most European central banks was a co-ordinated response by major economic powers to curb concerns about international financial panics.

IMF lending may therefore be unnecessary to stem world-wide financial crises. Since it is directed to individual borrowers, it may be harmful because of the moral hazard problems that such lending creates. The key role of the IMF should be to advise central banks about the state of international financial markets but it is the central banks of the major powers that should act as the international lender of last resort.

6.4.3 Networks of central banks and the European central bank.

The fact that single countries can avoid the liquidity mismatch typical of domestic banking institutions and the potential moral hazard problems linked to the large bailouts administered by the IMF implies that the role of the international lender of last resort should probably be left to a networks of central banks.

[137] Chari V. and Kehoe P. 1999.

Obviously, the European Central Bank should be a key international player in the provision of liquidity to ailing countries. However, it is not clear whether the current institutional setting in Europe and the current operation of the ECB are suited to such a role. Managing rescue packages requires prompt and immediate action. When a crisis breaks out, who should be responsible for putting together the necessary funds? Should it be the sole responsibility of the President; or should it require a formal meeting of the Executive Board? Moreover, since the management of a bailout requires the approval of each member country, it might be necessary to have a full meeting of the Governing Council.

Our analysis suggests that the existing institutional setting in Europe may require specific new guidelines geared to managing international crises.

6.5. Conclusions: issues for discussion among European policy makers

This chapter has surveyed the current debate regarding the reform of the global financial architecture and the institutions, structures and policies used to prevent and manage crises. After discussing the nature of the problem, the chapter studied the relationship between the weak banking system and capital flows in emerging economies and surveyed the available policy options to prevent financial crises and the possible roles for reforming the International Monetary Fund, one of the key players during the management phase of the crisis.

Our discussion of the global financial architecture suggests that the large bailouts administered by the IMF suffer from serious problems of moral hazard and that the role of international lender of last resort should probably be left to a network of central banks. Even though the European Central Bank should obviously be a key international player in providing liquidity to ailing countries, it is not clear whether the current European institutional setting and the formal institutional mandate of the ECB are suited to such a role. This is a serious problem and will certainly require a general discussion at the European level. Indeed, in the months ahead, we expect European policy makers to debate whether the existing Treaty will allow the ECB to play the necessary role in the management of the future international financial architecture.

The question as to whether European institutions are suited to deal with issues linked to international capital flows has been a common theme throughout this report. In particular, chapter 5 maintained that at the EU level there are sensitive issues of prudential supervision. Indeed, at this level, supervisory authorities are separate and organised differently and the EU Treaty provisions on the prudential role of the ESCB lack clarity and precision. Furthermore, we have also maintained that without substantial forced uniformity of the supervisory criteria and a clear indication of prudential supervisory competence and responsibilities apportioned between the national authorities and a centralised supervisor, the financial system of the Euro area will become more fragile if it assumes a larger role in crisis management and LOLR. Even on these issues, we would welcome a serious debate among European policymakers in the months ahead.

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Annexes

Annexes to Chapter 1

Table 1.1: Country Classification

ADVANCED ECONOMIES	EMERGING ECONOMIES		
	Developing Countries		**Countries in transition**
Major industrial countries	***Africa***		***Central and Eastern Europe***
Canada	Sub-Sahara	Marshalla Islands	Albania
France	Angola	Micronesia, Federated States of	Belarus
Germany	Benin	Myanmar	Bosnia and Herzegovina
Italy	Botswana	Nepal	Bulgaria
Japan	Burkina Faso	Pakistan	Croatia
United Kingdom	Burundi	Papua New Guinea	Czec Republic
United States	Cameroon	Philippines	Estonia
Other advanced economies	Cape Verde	Samoa	Hungary
Australia	Central African Republic	Solomon Islands	Latvia
Austria	Chad	Sri Lanka	Lithuania
Belgium	Comoros	Thailand	Macedonia
Denmark	Congo, Democratic Republic of	Tonga	Moldova
Finland	Congo, Republic of	Vanuatu	Poland
Greece	Côte d'Ivoire	Vietnam	Romania
Hong Kong	Djibouti		Slovak Republic
Iceland	Equatorial Guinea	***Middle East and Europe***	Ukraine
Ireland	Eritrea	Bahrain	Yugoslavia, Federal Republic of
Israel	Ethiopia	Cyprus	Russia
Korea	Gabon	Egypt	
Luxembourg	Gambia	Iran	***Central Asia***
Netherlands	Ghana	Iraq	Armenia
New Zeland	Guinea	Jordan	Azerbaijan Belarus
Portugal	Guinea-Bissau	Kuwait	Georgia
Portugal	Kenya	Lebanon	Kazakhstan
Singapore	Lesotho	Libya	Kyrgyz Republic
Spain	Liberia	Malta	Mongolia
Sweden	Madagascar	Oman	Tajikistan
Switzerland	Malawi	Qatar	Turkmenistan
Taiwan Province of China	Mali	Saudi Arabia	Uzbekistan
	Mauritania	Syrian Arab Republic	
	Mauritius	Turkey	
	Mozambique, Republic of	United Arab Emirates	
	Namibia	Yemen, Republic of	
	Niger		
	Nigeria	***Western Emisphere***	
	Rwanda	Antigua and Barbuda	
	Sao Tomè and Prìncipe	Argentina	
	Senegal	Bahamas	
	Seychelles	Barbados	
	Sierra Leone	Belize	
	Somalia	Bolivia	
	South Africa	Brazil	
	Sudan	Chile	
	Swaziland	Colombia	
	Tanzania	Costa Rica	
	Togo	Dominica	
	Uganda	Dominican Republic	
	Zambia	Equador	
	Zimbabwe	El Salvador	
	North Africa	Grenada	
	Algeria	Guatemala	
	Morocco	Guyana	
	Tunisia	Haiti	
		Honduras	
	Asia	Jamaica	
	Afghanistan	Mexico	
	Bangladesh	Netherlands Antilles	
	Bhutan	Nicaragua	
	Brunei	Panama	
	Cambodia	Paraguay	
	China	Perù	
	Fiji	St. Kitts and Nevis	
	India	St. Lucia	
	Indonesia	St. Vincent and the Grenadines	
	Kiribati	Suriname	
	Laos	Trinidad and Tobago	
	Malaysia	Uruguay	
	Maldives	Venezuela	

Source: adapted from IMF, *World Economic Outlook* , 1999.

Table 1.2.: Different "Emerging Economies" Definitions

IMF	World Bank	BIS	IIF
Developing economies	***Developing economies***	***Developing countries***	***Emerging Markets***
Africa	East Asia and Pacific	North Africa and Middle East	Latin America
- Sub-Sahara	Europe and Central Asia	Sub-Saharan Africa	Asia/Pacific
- North Africa	Latin America and the Caribbean	Latin America	Africa/Middle East
Asia	Middle East and North Africa	Asia	Europe
Middle East and Europe	South Asia		
Western Emisphere	Sub-Saharan Africa		
Countries in transition		***Countries in transition***	
Central and Eastern Europe		Eastern Europe	
Russia			
Central Asia			

Sources: adapted from IMF, World Bank, BIS and IIF Statistics.

Table 1.3: Macroeconomic Data for Advanced Economies

Variable	1995	1996	1997	1998	*Projections** 1999	2000
Real GDP *(annual % change)*	2,6	3,2	3,2	2,2	2,0	2,3
Real per capita GDP *(annual % change)*	1,9	2,5	2,6	1,7	1,5	1,8
Consumer Prices *(annual % change)*	2,5	2,4	2,1	1,6	1,4	1,7
Unemployment rates *(% of labour force)*	7,2	7,2	7,0	6,9	6,9	6,9
Short-term interest rates[1] *(%)*	5,1	4,1	4,0	4,0	3,9 [2]	n.a.
Long-term interest rates[1] *(%)*	6,8	6,1	5,4	4,5	4,6 [2]	n.a.
Central Government Fiscal Balances *(% of GDP)*	-3,3	-2,6	-1,3	-1,1	-1,2	-0,9
Broad Money Aggregates[3] *(annual % change)*	4,4	4,9	5,0	6,7	n.a.	n.a.
Imports *(annual % change)*	9,1	6,5	9,1	4,7	5,0	5,7
Exports *(annual % change)*	9,1	6,3	10,3	3,2	2,8	5,6
Terms of trade *(annual % change)*	-	-0,4	-0,6	1,2	0,8	-
Current Account balances *(US$ billions)*	50,1	32,6	69,9	14,3	-39,9	-40,6
- trade balance	*93,6*	*64,2*	*71,4*	*65,0*	*-4,2*	*-24,5*
- balance on services	*57,8*	*66,1*	*86,5*	*73,1*	*75,0*	*94,7*
- net income	*4,0*	*9,4*	*9,7*	*-17,9*	-	*4,6*
- net current transfer	*-105,3*	*-107,1*	*-97,6*	*-105,9*	*-110,7*	*-115,4*

Sources: IMF, *World Economic Outlook*, 1996, 1997, 1998, 1999; The World Bank, *World Development Indicators*, 1999; BIS, *BIS Quarterly Review*, August 1999; authors' calculations.

* IMF estimates.

[1] Country group composites for interest rates are arithmetic averages weighted by GDP converted to U.S. dollars at market exchange rates (averaged over the preceding three years) as a share of the country group GDP.

[2] March 1999 estimate.

[3] For almost all countries M2, defined as M1 plus quasi-money (private term deposits and other notice deposits).

Table 1.4: Real GDP Breakdown for Advanced Economies

(annual % change)	**1995**	**1996**	**1997**	**1998**	*Projections** **1999**	**2000**
United States	2,3	3,4	3,9	3,9	3,3	2,2
Japan	1,5	5,0	1,4	-2,8	-1,4	0,3
Germany	1,2	1,3	2,2	2,8	1,5	2,8
France	2,1	1,6	2,3	3,1	2,2	2,9
Italy	2,9	0,9	1,5	1,4	1,5	2,4
United Kingdom	2,8	2,6	3,5	2,1	0,7	2,1
Canada	2,6	1,2	3,8	3,0	2,6	2,5
Total G-7	2,1	3,0	3,0	2,2	1,9	2,0
Other advanced economies	4,4	3,8	4,2	2,1	2,5	3,4
Total advanced economies	**2,6**	**3,2**	**3,2**	**2,2**	**2,0**	**2,3**

Sources: IMF, *World Economic Outlook*, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

Table 1.5: Consumer Prices Breakdown for Advanced Economies

(annual % change)	**1995**	**1996**	**1997**	**1998**	*Projections** **1999**	**2000**
United States	2,8	2,9	2,3	1,6	2,1	2,4
Japan	-0,1	0,1	1,7	0,6	-0,2	-0,2
Germany	1,8	1,5	1,8	0,9	0,6	1,0
France	1,8	2,0	1,2	0,7	0,5	1,1
Italy	5,2	3,9	1,7	1,8	1,3	1,5
United Kingdom	2,8	2,9	2,8	2,7	2,7	2,4
Canada	2,2	1,6	1,4	1,0	1,2	1,6
Total G-7	2,3	2,2	2,0	1,3	1,4	1,7
Other advanced economies	3,7	3,2	2,5	2,5	1,5	1,7
Total advanced economies	**2,5**	**2,4**	**2,1**	**1,6**	**1,4**	**1,7**

Sources: IMF, *World Economic Outlook*, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

Table 1.6: Foreign Trade Breakdown for Advanced Economies

(annual % change)	1995	1996	1997	1998	*Projections** 1999	2000
Export volume						
United States	11,3	8,5	12,8	1,5	3,6	6,9
Japan	5,4	6,3	11,6	-2,3	-2,3	0,8
Germany	6,6	5,1	11,1	5,4	2,4	6,9
France	6,3	5,2	12,6	6,1	2,8	5,9
Italy	11,6	1,6	5,0	1,3	1,3	5,7
United Kingdom	9,5	7,5	8,7	3,0	2,0	4,1
Canada	8,8	5,9	8,0	8,1	7,2	4,4
Total G-7	8,6	6,2	10,7	2,8	2,3	5,4
Other advanced economies	9,9	6,6	9,8	3,9	3,6	6
Total advanced economies	**9,1**	**6,3**	**10,3**	**3,2**	**2,8**	**5,6**
Import volume						
United States	8,8	9,2	13,9	10,6	9,3	6,0
Japan	14,2	11,9	0,5	-7,7	-2,5	1,5
Germany	7,3	2,9	8,1	6,6	4,3	6,8
France	5,1	3,0	8,1	7,8	2,9	5,6
Italy	9,6	-1,1	9,9	6,1	2,1	6,1
United Kingdom	5,5	9,1	9,5	8,4	5,3	4,6
Canada	6,4	5,4	13,3	6,4	6,0	4,0
Total G-7	8,4	6,6	9,5	6,3	5,2	5,3
Other advanced economies	10,4	6,2	8,5	1,9	4,8	6,3
Total advanced economies	**9,1**	**6,5**	**9,1**	**4,7**	**5,0**	**5,7**
Terms of trade						
United States	-0,6	0,5	1,9	3,0	0,7	1,3
Japan	-	-6,4	-4,5	2,5	4,8	-3,4
Germany	1,6	-0,7	-2,0	1,9	0,4	-0,3
France	-1,3	-1,5	0,4	0,2	0,1	-0,1
Italy	-1,4	2,6	0,1	2,4	0,7	-0,1
United Kingdom	-2,5	1,0	2,6	1,7	0,7	-0,2
Canada	2,9	1,8	-1,3	-3,1	-0,3	0,5
Total G-7	-	-0,7	-0,4	1,8	1,2	-
Other advanced economies	-0,1	-	-0,9	0,2	0,1	-
Total advanced economies	**-**	**-0,4**	**-0,6**	**1,2**	**0,8**	**-**

Sources: IMF, *World Economic Outlook*, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

Table 1.7: Current Account Balances Breakdown for Advanced Economies

(US$ billions)	**1995**	**1996**	**1997**	**1998**	*Projections** **1999**	**2000**
United States	-115,3	-134,9	-155,2	-233,4	-309,9	-308,3
Japan	114,4	65,8	94,1	121,6	148,2	139,3
Germany	-22,6	-13,8	-4,0	-9,0	-1,6	0,5
France	10,9	20,5	39,4	38,7	41,7	45,9
Italy	25,1	40,5	33,7	27,3	28,1	29,5
United Kingdom	-5,8	-2,9	7,3	-11,0	-16,3	-20,1
Canada	-4,7	3,3	-9,3	-12,4	-96,0	-6,6
Total G-7	-0,9	-21,4	6,1	-78,2	-119,4	-120,0
Other advanced economies	51	54	63,8	92,5	79,5	79,3
Total advanced economies	**50,1**	**32,6**	**69,9**	**14,3**	**-39,9**	**-40,6**

Sources: IMF, *World Economic Outlook*, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

Table 1.8: Macroeconomic Data for Emerging Economies: Developing Countries

Variable	1995	1996	1997	1998	*Projections** 1999	2000
Real GDP *(annual % change)*	6,1	6,5	5,7	3,3	3,1	4,9
Real per capita GDP *(annual % change)*	4,3	4,8	4,1	1,6	1,5	3,3
Consumer Prices *(annual % change)*	22,2	14,3	9,4	10,4	8,8	7,5
Central Government Fiscal Balances *(% of GDP)*	-2,4	-2,2	-2,3	-3,6	-3,7	-2,5
Broad Money Aggregates[1] *(annual % change)*	24,5	22,6	18,5	17,9	15,1	15,2
Imports *(annual % change)*	11,5	8,2	11,2	-0,7	2,6	6,8
Exports *(annual % change)*	10,5	9,2	11,4	2,2	4,6	5,5
Terms of trade *(annual % change)*	2,8	-0,5	-1,3	-3,8	1,1	1,6
Current Account balances *(US$ billions)*	-95,1	-73,0	-69,1	-92,5	-70,5	-83,4
- trade balance	*-10,9*	*7,9*	*19,9*	*4,4*	*20,5*	*18,6*
- balance on services	*-45,7*	*-47,0*	*-52,6*	*-46,9*	*-41,6*	*-48,7*
- net income	*-70,2*	*-71,2*	*-77,6*	*-90,8*	*-90,5*	*-98,2*
- net current transfer	*31,6*	*37,3*	*41,3*	*41,2*	*41,3*	*42,7*
External debt *(% of exports of goods and services)*	163,8	151,7	144,8	160,9	158,1	151,2
Debt service payments[2] *(% of exports of goods and services)*	22,0	21,7	21,4	24,0	24,7	23

Sources: IMF, *World Economic Outlook*, 1996, 1997, 1998, 1999; The World Bank, *World Development Indicators*, 1999; BIS, *BIS Quarterly Review*, August 1999; authors' calculations.

* IMF estimates.

[1] For almost all countries M2, defined as M1 plus quasi-money (private term deposits and other notice deposits).

[2] Debt-service payments refer to actual payments of interest on total debt plus actual amortization payments on long-term debt. The projections incorporate the impact of exceptional financing items.

Table 1.9: Real GDP Breakdown for Developing Countries

(annual % change)	**1995**	**1996**	**1997**	**1998**	*Projections** **1999**	**2000**
Africa	3,1	5,8	3,1	3,4	3,2	5,1
Asia	9,1	8,2	6,6	3,8	4,7	5,7
Middle East and Europe	3,7	4,7	4,4	2,9	2,0	3,3
Western Hemisphere	1,3	3,6	5,2	2,3	-0,5	3,5
Total developing countries	**6,1**	**6,5**	**5,7**	**3,3**	**3,1**	**4,9**

Sources: IMF, *World Economic Outlook*, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

Table 1.10: Consumer Prices Breakdown for Developing Countries

(annual % change)	**1995**	**1996**	**1997**	**1998**	*Projections** **1999**	**2000**
Africa	33,2	25,9	11,1	8,6	8,6	6,6
Asia	12,8	8,3	4,8	8,0	4,7	4,5
Middle East and Europe	36,0	24,7	23,1	23,8	19,7	19,4
Western Hemisphere	35,9	20,8	13,9	10,5	14,6	9,9
Total developing countries	**22,2**	**14,3**	**9,4**	**10,4**	**8,8**	**7,5**

Sources: IMF, *World Economic Outlook*, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

Table 1.11: Foreign Trade Breakdown for Developing Countries

(annual % change)	1995	1996	1997	1998	*Projections** 1999	2000
Trade in goods and services						
Export volume	10,5	9,2	11,4	2,2	4,6	5,5
Import volume	11,5	8,2	11,2	-0,7	2,6	6,8
Terms of trade	2,8	-0,5	-1,3	-3,8	1,1	1,6
Trade in goods						
Export volume						
Africa	9,3	8,7	5,7	-0,7	4,0	6,9
- Sub-Sahara	*9,3*	*10,8*	*4,9*	*-1,6*	*2,9*	*7,5*
Asia	15,5	8,2	14,5	3,0	3,8	4,7
- Excluding China and India	*13,9*	*3,6*	*9,9*	*3,7*	*10,1*	*6,4*
Middle East and Europe	6,4	8,8	5,4	-1,9	3,2	4,8
Western Hemisphere	13,7	10,2	12,3	2,8	6,5	7,1
Total developing countries	**12,4**	**8,8**	**11,1**	**1,5**	**4,3**	**5,5**
Import volume						
Africa	12,3	4,6	5,9	2,9	2,9	5,7
- Sub-Sahara	*13,2*	*8,7*	*7,2*	*1,1*	*2,3*	*5,8*
Asia	16,3	9,2	3,7	-11,6	6,0	8,8
- Excluding China and India	*17,9*	*4,9*	*1,3*	*-21,0*	*9,7*	*11,4*
Middle East and Europe	7,4	9,0	12,5	5,1	3,2	0,5
Western Hemisphere	11,3	6,4	12,2	3,6	-1,3	4,5
Total developing countries	**12,9**	**8,0**	**7,5**	**-3,0**	**3,1**	**6,5**
Terms of trade						
Africa	1,4	5,9	-0,2	-9,9	-3,3	4,0
- Sub-Sahara	*1,3*	*5,0*	*-0,6*	*-9,1*	*-2,5*	*3,6*
Asia	0,4	0,3	-1,0	-4,8	0,8	0,1
- Excluding China and India	*-0,3*	*0,5*	*-2,1*	*-8,4*	*1,2*	*0,3*
Middle East and Europe	-3,2	5,6	1,0	-9,4	-1,3	3,0
Western Hemisphere	6,3	1,4	-1,6	-5,5	-1,2	2,1
Total developing countries	**1,2**	**2,2**	**-0,7**	**-6,4**	**-0,6**	**1,5**

Sources: IMF, *World Economic Outlook*, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

Table 1.12: Current Account Balances Breakdown for Developing Countries

(US$ billions)	**1995**	**1996**	**1997**	**1998**	*Projections** **1999**	**2000**
Africa	-16,4	-5,7	-6,1	-18,1	-19,7	-17,4
- Sub-Sahara	*-12,1*	*-6,4*	*-8,8*	*-16,2*	*-17,2*	*-15,9*
Asia	-42,5	-38,9	-4,0	35,5	26,4	8,7
- Excluding China and India	*-38,9*	*-41,3*	*-27,8*	*19,1*	*16,7*	*6,6*
Middle East and Europe	-0,4	10,5	6,1	-20,0	-16,5	-12,9
Western Hemisphere	-35,9	-38,9	-65,1	-89,9	-60,7	-61,7
Total developing countries	**-95,1**	**-73,0**	**-69,1**	**-92,5**	**-70,5**	**-83,4**

Sources: IMF, *World Economic Outlook*, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

Table 1.13: External Debt and Debt-Service Breakdowns for Developing Countries

(% of exports of goods and services)	**1995**	**1996**	**1997**	**1998**	*Projections** **1999**	**2000**
External debt						
Africa	250,4	225,1	211,5	238,1	232,4	215,6
Asia	124,4	118,8	115,1	119,5	120,0	116,1
Middle East and Europe	101,1	88,2	84,6	105,0	106,0	100,4
Western Hemisphere	248,5	232,8	221,1	250,0	236,9	224,4
Total developing countries	**163,8**	**151,7**	**144,8**	**160,9**	**158,1**	**151,2**
Debt-service payments						
Africa	26,6	22,6	21,3	24,0	26,7	23,3
Asia	16,3	16,1	13,6	16,3	15,7	15,1
Middle East and Europe	10,9	10,4	8,9	14,5	13,3	112,0
Western Hemisphere	39,8	41,6	46,4	45,7	48,6	45,5
Total developing countries	**22,0**	**21,7**	**21,4**	**24,0**	**24,7**	**23,0**

Sources: IMF, *World Economic Outlook*, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

Table 1.14: Macroeconomic Data for Emerging Economies: Countries in Transition

Variable	1995	1996	1997	1998	*Projections** 1999	2000
Real GDP *(annual % change)*	-1,1	-0,3	2,2	-0,2	-0,9	2,5
Real per capita GDP *(annual % change)*	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Consumer Prices *(annual % change)*	126,9	40,6	28,2	20,8	40,9	12,4
Central Government Fiscal Balances *(% of GDP)*	-4,1	-4,1	-4,5	-3,8	-2,8	-1,8
Broad Money Aggregates[1] *(annual % change)*	72,0	31,1	27,2	15,4	24,7	19,5
Imports *(annual % change)*	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Exports *(annual % change)*	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Terms of trade *(annual % change)*	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Current Account balances *(US$ billions)*	-2,4	-16,2	-29,3	-25,8	-13,4	-10,7
- trade balance	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*
- balance on services	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*
- net income	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*
- net current transfer	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*
External debt *(% of exports of goods and services)*	102,7	97,8	98,1	108,7	107,6	102,6
Debt service payments[2] *(% of exports of goods and services)*	11,9	11,0	10,3	15,9	15,6	16,3

Sources: IMF, *World Economic Outlook*, 1996, 1997, 1998, 1999; The World Bank, *World*

* IMF estimates.

[1] For almost all countries M2, defined as M1 plus quasi-money (private term deposits and other notice deposits).

[2] Debt-service payments refer to actual payments of interest on total debt plus actual amortization payments on long-term

Table 1.15: Real GDP Breakdown for Countries in Transition

(annual % change)	**1995**	**1996**	**1997**	**1998**	*Projections** **1999**	**2000**
Central and Eastern Europe	1,6	1,6	3,1	2,4	2,0	3,7
- Excluding Belarus and Ukraine	*5,6*	*3,7*	*3,5*	*2,6*	*3,0*	*4,6*
Russia	-4,1	-3,5	0,8	-4,8	-7,0	-
Transcaucasus and Central Asia	-4,4	1,6	2,4	2,0	1,8	3,1
Total countries in transition	**-1,1**	**-0,3**	**2,2**	**-0,2**	**-0,9**	**2,5**

Sources: IMF, *World Economic Outlook*, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

Table 1.16: Consumer Prices Breakdown for Countries in Transition

(annual % change)	**1995**	**1996**	**1997**	**1998**	*Projections** **1999**	**2000**
Central and Eastern Europe	74,5	32,0	36,8	17,7	19,9	8,9
- Excluding Belarus and Ukraine	*25,0*	*23,2*	*38,8*	*15,1*	*9,7*	*7,4*
Russia	190,1	47,8	14,7	27,7	100,5	20,2
Transcaucasus and Central Asia	250,2	64,1	36,5	15,3	13,5	9,2
Total countries in transition	**126,9**	**40,6**	**28,2**	**20,8**	**40,9**	**12,4**

Sources: IMF, *World Economic Outlook*, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

Table 1.17: Current Account Balances Breakdown for Countries in Transition

(US$ billions)	**1995**	**1996**	**1997**	**1998**	*Projections** **1999**	**2000**
Central and Eastern Europe	-6,1	-16,6	-19,7	-21,8	-23,1	-20,8
- Excluding Belarus and Ukraine	*-4,1*	*-14,9*	*-17,5*	*-20,1*	*-21,7*	*-19,5*
Russia	5,2	4,3	-5,7	0,8	14,0	14,6
Transcaucasus and Central Asia	-1,6	-3,9	-4,0	-4,8	-4,3	-4,5
Total countries in transition	**-2,4**	**-16,2**	**-29,3**	**-25,8**	**-13,4**	**-10,7**

Sources: IMF, *World Economic Outlook*, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

Table 1.18: External Debt and Debt-Service Breakdowns for Countries in Transition

(% of exports of goods and services)	**1995**	**1996**	**1997**	**1998**	*Projections** **1999**	**2000**
External debt						
Central and Eastern Europe	91,6	86,5	85,6	87,5	89,0	86,2
- Excluding Belarus and Ukraine	*98,2*	*95,7*	*91,9*	*93,5*	*94,0*	*90,3*
Russia	126,9	120,8	124,0	157,4	153,3	143,6
Transcaucasus and Central Asia	61,9	67,0	76,1	90,8	93,8	94,3
Total countries in transition	**102,7**	**97,8**	**98,1**	**108,7**	**107,6**	**102,6**
Debt-service payments						
Central and Eastern Europe	15,6	13,9	13,1	15,1	15,2	16,5
- Excluding Belarus and Ukraine	*16,8*	*15,7*	*14,5*	*15,8*	*16,5*	*17,2*
Russia	6,7	6,7	5,9	17,3	17,8	16,9
Transcaucasus and Central Asia	8,8	8,6	7,7	18,5	9,1	11,3
Total countries in transition	**11,9**	**11,0**	**10,3**	**15,9**	**15,6**	**16,3**

Sources: IMF, *World Economic Outlook*, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

Table 1.19: Net Capital Flows to Emerging Market Economies[1]

(US$ billions)	1995	1996	1997	1998	*Projections** 1999	2000
Net private capital flows	**193,2**	**212,1**	**149,1**	**64,3**	**66,7**	**145,4**
- Foreign direct investments	*97,0*	*115,9*	*142,7*	*131,0*	*116,7*	*123,3*
- Portfolio investments	*41,2*	*80,8*	*66,8*	*36,7*	*8,0*	*44,2*
- Bank loans and other net investments [2]	*55,0*	*15,4*	*-60,4*	*-103,4*	*-58,0*	*-22,1*
Net official flows	**26,1**	**-0,8**	**24,4**	**41,7**	**8,0**	**2,9**
Net external financings	**219,3**	**211,3**	**173,5**	**106,0**	**74,7**	**148,3**
Change in reserves[3]	-120,2	-109,1	-61,2	-34,7	-22,6	-75,1
Errors and omissions	-8,1	-10,4	-25,2	-12,1	-12,7	-14,5
Capital account	**91,0**	**91,8**	**87,1**	**59,2**	**39,4**	**58,7**
Current account	**-91,0**	**-91,8**	**-87,1**	**-59,2**	**-39,4**	**-58,7**

Sources: IMF, World Economic Outlook, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

[1] Net capital flows comprise net direct investments, net portfolio investment, and other long and short term net investment flows, including official and private borrowing. Emerging markets include developing countries, countries in transition, Korea, Singapore, Taiwan and Israel. No data for Hong Kong are available.

[2] Because of data limitations, "bank loans and other net investment" may include some official flows.

[3] A minus sign indicates an increas.

Table 1.20: Breakdown of Net Private Capital Flows to Emerging Market Economies

(% of private capital flows)	1995	1996	1997	1998	*Projections** 1999	2000
Net private capital flows	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**
- Foreign direct investments	50,2%	54,6%	95,7%	203,7%	175,0%	84,8%
- Portfolio investments	21,3%	38,1%	44,8%	57,1%	12,0%	30,4%
- Bank loans and other net investments [1]	28,5%	7,3%	-40,5%	-160,8%	-87,0%	-15,2%

Sources: IMF, World Economic Outlook, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

[1] Because of data limitations, "bank loans and other net investment" may include some official flows.

Table 1.21: Net Capital Flows to Africa[1]

(US$ billions)	**1995**	**1996**	**1997**	**1998**	*Projections** **1999**	**2000**
Net private capital flows	**6,9**	**7,6**	**16,3**	**10,3**	**11,9**	**16,8**
- Foreign direct investments	*4,2*	*5,5*	*7,6*	*6,8*	*8,0*	*8,3*
- Portfolio investments	*1,5*	*-0,2*	*2,9*	*3,5*	*1,0*	*2,1*
- Bank loans and other net investments[2]	*1,2*	*2,3*	*5,8*	*-*	*2,9*	*6,4*
Net official flows	**10,8**	**3,7**	**-4,5**	**1,5**	**0,2**	**1,1**
Net external financings	**17,7**	**11,3**	**11,8**	**11,8**	**12,1**	**17,9**
Change in reserves[3]	-1,7	-7,4	-12,3	2,9	1,0	-4,6
Errors and omissions	0,4	1,8	6,6	3,4	6,6	4,1
Capital account	**16,4**	**5,7**	**6,1**	**18,1**	**19,7**	**17,4**
Current account	**-16,4**	**-5,7**	**-6,1**	**-18,1**	**-19,7**	**-17,4**

Sources: IMF, World Economic Outlook, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

[1] Net capital flows comprise net direct investments, net portfolio investment, and other long and short term net investment flows, including official and private borrowing.

[2] Because of data limitations, "bank loans and other net investment" may include some official flows.

[3] A minus sign indicates an increas.

Table 1.22: Breakdown of Net Private Capital Flows to Africa

(% of private capital flows)	**1995**	**1996**	**1997**	**1998**	*Projections** **1999**	**2000**
Net private capital flows	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**
- Foreign direct investments	60,9%	72,4%	46,6%	66,0%	67,2%	49,4%
- Portfolio investments	21,7%	-2,6%	17,8%	34,0%	8,4%	12,5%
- Bank loans and other net investments[1]	17,4%	30,3%	35,6%	0,0%	24,4%	38,1%

Sources: IMF, World Economic Outlook, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

[1] Because of data limitations, "bank loans and other net investment" may include some official flows.

Table 1.23: Net Capital Flows to Asia[1]

(US$ billions)	1995	1996	1997	1998	*Projections** 1999	2000
CRISIS COUNTRIES[4]						
Net private capital flows	**62,6**	**62,4**	**-19,8**	**-45,2**	**-25,6**	**-11,2**
- Foreign direct investments	*8,7*	*9,5*	*12,1*	*4,9*	*8,6*	*8,3*
- Portfolio investments	*17,0*	*20,0*	*12,6*	*-6,5*	*-3,3*	*5,9*
- Bank loans and other net investments[2]	*36,9*	*32,9*	*-44,5*	*-43,6*	*-30,9*	*-25,4*
Net Official flows	**0,7**	**4,8**	**25,0**	**22,7**	**0,3**	**0,6**
Net external financings	**63,3**	**67,2**	**5,2**	**-22,5**	**-25,3**	**-10,6**
Change in reserves[3]	-18,3	-13,6	37,7	-39,1	-25,1	-20,2
Errors and omissions	-4,5	-0,2	-15,9	-5,0	-0,5	-0,5
Capital account	**40,5**	**53,4**	**27,0**	**-66,6**	**-50,9**	**-31,3**
Current account	**-40,5**	**-53,4**	**-27,0**	**66,6**	**50,9**	**31,3**
OTHER ASIAN COUNTRIES						
Net private capital flows	**32,6**	**38,2**	**22,9**	**-9,6**	**-6,7**	**14,0**
- Foreign direct investments	*41,1*	*45,6*	*50,5*	*45,1*	*32,2*	*37,8*
- Portfolio investments	*-6,1*	*-7,5*	*-11,8*	*-8,8*	*-13,3*	*-8,3*
- Bank loans and other net investments[2]	*-2,4*	*0,1*	*-15,8*	*-45,9*	*-25,6*	*-15,5*
Net official flows	**3,8**	**5,3**	**3,3**	**5,9**	**4,1**	**6,0**
Net external financings	**36,4**	**43,5**	**26,2**	**-3,7**	**-2,6**	**20,0**
Change in reserves[3]	-26,2	-42,5	-46,3	-9,7	1,5	-12,6
Errors and omissions	-19,6	-18,0	-17,4	-17,1	-21,3	-22,3
Capital account	**-9,4**	**-17,0**	**-37,5**	**-30,5**	**-22,4**	**-14,9**
Current account	**9,4**	**17**	**37,5**	**30,5**	**22,4**	**14,9**

Sources: IMF, World Economic Outlook, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

[1] Net capital flows comprise net direct investments, net portfolio investment, and other long and short term net investment flows, including official and private borrowing. Asia includes Korea, Singapore, and Taiwan. No data for Hong Kong are available.

[2] Because of data limitations, "bank loans and other net investment" may include some official flows.

[3] A minus sign indicates an increas.

[4] Indonesia, Korea, Malaysia, the Philippines and Thailand.

Table 1.24: Breakdown of Net Private Capital Flows to Asia[1]

(% of private capital flows)	1995	1996	1997	1998	*Projections** 1999	2000
CRISIS COUNTRIES[2]						
Net private capital flows	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**
- Foreign direct investments	13,9%	15,2%	-61,1%	-10,8%	-33,6%	-74,1%
- Portfolio investments	27,2%	32,1%	-63,6%	14,4%	12,9%	-52,7%
- Bank loans and other net investments[3]	58,9%	52,7%	224,7%	96,5%	120,7%	226,8%
OTHER ASIAN COUNTRIES						
Net private capital flows	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
- Foreign direct investments	126,1%	119,4%	220,5%	-469,8%	-480,6%	270,0%
- Portfolio investments	-18,7%	-19,6%	-51,5%	91,7%	198,5%	-59,3%
- Bank loans and other net investments[3]	-7,4%	0,3%	-69,0%	478,1%	382,1%	-110,7%

Sources: IMF, World Economic Outlook, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

Table 1.25: Net Capital Flows to Middle East and Europe[1]

(US$ billions)	1995	1996	1997	1998	*Projections** 1999	2000
Net private capital flows	**10,1**	**6,9**	**16,7**	**26,4**	**25,6**	**20,5**
- Foreign direct investments	*3,7*	*2,4*	*3,3*	*2,9*	*4,5*	*5,9*
- Portfolio investments	*9,4*	*4,1*	*4,3*	*8,8*	*8,0*	*10,4*
- Bank loans and other net investments[2]	*-3,0*	*0,4*	*9,1*	*14,7*	*13,1*	*4,2*
Net official flows	**-1,4**	**-0,7**	**-1,0**	**-2,2**	**-2,1**	**-3,2**
Net external financings	**8,7**	**6,2**	**15,7**	**24,2**	**23,5**	**17,3**
Change in reserves[3]	-12,7	-16,2	-20,4	-5,3	-4,9	-5,8
Errors and omissions	9,2	4,6	1,8	3,8	0,5	3,6
Capital account	**5,2**	**-5,4**	**-2,9**	**22,7**	**19,1**	**15,1**
Current account	**-5,2**	**5,4**	**2,9**	**-22,7**	**-19,1**	**-15,1**

Sources: IMF, World Economic Outlook, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

[1] Net capital flows comprise net direct investments, net portfolio investment, and other long and short term net investment flows, including official and private borrowing.

[2] Because of data limitations, "bank loans and other net investment" may include some official flows.

[3] A minus sign indicates an increas.

Table 1.26: Breakdown of Net Private Capital Flows to Middle East and Europe

(% of private capital flows)	1995	1996	1997	1998	*Projections** 1999	2000
Net private capital flows	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**
- Foreign direct investments	36,6%	34,8%	19,8%	11,0%	17,6%	28,8%
- Portfolio investments	93,1%	59,4%	25,7%	33,3%	31,3%	50,7%
- Bank loans and other net investments[1]	-29,7%	5,8%	54,5%	55,7%	51,2%	20,5%

Sources: IMF, World Economic Outlook, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

[1] Because of data limitations, "bank loans and other net investment" may include some official flows.

Table 1.27: Net Capital Flows to Western Emisphere[1]

(US$ billions)	1995	1996	1997	1998	*Projections** 1999	2000
Net private capital flows	**38,4**	**82,0**	**87,3**	**68,9**	**38,3**	**82,6**
- Foreign direct investments	*26,1*	*39,3*	*50,7*	*54,0*	*45,6*	*43,7*
- Portfolio investments	*1,7*	*40,0*	*39,7*	*33,0*	*2,1*	*23,2*
- Bank loans and other net investments[2]	*10,6*	*2,7*	*-3,1*	*-18,1*	*-9,4*	*15,7*
Net official flows	**20,6**	**-13,7**	**-7,8**	**1,6**	**2,6**	**-3,2**
Net external financings	**59,0**	**68,3**	**79,5**	**70,5**	**40,9**	**79,4**
Change in reserves[3]	-25,5	-28,3	-14,6	17,7	20,5	-18,0
Errors and omissions	2,4	-1,1	0,2	1,7	-0,7	0,3
Capital account	**35,9**	**38,9**	**65,1**	**89,9**	**60,7**	**61,7**
Current account	**-35,9**	**-38,9**	**-65,1**	**-89,9**	**-60,7**	**-61,7**

Sources: IMF, World Economic Outlook, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

[1] Net capital flows comprise net direct investments, net portfolio investment, and other long and short term net investment flows, including official and private borrowing.

[2] Because of data limitations, "bank loans and other net investment" may include some official flows.

[3] A minus sign indicates an increas.

Table 1.28: Breakdown of Net Private Capital Flows to Western Emisphere

(% of private capital flows)	1995	1996	1997	1998	*Projections** 1999	2000
Net private capital flows	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**
- Foreign direct investments	68,0%	47,9%	58,1%	78,4%	119,1%	52,9%
- Portfolio investments	4,4%	48,8%	45,5%	47,9%	5,5%	28,1%
- Bank loans and other net investments[1]	27,6%	3,3%	-3,6%	-26,3%	-24,5%	19,0%

Sources: IMF, World Economic Outlook, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

[1] Because of data limitations, "bank loans and other net investment" may include some official flows.

Table 1.29: Net Capital Flows to Countries in Transition[1]

(US$ billions)	1995	1996	1997	1998	*Projections** 1999	2000
Net private capital flows	**42,9**	**15,1**	**25,6**	**13,5**	**23,3**	**22,5**
- Foreign direct investments	*13,4*	*13,5*	*18,5*	*17,4*	*17,8*	*19,2*
- Portfolio investments	*17,8*	*24,4*	*19,0*	*6,7*	*13,6*	*10,9*
- Bank loans and other net investments[2]	*11,7*	*-22,8*	*-11,9*	*-10,6*	*-8,1*	*-7,6*
Net official flows	**-8,5**	**-0,2**	**9,3**	**12,2**	**2,9**	**1,6**
Net external financings	**34,4**	**14,9**	**34,9**	**25,7**	**26,2**	**24,1**
Change in reserves[3]	-35,8	-1,0	-5,3	-1,2	-13,5	-13,9
Errors and omissions	3,8	2,3	-0,3	1,1	0,5	0,5
Capital account	**2,4**	**16,2**	**29,3**	**25,6**	**13,2**	**10,7**
Current account	**-2,4**	**-16,2**	**-29,3**	**-25,6**	**-13,2**	**-10,7**

Sources: IMF, World Economic Outlook, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

[1] Net capital flows comprise net direct investments, net portfolio investment, and other long and short term net investment flows, including official and private borrowing.

[2] Because of data limitations, "bank loans and other net investment" may include some official flows.

[3] A minus sign indicates an increas.

Table 1.30: Breakdown of Net Private Capital Flows to Countries in Transition

(% of private capital flows)	1995	1996	1997	1998	*Projections** 1999	2000
Net private capital flows	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**
- Foreign direct investments	31,2%	89,4%	72,3%	128,9%	76,4%	85,3%
- Portfolio investments	41,5%	161,6%	74,2%	49,6%	58,4%	48,4%
- Bank loans and other net investments[1]	27,3%	-151,0%	-46,5%	-78,5%	-34,8%	-33,8%

Sources: IMF, World Economic Outlook, 1997, 1998, 1999; authors' calculations.

* IMF estimates.

[1] Because of data limitations, "bank loans and other net investment" may include some official flows.

Table 1.31: Gross Private Market Financing to Emerging Economies by Region

(US$ billions)	1995	1996	1997	1998	1997				1998				1999	
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Africa	9,3	5,6	14,8	4,4	1	1,8	8,4	3,6	2,1	1	0,1	1,2	1	1,8
Asia	86,9	118,5	127,5	34,1	32,5	38,2	36,2	20,7	7,1	14,1	5,5	7,5	11,6	14,5
Middle East	8,7	9,9	16	9,2	1,8	4,1	2,2	7,9	1,2	1,3	4,8	2	3,4	4
Europe	16,8	21,3	37,5	36,1	4,1	13,7	7,9	11,7	7,5	12,7	9,9	6,1	3,1	7,7
Western Emisphere	36,2	63,1	90,3	64,6	16,7	29,4	30,1	14,1	21,7	21,8	10,2	10,9	13,6	13,7
All Emerging Markets	**157,9**	**218,4**	**286,1**	**148,4**	**56,1**	**87,2**	**84,8**	**58**	**39,6**	**50,9**	**30,5**	**27,7**	**32,7**	**41,7**
(% of total)														
Africa	5,9%	2,6%	5,2%	3,0%	1,8%	2,1%	9,9%	6,2%	5,3%	2,0%	0,3%	4,3%	3,1%	4,3%
Asia	55,0%	54,3%	44,6%	23,0%	57,9%	43,8%	42,7%	35,7%	17,9%	27,7%	18,0%	27,1%	35,5%	34,8%
Middle East	5,5%	4,5%	5,6%	6,2%	3,2%	4,7%	2,6%	13,6%	3,0%	2,6%	15,7%	7,2%	10,4%	9,6%
Europe	10,6%	9,8%	13,1%	24,3%	7,3%	15,7%	9,3%	20,2%	18,9%	25,0%	32,5%	22,0%	9,5%	18,5%
Western Emisphere	22,9%	28,9%	31,6%	43,5%	29,8%	33,7%	35,5%	24,3%	54,8%	42,8%	33,4%	39,4%	41,6%	32,9%
All Emerging Markets	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**

Sources: IMF, World Economic and Financial Surveys, 1999; IMF, World Economic Outlook, 1998, 1999; authors' calculations.

Table 1.32: Gross Private Market Financing to Emerging Economies by Financing Type

(US$ billions)	1995	1996	1997	1998	1997				1998				1999	
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Bonds	63,7	111,3	138,2	78,2	29,6	46,3	48,7	13,5	25,4	28,5	14,1	10,3	21,2	24,2
Equities	11,3	16,4	24,8	9,8	3,2	8,2	6,3	7,2	3,1	3,7	0,2	2,8	2,3	5,7
Loans	82,9	90,7	123,2	60,4	23,3	32,7	29,8	37,3	11,1	18,7	16,2	14,6	9,2	11,8
Total	**157,9**	**218,4**	**286,2**	**148,4**	**56,1**	**87,2**	**84,8**	**58**	**39,6**	**50,9**	**30,5**	**27,7**	**32,7**	**41,7**
(% of total)														
Bonds	40,3%	51,0%	48,3%	52,7%	52,8%	53,1%	57,4%	23,3%	64,1%	56,0%	46,2%	37,2%	64,8%	58,0%
Equities	7,2%	7,5%	8,7%	6,6%	5,7%	9,4%	7,4%	12,4%	7,8%	7,3%	0,7%	10,1%	7,0%	13,7%
Loans	52,5%	41,5%	43,1%	40,7%	41,5%	37,5%	35,1%	64,3%	28,0%	36,7%	53,1%	52,7%	28,1%	28,3%
Total	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**

Sources: IMF, World Economic and Financial Surveys, 1999; IMF, World Economic Outlook, 1998, 1999; authors' calculations.

Table 1.33: Gross Private Market Financing to Emerging Economies by Sectoral Destination

(US$ billions)	1995	1996	1997	1998	1997				1998				1999	
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Public	73,6	95,6	121,4	80,6	22,7	39,3	37	22,2	22,1	26,2	19,2	13,1	18,6	2
Private	84,2	122,8	164,8	68	33,5	47,8	47,8	35,7	17,4	24,6	11,3	14,6	14,2	2
Total	**157,8**	**218,4**	**286,2**	**148,6**	**56,2**	**87,1**	**84,8**	**57,9**	**39,5**	**50,8**	**30,5**	**27,7**	**32,8**	**4**
(% of total)														
Public	46,6%	43,8%	42,4%	54,2%	40,4%	45,1%	43,6%	38,3%	55,9%	51,6%	63,0%	47,3%	56,7%	51,
Private	53,4%	56,2%	57,6%	45,8%	59,6%	54,9%	56,4%	61,7%	44,1%	48,4%	37,0%	52,7%	43,3%	48,
Total	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0**

Sources: IMF, World Economic and Financial Surveys, 1999; IMF, World Economic Outlook, 1998, 1999; authors' calculations.

Table 1.34: Changes in Bank Exposures to Emerging Markets

Borrowing Regions	**1997**		**1998**	
(US$ billions)	1st half	2nd half	1st half	2nd half
Africa	4,7	-0,8	-0,5	-2,9
Asia	33,8	-7,8	-57,6	-28
- Crisis Countries	*18,4*	*-20,3*	*-46,9*	*-21,2*
Middle East	6,1	2,1	3,6	5,4
Europe	11,8	8,4	11,5	-17
- Russia	*7,8*	*4,1*	*3,4*	*-19,2*
Western Hemispohere	20,8	21,3	12,5	-7,6
- Brazil	*3,9*	*3,8*	*7,7*	*-11,7*
All Emerging Economies	**77,2**	**23,2**	**-30,5**	**-50,1**

Sources: IMF, World Economic and Financial Surveys, 1999; BIS, Consolidated International Banking Statistics, May 1999; authors' calculations.

Table 1.35: Distribution of Total Bank Claims towards Emerging Economies by Nationality of Lender

(US$ billions)	31/12/96	31/12/97	30/06/98	31/12/98
All Emerging Economies				
Total Financings	**811,3**	**693,0**	**860,8**	**827,5**
of which :				
- European banks	53,9%	59,9%	61,1%	62,7%
- North American banks	16,5%	14,5%	14,9%	14,1%
- Japanese banks	17,8%	15,1%	14,2%	13,3%
- Other banks	11,8%	10,5%	9,8%	9,9%
Africa				
Total Financings	**50,2**	**58**	**57,2**	**56,4**
of which :				
- European banks	74,5%	77,8%	79,0%	80,2%
- North American banks	8,6%	9,9%	9,9%	8,1%
- Japanese banks	6,9%	4,8%	4,0%	3,3%
- Other banks	10,0%	7,5%	7,0%	8,3%
Asia				
Total Financings	**367**	**378,8**	**319,6**	**297,9**
of which :				
- European banks	42,2%	46,8%	48,7%	50,2%
- North American banks	11,0%	9,8%	9,1%	8,7%
- Japanese banks	32,3%	30,3%	30,8%	28,8%
- Other banks	14,5%	13,1%	11,3%	12,3%
Middle East				
Total Financings	**48,6**	**51,4**	**56,2**	**63,1**
of which :				
- European banks	66,0%	62,7%	63,4%	63,7%
- North American banks	8,9%	9,2%	9,0%	10,2%
- Japanese banks	5,8%	6,6%	5,4%	6,2%
- Other banks	19,3%	21,4%	22,2%	19,9%
Europe				
Total Financings	**103**	**123,5**	**134**	**121,6**
of which :				
- European banks	79,5%	80,0%	80,4%	85,0%
- North American banks	9,3%	8,9%	9,7%	5,6%
- Japanese banks	3,9%	3,4%	3,1%	3,2%
- Other banks	7,3%	7,7%	6,8%	6,2%
Western Hemisphere				
Total Financings	**242,4**	**281,3**	**293,7**	**288,5**
of which :				
- European banks	54,2%	61,5%	61,7%	62,4%
- North American banks	31,2%	26,1%	25,9%	25,6%
- Japanese banks	6,4%	5,2%	5,0%	5,0%
- Other banks	8,3%	7,2%	7,3%	7,0%

Sources: BIS, Consolidated International Banking Statistics, May 1999; authors' calculations.

Annexes to chapter 2

Table 2.1.1. The global OTC derivatives markets

(amounts outstanding in US$ bn)

	End- December 1998	
	Notional amounts	**Gross market values**
Foreign exchange contracts	**18011**	**786**
Outright forwards and forex swaps	12063	491
Currency swaps	2253	200
Options	3695	96
Interest rate contracts	**50015**	**1675**
FRAs	5756	15
Swaps	36262	1509
Options	7997	152
Equity-linked contracts	**1488**	**236**
Forwards and swaps	146	44
Options	1342	192
Commodity contracts	**415**	**43**
Gold	182	13
Other	233	30
Forwards and swaps	137	..
Options	97	..
Other	10371	490
GRAND TOTAL	**80300**	**3230**
GROSS CREDIT EXPOSURE		**1329**

Source: BANK OF INTERNATIONAL SETTLEMENT, 1999h.

Table 2.1.2 Notional amounts and gross market values of OTC derivatives

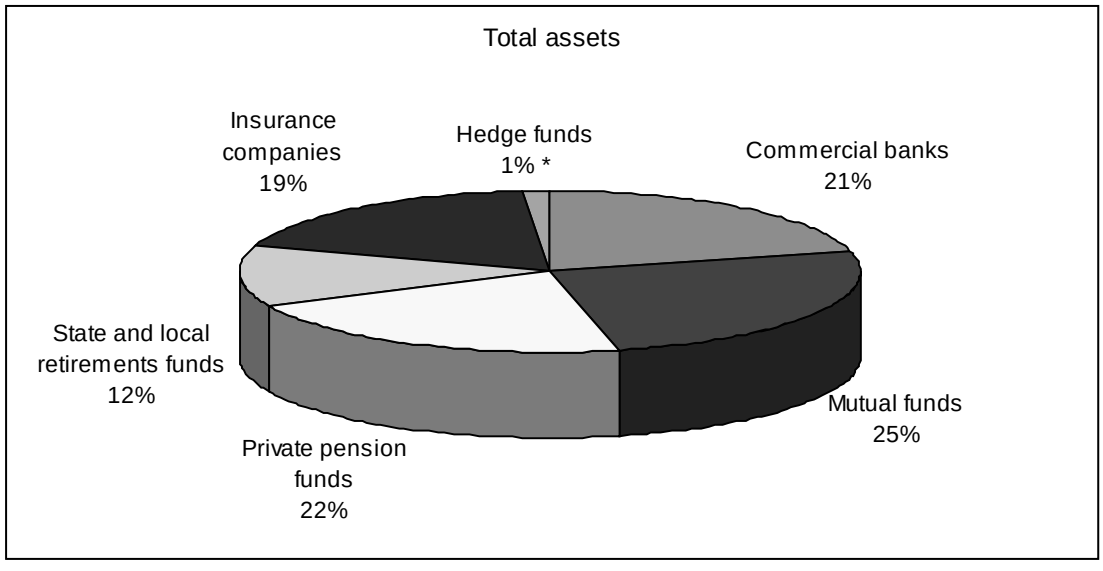
(US $ bn)

	31 st March 1995	
	Notional amounts	**Gross market values**
Foreign exchange contracts	**13095**	**1048**
Forwards and forex swaps	8699	622
Currency swaps	1957	346
Options	2379	71
Other	61	10
Interest rate contracts	**26645**	**647**
FRAs	4597	18
Swaps	18283	562
Options	3548	60
Other	216	7
Equity and stock indices	**579**	**50**
Forwards and swaps	52	7
Options	527	43
Commodities	**318**	**28**
Forwards and swaps	208	21
Options	109	6
TOTAL	**40637**	**1773**

Source: COMMITTEE ON PAYMENT AND SETTLEMENT SYSTEMS AND THE EURO-

CURRENCY STANDING COMMITTEE-Joint report, 1998.

Table 2.3.1. The relative size of the hedge funds industry



Source: Board of Governors of Federal Reserve System, Flow of Funds Accounts of the United States, Fourth Quarter 1998.
** It is difficult to estimate precisely the size of the industry. Here the source used is Report of the President's Working group on financial markets, Department of the Treasury, Board of Governors of the Federal Reserve System 1999.*

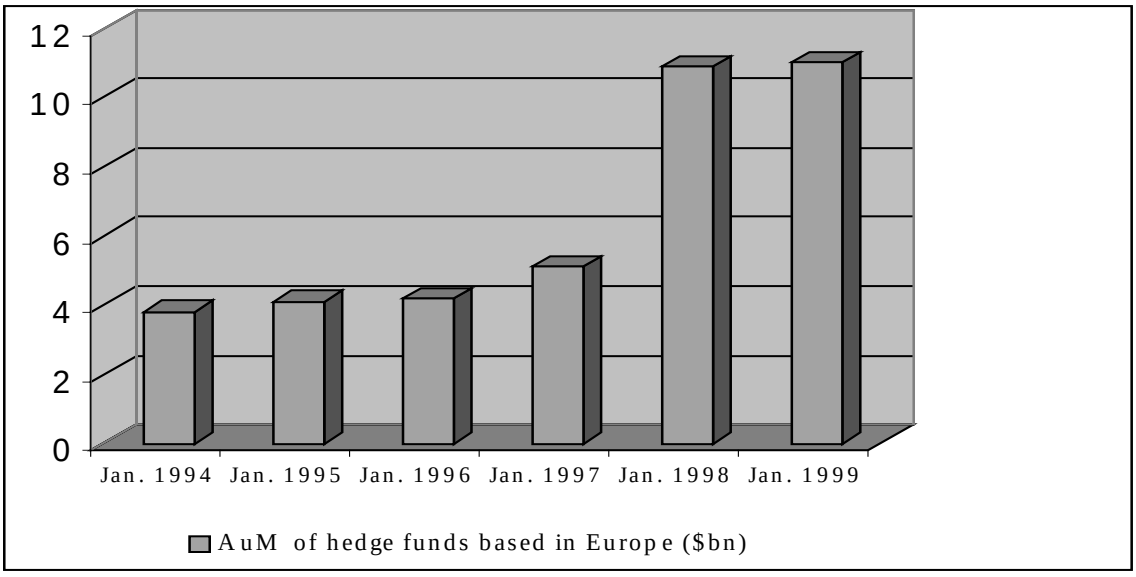
Table 2.3.2. Hedge Funds: Number of Funds by Investment Style

In numbers	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997
Global	1	9	40	61	90	127	191	248	334	404
Macro	0	2	13	14	19	28	34	40	50	61
Market-Neutral	0	5	18	22	40	64	93	123	159	201
Event-driven	0	2	17	21	22	39	48	73	95	120
Sector	0	0	1	1	2	6	10	16	23	40
Short sales	0	0	6	6	7	8	10	10	11	12
Long only	0	0	0	0	2	5	6	7	11	15
Fund of funds	0	4	32	45	63	84	134	181	221	262
Total (including fund of funds)	**1**	**22**	**127**	**170**	**245**	**361**	**526**	**698**	**904**	**1115**
Total (excluding fund of funds)	**1**	**18**	**95**	**125**	**182**	**277**	**392**	**517**	**683**	**853**
In percent of total										
Global	100%	50%	42%	49%	49%	46%	49%	48%	49%	47%
Macro	0%	11%	14%	11%	10%	10%	9%	8%	7%	7%
Market-Neutral	0%	28%	19%	18%	22%	23%	24%	24%	23%	24%
Event-driven	0%	11%	18%	17%	12%	14%	12%	14%	14%	14%
Sector	0%	0%	1%	1%	1%	2%	3%	3%	3%	5%
Short sales	0%	0%	6%	5%	4%	3%	3%	2%	2%	1%
Long only	0%	0%	0%	0%	1%	2%	2%	1%	2%	2%
Total (excluding fund of funds)	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**

millions of US dollars	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997
Global	193	517	1288	2238	3945	6573	12249	14931	20401	30862
Macro	0	0	4700	6827	9396	18930	20165	18807	25510	29759
Market-Neutral	0	78	638	925	1671	3375	4720	5707	10317	17970
Event-driven	0	29	379	550	784	1750	2886	3827	5574	8602
Sector	0	0	2	3	8	48	107	187	691	1752
Short sales	0	0	187	239	226	244	403	432	488	538
Long only	0	0	0	0	14	30	44	85	180	376
Fund of funds	0	190	1339	1941	3075	6468	8167	9416	13163	19717
Total (including fund of funds)	**193**	**814**	**8533**	**12723**	**19119**	**37418**	**48741**	**53392**	**76324**	**109576**
Total (excluding fund of funds)	**193**	**624**	**7194**	**10782**	**16044**	**30950**	**40574**	**43976**	**63161**	**89859**
In percent of total										
Global	100%	83%	18%	21%	25%	21%	30%	34%	32%	34%
Macro	0%	0%	65%	63%	59%	61%	50%	43%	40%	33%
Market-Neutral	0%	13%	9%	9%	10%	11%	12%	13%	16%	20%
Event-driven	0%	5%	5%	5%	5%	6%	7%	9%	9%	10%
Sector	0%	0%	0%	0%	0%	0%	0%	0%	1%	2%
Short sales	0%	0%	3%	2%	1%	1%	1%	1%	1%	1%
Long only	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total (excluding fund of funds)	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**

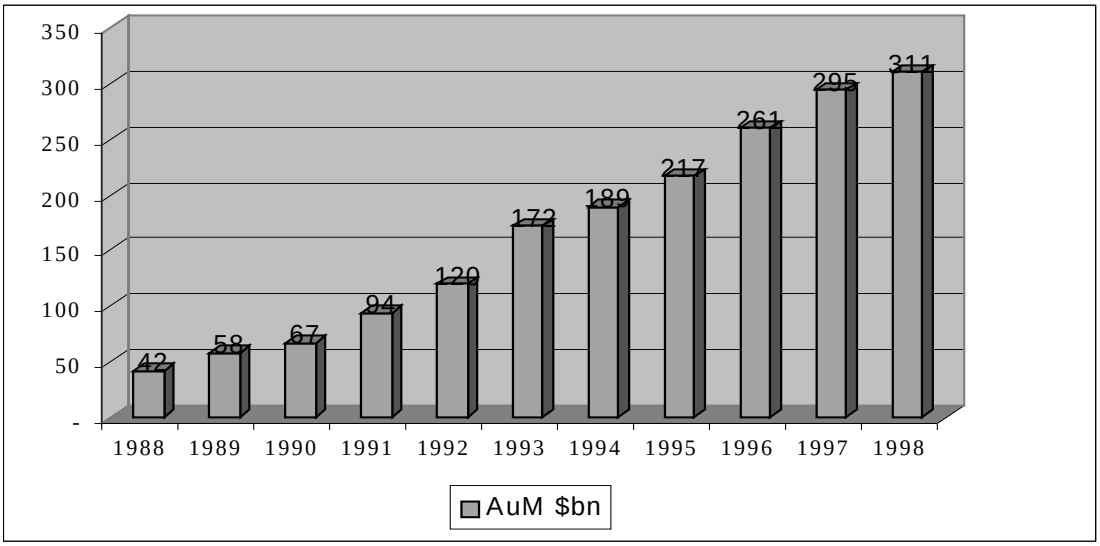
Source: MAR / HEDGE

Table 2.3.3. Hedge funds based in Europe



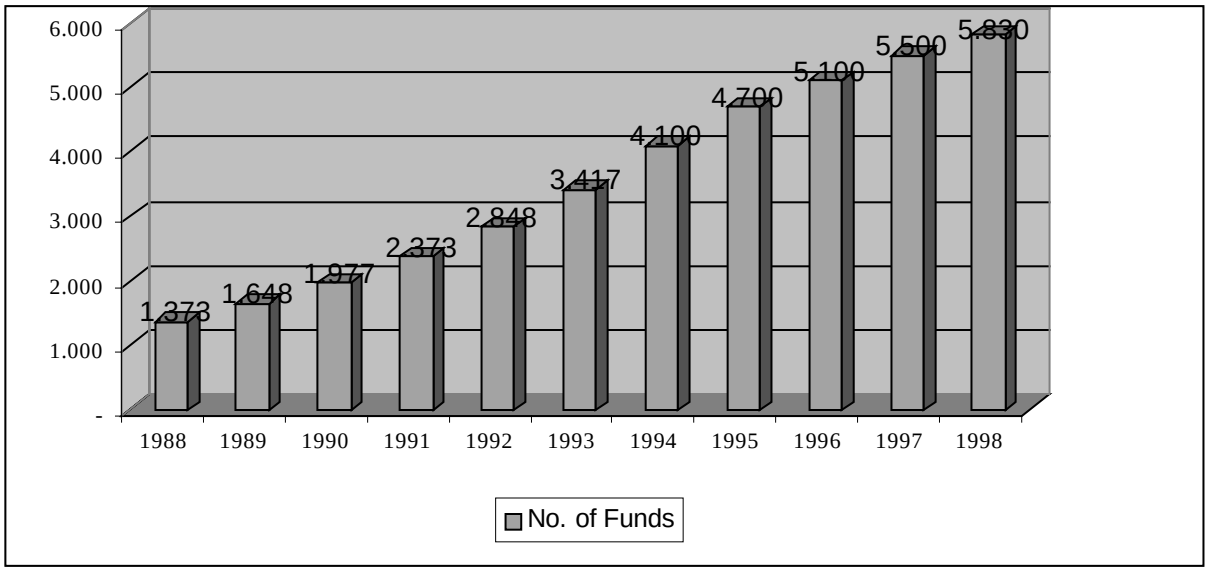
Source: MAR/HEDGE

Table 2.3.4. The growth of hedge funds industry: assets under management (AuM)



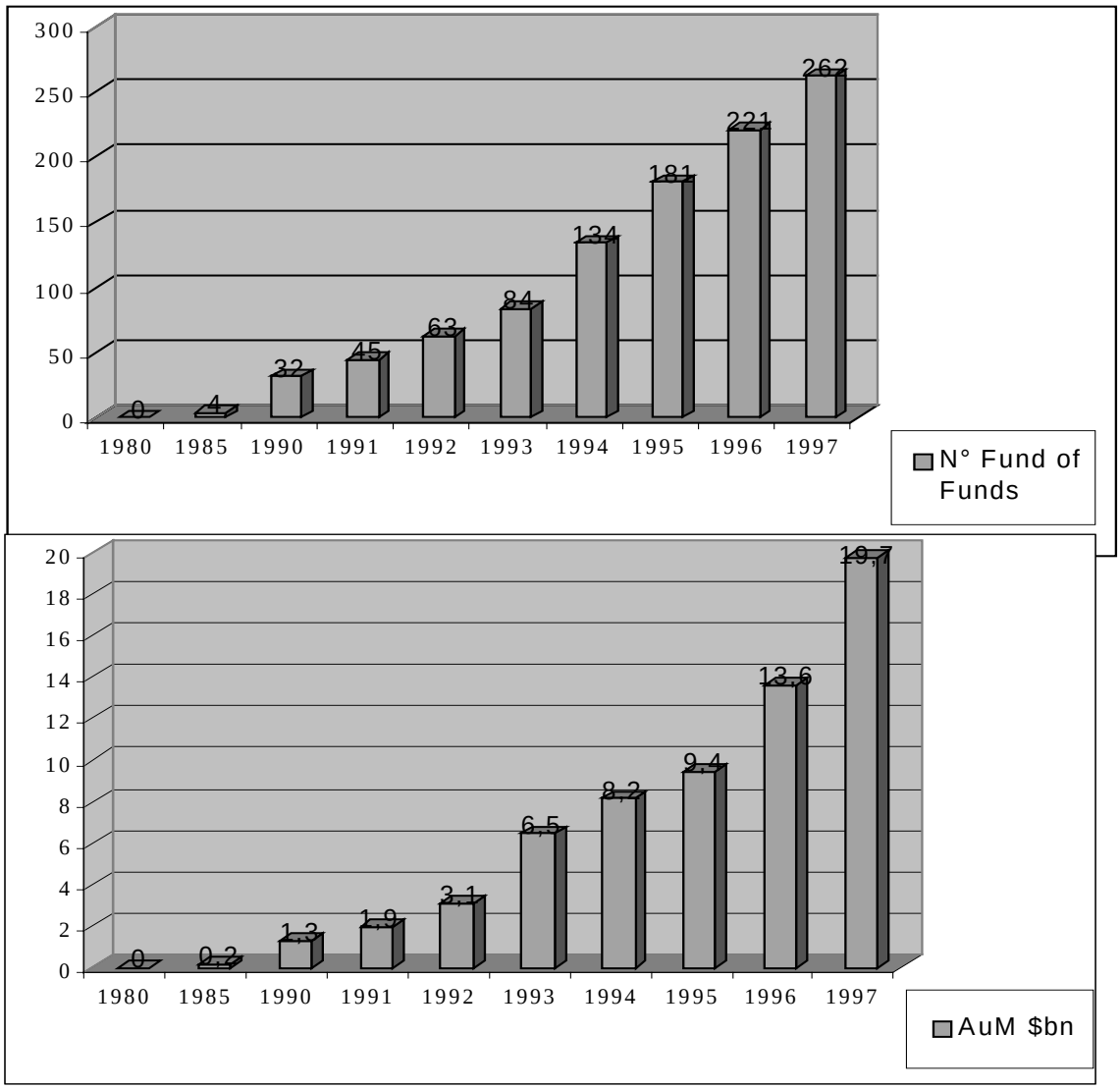
Source: Van Hedge Fund Advisors International

Table 2.3.5. The growth of hedge funds industry: number of hedge funds



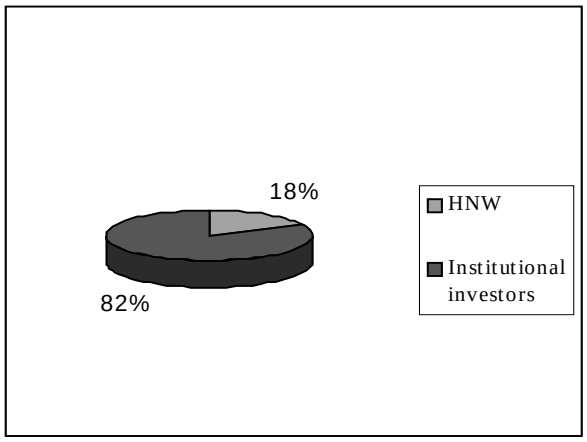
Source: Van Hedge Fund Advisors International

Table 2.3.6. Fund of funds evolution

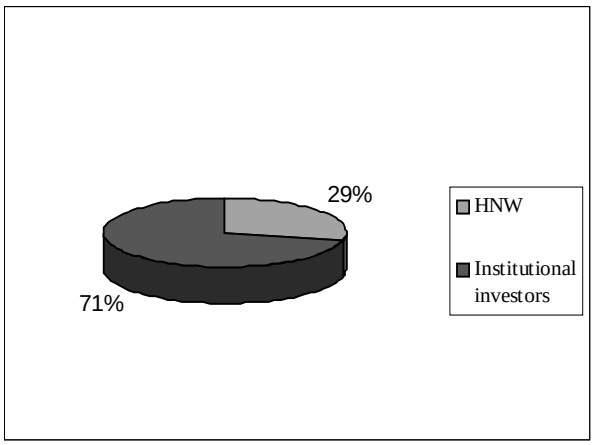


Source: Mar/Hedge

Table 2.3.7. Evolution of hedge fund investor groups



Source: KPMG, 1998.



Source: Andersen Consulting, 1999.

Annexes to chapter 3

Table 3.1.1. The main recommendations of the BIS Working Group on Transparency and Accountability

Private sector	National standards for private sector disclosures should reflect five basic elements: timeliness, completeness, consistency, risk management, audit and control processes. Private firms should adhere to national accounting standards and national authorities should remedy any deficiencies in their enforcement. IASC should give the highest priority to the completion of a core set of accounting standards and IOSCO should undertake a timely review of these standards. A Working Party comprising private sector representatives, international groups and national authorities should be formed in order to examine modalities of compiling and publishing data on the international exposures of investment banks, hedge funds and other institutional investors.
National Authorities	National authorities should publish timely, accurate and comprehensive information about their foreign exchange liquidity position, including their forward books. National authorities should compile and disseminate on a regular and timely basis information about the foreign exchange liquidity position of public, financial and corporate sectors. Fiscal authorities should observe the Code of Good Practices on Fiscal Transparency; the IMF should establish a mechanism for monitoring compliance with the Code. A diverse group of central banks should be assembled to draft a code of best practises on monetary policy transparency, in co-operation with the IMF.
International Financial Institutions	As a general principle, IFIs should adopt a presumption in favour of the release of information, except where release might compromise confidentiality. IFIs should establish, publicly announce and periodically revisit and explicit, well-articulated definition of the areas in which confidentiality should apply and the criteria for applying it.

Source: BIS Working Group on Transparency and Accountability, (1998).

Table 3.1.2. Recommendations for "Accounting and valuation methods"

- Discuss the accounting policies and methods of income recognition for the trading and not-trading derivatives
- Describe the methods used to account for derivatives
- Describe the types of derivatives accounted for under each method
- Describe the criteria to be net for each accounting method used (e.g. hedge accounting criteria)
- Describe the accounting treatment for terminated derivative contract hedges
- Describe the accounting treatment for hedges of anticipated transactions
- Describe the accounting treatment if specified criteria are not met
- Describe the policies and procedures followed for netting assets and liabilities arising from derivatives transactions

Source: BASLE COMMITTEE ON BANKING SUPERVISION AND THE TECHNICAL COMMITTEE OF THE "IOSCO"-Joint Report, 1999b.

Table 3.1.3. Comparisons of the FASB and IASC sets of standards

		IAS 39	FAS 133
Definitions	**Financial/derivative instruments**	A financial instrument is any contract that gives rise to both a financial asset of one enterprise and a financial liability or equity instrument of another enterprise. A derivative is a financial instrument: (a) – whose value changes in response to the change in a specified interest rate, security price, commodity price, foreign exchange rate, index of prices or rates, a credit rating or credit index, or similar variable (sometimes called the 'underlying'); (b) - that requires no initial net investment or little initial net investment relative to other types of contracts that have a similar response to changes in market conditions; and (c) - that is settled at a future date.	The FASB strictly refers to 'derivatives' instruments. As regard to their definition: (a) – same (b) – same (c) – FASB definition requires that the terms of the derivative contract require or permit net settlement.
Definitions	**Fair value**	Fair value is the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction.	The fair value is the amount at which an asset (liability) could be bought (incurred) or sold (settled) in a current transaction between willing parties, that is, other than in a forced or liquidation sale. Quoted market prices in active markets are the best evidence of fair value and should be used as the basis for the measurement, if available. If a quoted market price is available, the fair value is the product of the number of trading units times that market price. If a quoted market price is not available, the estimate of fair value should be based on the best information available in the circumstances. The estimate of fair value should consider prices for similar assets or similar liabilities and the results of valuation techniques to the extent available in the circumstances.
Recognition	**Initial**	All financial assets and financial liabilities are recognised on the balance sheet, including all derivatives	An entity shall recognize all of its derivative instruments in its statement of financial position as either assets or liabilities depending on the rights or obligations under the contracts.
	Derecognition	A financial asset is derecognised if a) the transferee has the right to sell or pledge the asset; and b) the transferor does not have the right to reacquire the transferred assets. (However, such a right does not prevent derecognition if either the asset is readily obtainable in the market or the reacquisition price is fair value at the time of reacquisition.) A financial liability is derecognised if the debtor is legally released from primary responsibility for the liability (or part thereof) either judicially or by the creditor.	In addition to those criteria, FASB requires that the transferred assets be legally isolated from the transferor even in the event of the transferor's bankruptcy. Same. Furthermore, while a IAS 39 includes the example of a bank transferring a loan to another bank, but preserving the relationship of the transferor bank with its customer, FASB Standards might be interpreting as prohibiting derecognition by the transferor bank.
Measurement	**Initial**	All financial assets and financial liabilities are initially measured at cost, which is the *fair value* of whatever was paid or received to acquire the financial asset or liability. Transaction costs are included in the initial measurement of all financial instruments.	Derivative instruments should be measured at fair value, and adjustments to the carrying amount of hedged items should reflect changes in their fair value (that is, gains or losses) that are attributable to the risk being hedged and that arise while the hedge is in effect. FASB does not address transaction costs. Such costs can be included in or excluded in initial measurement of financial instruments.
	Re-measurement	The *fair value criteria* is used to evaluate, mainly: a) all financial asset held for trading; b) all debt securities, equity securities, and other financial assets that are not held for trading but nonetheless are available for sale – except those unquoted equity securities whose fair value cannot be measured reliably by another means are measured at cost subject to an impairment test; c) all derivative assets and derivative liabilities, unless they are linked to and must be settled by an unquoted equity whose fair value cannot be measured reliably.	The FASB content is almost the same. There are little differences in point b) and c): b) all debt securities, equity securities, and other financial assets that are not held for trading but nonetheless are available for sale – *except all unquoted equity securities are measured at cost subject to an impairment test.* *FASB does not require fair value for any unquoted equity security* but the standard does not make an exception from fair value for a derivative that is indexed to an unquoted equity whose fair value cannot be measured reliably.

(….)

(….)

		IAS 39	FAS 133
	Re-measurement	The *cost criteria* is used to evaluate, mainly: (a) loans and receivables originated by the enterprise and not held for trading; (b) other fixed maturity investments, such as debt securities and mandatorily redeemable preferred shares, that the enterprise intends and is able to hold to maturity; and (c) financial assets whose fair value cannot be reliably measured (generally limited to some equity securities with no quoted market price and forwards and options on unquoted equity securities).	As regard to point (c) FASB 133 reveals a little *difference*. In fact, FASB *reports all unquoted equity instruments at cost even if fair value can be measured reliably by means of other than a quotation in an active market.* *FASB requires fair value measurement for all derivatives, including those linked to unquoted equity instruments if they are to be settled in cash but not those to be settled by delivery*, which are outside the scope of 133.
Measurement	**Reporting**	For those financial assets and liabilities that are remeasured to fair value, an enterprise has a single, enterprise-wide option to either: (a) recognise the entire adjustment in net profit or loss for the period; or (b) recognise in net profit or loss for the period only those changes in fair value relating to financial assets and liabilities held for trading, with value changes in non-trading items reported in equity until the financial asset is sold, at which time the realised gain or loss is reported in net profit or loss.	Here is another quite importance difference: *FASB requires option (b) for all enterprises.*
Hedge accounting	**Conditions**	Hedge accounting is permitted in certain circumstances, provided that the hedging relationship is clearly *defined*, *measurable*, and *actually effective*. Use of noncash hedging instruments is restricted to exposure to hedges of any risk of gain or loss from changes in foreign currency exchange rates arising in fair value hedges, cash flow hedges, or hedges of a net investment in a foreign operation.	The conditions to apply a hedging accounting are the same, in FAS 133. A little difference is on the fact that the use of noncash hedging instruments is restricted to exposure to hedges of risk of gain or loss from changes in *foreign currency exchange rates* arising in firm commitments or hedges *of a net investment in a foreign operation (only).*
	Measurement	Three types of hedges are defined: a) Fair value hedge; b) Cash flow hedge c) Hedge of a net investment in a foreign entity. The *fair value hedge* is an hedge of the exposure to changes in the fair value of a recognised asset or liability (such as a hedge of exposure to changes in the fair value of fixed rate debt as a result of changes in interest rates). However, a hedge of an unrecognised firm commitment to buy or sell an asset at a fixed price in the enterprise's reporting currency is accounted *for as a cash flow hedge.* The hedge accounting, for fair value hedge, cash flow hedge and hedge of a net investment in a foreign entity is similar to what described in paragraph 3.1.4.2. A relevant different is on a part of the *Cash flow hedge accounting*: For a hedge of a forecasted asset and liability acquisition, the gain or loss on the hedging instrument will adjust the basis (carrying amount) of the acquired asset or liability. The gain or loss on the hedging instrument that is included in the initial measurement of the asset or liability is subsequently included in net profit or loss when the asset or liability affects net profit or loss (such as in the periods that depreciation expense, interest income or expense, or cost of sales is recognised).	The hedge accounting in FAS 133 is almost the same of the one set in IAS 39, except for the following issues: ... a hedge of an unrecognised firm commitment to buy or sell an asset at a fixed price in the enterprise's reporting currency is accounted *for as a fair value hedge or a cash flow hedge.* For a hedge of a forecasted asset and liability acquisition, the gain or loss on the hedging instrument will remain in equity when the asset or liability is acquired. That gain or loss will subsequently included in net profit or loss in the same period as the asset or liability affects net profit or loss (such as in the periods that depreciation expense, interest income or expense, or cost of sales is recognised). *Thus, net profit or loss will be the same under IAS and FASB Standards, but the balance sheet presentation will be net under IAS and gross under FASB.*

Adapted from: Pacter P. (1999).

Chart 3.1.3. Early vs. later adoption of FAS 133

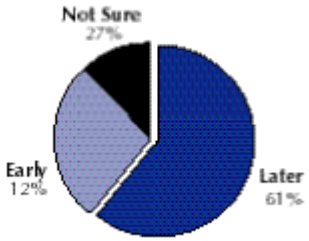
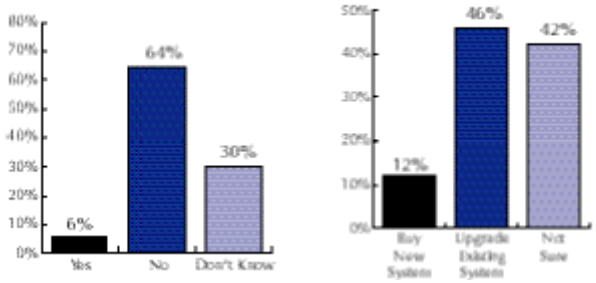


Chart 3.1.4. Availability of systems able to handle FAS 133



Box 3.1.5. The IT reasons to defer FAS 133

Reason	Description
1- The derivatives inventory process	These new guidelines force companies to begin a tedious and lengthy process of cataloguing many potential derivatives. Since no one had anticipated these contracts would one day be caught in a wider derivatives-definition net, the systems, staff and processes are not currently in place to tag them correctly. For large, decentralised and geographically diverse multinationals, that sort of inventory- taking can take months. Often, the people who signed the contracts are not familiar with FAS 133 (e.g., purchasing managers), and most large companies face an uphill battle in educating non-financial staff about FAS 133's implications.
2- Y2K/euro drain on resources	Ideally, non-financial and financial organisations should have been Y2K ready by now. In the real world, they are not. Y2K preparation is therefore an ongoing and critical effort for most organisations. With potentially critical systems/payment failures overseas—and ongoing concern at home—many companies cannot afford to divert Information Systems' staff attention to less critical, accounting projects. Meanwhile, manual processing of FAS 133 data is an impossible process for large multinationals with multiple cash flows, currencies and derivatives on their books.
3- Still unresolved questions	Some of the issues that are yet to be resolved include the effectiveness of complex options, combination options and some cash flows hedges, how to separate host from embedded derivatives, as well as tell them apart and value each separately.
4- Systems vendors are not prepared & companies have Y2K moratoriums	In a survey of treasurers in late 1998, *International Treasurer* found over 70 percent of companies does not have systems that can handle FAS 133 requirements. Recent anecdotal research suggests the figure is closer to 100 percent. Indeed, not a single major vendor in the treasury market has announced that its systems are FAS 133-ready.

Source: International Treasurer/FAS133.com Draft Letter to the FASB

Annexes to chapter 4

Sample Selection and Database

The choice of the countries we analyse is based on consideration of their importance in the world economy and the potential consequence that a banking crisis can transmit to international economic system. We focus on three regions given their prominent role among not industrialised countries: Latin America, Eastern Europe and Asia These regions give an overall contribution to the GDP of all developing countries of 82,2% and to the world GDP of 19,74%. Moreover, according to the BIS, the credit system of these areas receive 80% of total international lending towards banking systems of developing and transition countries (21% Latin America, 45% Asia and 13,9% Eastern Europe in 1998) In all these regions banking systems convey most of the foreign financial resources as 64% of total international banking loans to Eastern Europe, 35% of these to Latin America and 58% to Asia is directed towards banking systems.

In each of these three regions we select the most representative and large economies. For Latin America we consider Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela, which on aggregate represent 91,8% of 1998 GDP of the region. In Eastern Europe we consider the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia[138], Slovakia and Slovenia (79,3% of the 1998 GDP of Eastern Europe). Countries selected for Asia are China, Honk Kong, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand (87,6% of 1998 GDP of Asia). Taken together all those countries are quite representative as they cover 72,2% of the 1998 GDP of developing and transition countries.

Several different sources of data are used in this chapter.

- IMF, World Bank and Economy Intelligence Unit data have been considered to evaluate the role of the banking system;

- the lack of a comprehensive database concerning supervision and regulation forced us to rely on different sources, among which the Institute of International Banking (IIB).

- The banking system analysis at the sector and microeconomic level is based on the Bankscope database provided by IBCA. This database includes balance sheet data for 11.000 banks around the world and on average it covers 90% of total assets of world banking systems. Single bank data have been aggregated at the country and the area level. We consider all commercial, saving or co-operative banks for which a balance sheet is available in the 1995 – 1998 period. Table 4.1 presents the number of banks included in the aggregation for each country and each year.

[138] Due to data availability, we will not consider Russia in the banking sector analysis.

Number of banks in each country per year

Country	1995	1996	1997	1998	Country	1995	1996	1997	1998
EST	179	206	202	124	COLOMBIA	30	32	33	32
CZECH REP.	28	29	27	18	MEXICO	27	25	36	37
ESTONIA	10	10	10	4	PERU	23	25	24	23
HUNGARY	30	31	27	17	**ASIA**	381	391	364	239
LATVIA	18	19	20	13	CHINA	21	22	25	22
LITHUANIA	5	8	11	10	KOREA	29	29	30	20
POLAND	39	46	42	25	HONG KONG	41	44	41	35
ROMANIA	14	16	17	12	INDIA	63	64	62	22
SLOVAKIA	14	19	21	12	INDONESIA	93	93	63	24
SLOVENIA	21	28	27	13	MALAYSIA	40	40	37	26
L. AMERICA	357	374	374	331	PHILIPPINE	26	32	38	29
ARGENTINA	95	104	94	81	SINGAPORE	23	20	16	11
BRASILE	137	140	137	118	TAIWAN	32	33	37	36
CHILE	26	29	29	27	THAILAND	13	14	15	14

Main banking system indicators

REGION	VARIABLE	1995	1996	1997	1998
L.AMERICA	Loan Loss Reserve / Gross Loans	7.23	6.97	8.00	8.68
L.AMERICA	Equity / Total Assets	9.51	9.57	8.34	9.36
L.AMERICA	Net Int Rev / Avg Assets	7.52	6.29	5.67	5.64
L.AMERICA	Oth Op Inc / Avg Assets	3.43	3.65	3.33	2.60
L.AMERICA	Cost to Income Ratio	71.06	75.60	73.53	70.69
L.AMERICA	ROA	-0.05	0.14	1.00	0.65
L.AMERICA	ROE	-0.52	1.49	11.22	7.39
L.AMERICA	Net Loans / Customer & ST Funding	61.66	58.66	55.92	57.93
L.AMERICA	Net Loans / Total Assets	45.48	43.01	41.42	41.53
L.AMERICA	Number of Companies included	357	374	374	331
ASIA	Loan Loss Reserve / Gross Loans	1.44	1.35	1.66	3.57
ASIA	Equity / Total Assets	6.06	6.24	6.13	6.33
ASIA	Net Int Rev / Avg Assets	2.27	2.31	2.15	1.96
ASIA	Oth Op Inc / Avg Assets	0.79	0.69	0.73	0.46
ASIA	Cost to Income Ratio	59.43	56.77	57.77	66.48
ASIA	ROA	0.73	0.75	0.39	-0.81
ASIA	ROE	11.83	12.25	6.24	-13.03
ASIA	Net Loans / Customer & ST Funding	76.55	77.63	81.73	78.65
ASIA	Net Loans / Total Assets	55.60	58.01	61.48	60.15
ASIA	Number of Companies included	381	391	364	239
E. EUROPE	Loan Loss Reserve / Gross Loans	8.91	9.12	8.15	8.43
E. EUROPE	Equity / Total Assets	7.98	7.63	8.44	9.19
E. EUROPE	Net Int Rev / Avg Assets	5.11	4.17	4.00	3.59
E. EUROPE	Oth Op Inc / Avg Assets	2.31	2.65	2.24	2.08
E. EUROPE	Cost to Income Ratio	49.82	55.83	57.88	64.98
E. EUROPE	ROA	1.48	0.45	0.97	-0.07
E. EUROPE	ROE	18.91	5.71	12.04	-0.83
E. EUROPE	Net Loans / Customer & ST Funding	52.43	53.96	53.15	56.88
E. EUROPE	Net Loans / Total Assets	42.00	43.57	42.98	45.06
E. EUROPE	Number of Companies included	179	206	202	124

COUNTRY	VARIABLE	1995	1996	1997	1998
ARGENTINA	Loan Loss Reserve / Gross Loans	10.47	8.40	7.10	5.65
ARGENTINA	Equity / Total Assets	15.19	12.97	11.04	9.04
ARGENTINA	Net Int Rev / Avg Assets	5.51	4.51	3.91	3.56
ARGENTINA	Oth Op Inc / Avg Assets	4.23	3.97	3.67	2.90
ARGENTINA	Cost to Income Ratio	72.75	72.95	75.90	74.78
ARGENTINA	ROA	-0.24	0.52	0.87	0.34
ARGENTINA	ROE	-1.57	3.74	7.33	3.36
ARGENTINA	Net Loans / Customer & ST Funding	75.30	66.06	63.22	58.38
ARGENTINA	Net Loans / Total Assets	60.61	54.46	52.70	49.90
ARGENTINA	Number of Companies included	95	104	94	81
BRASILE	Loan Loss Reserve / Gross Loans	7.60	8.47	12.00	13.94
BRASILE	Equity / Total Assets	8.07	8.58	7.60	9.82
BRASILE	Net Int Rev / Avg Assets	8.32	6.68	5.79	6.10
BRASILE	Oth Op Inc / Avg Assets	3.70	4.10	3.58	2.96
BRASILE	Cost to Income Ratio	71.88	78.18	74.27	70.70
BRASILE	ROA	-0.53	-0.50	0.96	0.65
BRASILE	ROE	-6.15	-6.02	11.87	7.46

COUNTRY	VARIABLE	1995	1996	1997	1998
BRASILE	Net Loans / Customer & ST Funding	55.01	50.10	39.56	43.48
BRASILE	Net Loans / Total Assets	39.41	35.65	27.43	27.67
BRASILE	Number of Companies included	137	140	137	118
CHILE	Loan Loss Reserve / Gross Loans	1.91	1.64	1.65	2.08
CHILE	Equity / Total Assets	8.20	7.67	7.92	7.97
CHILE	Net Int Rev / Avg Assets	5.32	4.78	4.31	3.97
CHILE	Oth Op Inc / Avg Assets	0.73	0.93	0.78	1.00
CHILE	Cost to Income Ratio	63.56	63.50	62.76	59.42
CHILE	ROA	1.03	1.22	1.07	0.96
CHILE	ROE	12.55	15.51	13.75	12.05
CHILE	Net Loans / Customer & ST Funding	80.93	82.82	91.98	87.97
CHILE	Net Loans / Total Assets	60.74	61.65	65.92	63.78
CHILE	Number of Companies included	26	29	29	27

COUNTRY	VARIABLE	1995	1996	1997	1998
COLOMBIA	Loan Loss Reserve / Gross Loans	1.92	2.29	2.07	3.32
COLOMBIA	Equity / Total Assets	16.50	16.43	14.68	11.02
COLOMBIA	Net Int Rev / Avg Assets	8.06	9.23	6.68	4.57
COLOMBIA	Oth Op Inc / Avg Assets	4.95	4.29	4.95	5.44
COLOMBIA	Cost to Income Ratio	62.66	65.34	65.20	79.20
COLOMBIA	ROA	2.31	1.84	1.43	-1.03
COLOMBIA	ROE	14.15	11.15	9.22	-7.93
COLOMBIA	Net Loans / Customer & ST Funding	88.62	93.29	88.36	79.99
COLOMBIA	Net Loans / Total Assets	63.11	62.49	62.88	63.41
COLOMBIA	Number of Companies included	30	32	33	32
MEXICO	Loan Loss Reserve / Gross Loans	6.39	4.95	6.84	6.63
MEXICO	Equity / Total Assets	11.03	10.00	6.84	8.03
MEXICO	Net Int Rev / Avg Assets	3.47	2.82	6.68	5.40
MEXICO	Oth Op Inc / Avg Assets	0.27	1.08	3.35	1.28
MEXICO	Cost to Income Ratio	77.51	98.74	78.70	73.80
MEXICO	ROA	1.59	1.59	0.50	0.66
MEXICO	ROE	21.81	15.26	6.74	8.85
MEXICO	Net Loans / Customer & ST Funding	68.70	76.12	79.44	78.72
MEXICO	Net Loans / Total Assets	51.38	55.39	66.39	66.33
MEXICO	Number of Companies included	27	25	36	37
PERU	Loan Loss Reserve / Gross Loans	4.20	4.29	4.41	6.41
PERU	Equity / Total Assets	8.94	8.79	8.21	8.44
PERU	Net Int Rev / Avg Assets	7.39	7.15	6.75	5.77
PERU	Oth Op Inc / Avg Assets	3.38	2.68	1.98	1.48
PERU	Cost to Income Ratio	67.57	68.66	70.92	73.54
PERU	ROA	1.97	1.76	1.34	0.70
PERU	ROE	21.50	19.87	15.81	8.42
PERU	Net Loans / Customer & ST Funding	70.31	73.27	71.67	75.46
PERU	Net Loans / Total Assets	58.90	60.86	59.70	60.48
PERU	Number of Companies included	23	25	24	23

COUNTRY	VARIABLE	1995	1996	1997	1998
VENEZUELA	Loan Loss Reserve / Gross Loans	9.40	6.49	3.77	6.33
VENEZUELA	Equity / Total Assets	8.75	12.59	11.18	11.88
VENEZUELA	Net Int Rev / Avg Assets	8.81	10.51	11.04	16.54
VENEZUELA	Oth Op Inc / Avg Assets	1.83	2.24	1.63	1.47
VENEZUELA	Cost to Income Ratio	63.08	52.03	61.46	54.16
VENEZUELA	ROA	2.73	6.28	3.81	4.76

VENEZUELA	ROE	35.99	58.58	32.38	41.32
VENEZUELA	Net Loans / Customer & ST Funding	42.21	50.03	59.86	59.83
VENEZUELA	Net Loans / Total Assets	36.25	39.66	50.04	48.23
VENEZUELA	Number of Companies included	19.00	19.00	21.00	13.00
CHINA	Loan Loss Reserve / Gross Loans	0.92	0.88	0.59	0.69
CHINA	Equity / Total Assets	3.52	3.52	4.13	5.93
CHINA	Net Int Rev / Avg Assets	1.72	1.98	2.34	2.50
CHINA	Oth Op Inc / Avg Assets	0.22	0.09	0.17	-0.40
CHINA	Cost to Income Ratio	62.58	55.64	51.40	51.55
CHINA	ROA	0.29	0.26	0.26	0.21
CHINA	ROE	7.83	7.23	6.92	4.09
CHINA	Net Loans / Customer & ST Funding	81.19	81.51	105.13	103.75
CHINA	Net Loans / Total Assets	46.98	52.50	63.71	65.20
CHINA	Number of Companies included	21	22	25	22
HONG KONG	Loan Loss Reserve / Gross Loans	1.74	1.71	1.76	2.96
HONG KONG	Equity / Total Assets	9.28	9.59	9.51	8.74
HONG KONG	Net Int Rev / Avg Assets	2.52	2.66	2.62	2.38
HONG KONG	Oth Op Inc / Avg Assets	0.99	1.00	1.03	0.87
HONG KONG	Cost to Income Ratio	36.92	35.67	35.33	36.62
HONG KONG	ROA	1.92	1.91	1.82	1.00
HONG KONG	ROE	21.75	20.24	19.11	10.91
HONG KONG	Net Loans / Customer & ST Funding	60.27	61.68	68.90	61.53
HONG KONG	Net Loans / Total Assets	48.35	49.26	53.65	49.97
HONG KONG	Number of Companies included	41	44	41	35

COUNTRY	**VARIABLE**	**1995**	**1996**	**1997**	**1998**
INDIA	Loan Loss Reserve / Gross Loans	0.02	0.02	0.03	0.02
INDIA	Equity / Total Assets	4.15	4.77	5.18	5.06
INDIA	Net Int Rev / Avg Assets	3.22	3.26	2.97	2.18
INDIA	Oth Op Inc / Avg Assets	1.47	1.39	1.44	1.03
INDIA	Cost to Income Ratio	65.12	62.95	61.20	60.57
INDIA	ROA	0.07	0.64	0.80	0.48
INDIA	ROE	1.61	14.28	16.03	9.34
INDIA	Net Loans / Customer & ST Funding	51.18	48.99	48.29	47.79
INDIA	Net Loans / Total Assets	43.11	41.44	41.19	40.09
INDIA	Number of Companies included	63	64	62	22
INDONESIA	Loan Loss Reserve / Gross Loans	2.93	2.33	3.13	43.73
INDONESIA	Equity / Total Assets	6.81	7.30	5.57	-51.41
INDONESIA	Net Int Rev / Avg Assets	3.51	3.27	2.01	-3.72
INDONESIA	Oth Op Inc / Avg Assets	1.06	1.03	1.75	0.77
INDONESIA	Cost to Income Ratio	61.24	59.92	77.22	
INDONESIA	ROA	0.37	1.11	-0.34	-21.76
INDONESIA	ROE	5.26	15.72	-5.07	
INDONESIA	Net Loans / Customer & ST Funding	91.90	91.95	100.62	47.45
INDONESIA	Net Loans / Total Assets	69.22	70.16	73.27	52.30
INDONESIA	Number of Companies included	93	93	63	24
KOREA	Loan Loss Reserve / Gross Loans	1.68	1.36	1.84	5.58
KOREA	Equity / Total Assets	4.74	4.57	3.60	3.63
KOREA	Net Int Rev / Avg Assets	1.67	1.61	1.36	1.31
KOREA	Oth Op Inc / Avg Assets	1.22	0.95	0.96	0.97
KOREA	Cost to Income Ratio	84.04	84.71	98.83	121.75
KOREA	ROA	0.28	0.22	-0.51	-2.65
KOREA	ROE	5.44	4.81	-12.16	-73.25
KOREA	Net Loans / Customer & ST Funding	82.16	87.36	85.09	73.09
KOREA	Net Loans / Total Assets	52.86	56.67	58.21	52.19
KOREA	Number of Companies included	29	29	30	20

COUNTRY	VARIABLE	1995	1996	1997	1998
MALAYSIA	Loan Loss Reserve / Gross Loans	3.38	2.90	4.01	5.93
MALAYSIA	Equity / Total Assets	6.99	7.27	7.65	8.28
MALAYSIA	Net Int Rev / Avg Assets	3.12	3.09	2.72	2.59
MALAYSIA	Oth Op Inc / Avg Assets	1.05	0.94	0.88	0.72
MALAYSIA	Cost to Income Ratio	44.46	40.22	38.54	37.18
MALAYSIA	ROA	1.34	1.33	0.64	0.06
MALAYSIA	ROE	19.86	18.57	8.57	0.76
MALAYSIA	Net Loans / Customer & ST Funding	66.53	68.30	68.19	73.53
MALAYSIA	Net Loans / Total Assets	58.95	59.98	59.84	64.19
MALAYSIA	Number of Companies included	40	40	37	26
PHILIPPINE	Loan Loss Reserve / Gross Loans	1.59	1.34	2.06	4.43
PHILIPPINE	Equity / Total Assets	12.73	13.16	13.10	13.80
PHILIPPINE	Net Int Rev / Avg Assets	4.35	4.50	3.80	4.23
PHILIPPINE	Oth Op Inc / Avg Assets	2.29	2.53	1.69	1.97
PHILIPPINE	Cost to Income Ratio	60.78	55.71	54.67	57.31
PHILIPPINE	ROA	2.08	2.34	1.52	0.86
PHILIPPINE	ROE	16.39	18.01	11.61	6.39
PHILIPPINE	Net Loans / Customer & ST Funding	84.33	92.77	90.82	81.72
PHILIPPINE	Net Loans / Total Assets	59.46	63.03	61.83	59.26
PHILIPPINE	Number of Companies included	26	32	38	29
SINGAPORE	Loan Loss Reserve / Gross Loans	0.08	0.08	2.38	5.59
SINGAPORE	Equity / Total Assets	11.62	11.50	11.11	10.82
SINGAPORE	Net Int Rev / Avg Assets	1.94	2.00	1.83	2.02
SINGAPORE	Oth Op Inc / Avg Assets	0.58	0.43	0.54	0.48
SINGAPORE	Cost to Income Ratio	43.78	37.76	34.66	34.99
SINGAPORE	ROA	1.30	1.31	0.72	0.41
SINGAPORE	ROE	11.37	11.32	6.35	3.75
SINGAPORE	Net Loans / Customer & ST Funding	66.03	65.44	69.86	66.74
SINGAPORE	Net Loans / Total Assets	55.57	55.38	59.38	57.24
SINGAPORE	Number of Companies included	23	20	16	11

COUNTRY	VARIABLE	1995	1996	1997	1998
TAIWAN	Loan Loss Reserve / Gross Loans	0.88	0.86	0.81	0.91
TAIWAN	Equity / Total Assets	6.58	6.60	6.72	7.61
TAIWAN	Net Int Rev / Avg Assets	2.14	2.01	1.85	1.87
TAIWAN	Oth Op Inc / Avg Assets	0.20	0.31	0.43	0.34
TAIWAN	Cost to Income Ratio	58.59	59.64	56.89	57.75
TAIWAN	ROA	0.69	0.72	0.74	0.71
TAIWAN	ROE	10.27	10.97	11.07	9.89
TAIWAN	Net Loans / Customer & ST Funding	80.03	76.60	79.17	78.28
TAIWAN	Net Loans / Total Assets	69.96	67.41	70.40	68.87
TAIWAN	Number of Companies included	32	33	37	36
THAILAND	Loan Loss Reserve / Gross Loans	2.08	2.76	5.64	10.65
THAILAND	Equity / Total Assets	8.24	8.41	5.04	6.32
THAILAND	Net Int Rev / Avg Assets	3.61	3.53	2.34	1.06
THAILAND	Oth Op Inc / Avg Assets	1.11	0.90	0.76	1.18
THAILAND	Cost to Income Ratio	40.20	41.64	51.13	134.64
THAILAND	ROA	1.73	1.06	-0.99	-5.96
THAILAND	ROE	21.34	12.68	-13.98	-102.97
THAILAND	Net Loans / Customer & ST Funding	98.01	102.10	91.53	83.84
THAILAND	Net Loans / Total Assets	81.33	82.71	78.94	72.63
THAILAND	Number of Companies included	13	14	15	14
CZECH REP.	Loan Loss Reserve / Gross Loans	9.49	9.58	11.11	12.33
CZECH REP.	Equity / Total Assets	9.15	7.71	7.62	7.50
CZECH REP.	Net Int Rev / Avg Assets	3.54	2.70	2.62	3.22

CZECH REP.	Oth Op Inc / Avg Assets	1.57	1.75	1.61	2.13
CZECH REP.	Cost to Income Ratio	54.55	63.22	57.75	77.44
CZECH REP.	ROA	0.69	-0.47	-0.61	-2.08
CZECH REP.	ROE	7.79	-5.64	-8.00	-27.57
CZECH REP.	Net Loans / Customer & ST Funding	62.18	63.33	61.39	60.89
CZECH REP.	Net Loans / Total Assets	47.91	47.55	47.57	45.56
CZECH REP.	Number of Companies included	28	29	27	18

COUNTRY	**VARIABLE**	**1995**	**1996**	**1997**	**1998**
ESTONIA	Loan Loss Reserve / Gross Loans	2.87	2.20	2.13	4.77
ESTONIA	Equity / Total Assets	8.81	9.06	8.30	13.55
ESTONIA	Net Int Rev / Avg Assets	8.79	5.87	5.00	3.95
ESTONIA	Oth Op Inc / Avg Assets	7.52	6.19	5.34	1.55
ESTONIA	Cost to Income Ratio	64.65	62.77	54.63	81.23
ESTONIA	ROA	3.93	2.92	2.84	-1.57
ESTONIA	ROE	47.65	32.58	33.17	-14.23
ESTONIA	Net Loans / Customer & ST Funding	54.64	65.92	74.07	87.47
ESTONIA	Net Loans / Total Assets	41.54	48.71	53.05	59.69
ESTONIA	Number of Companies included	10	10	10	4
HUNGARY	Loan Loss Reserve / Gross Loans	9.08	4.33	3.82	3.51
HUNGARY	Equity / Total Assets	6.73	7.33	8.51	8.02
HUNGARY	Net Int Rev / Avg Assets	5.75	4.16	4.14	4.09
HUNGARY	Oth Op Inc / Avg Assets	3.25	3.60	1.51	1.87
HUNGARY	Cost to Income Ratio	62.47	70.95	69.92	75.02
HUNGARY	ROA	1.65	1.44	1.65	1.25
HUNGARY	ROE	24.14	20.51	20.92	15.09
HUNGARY	Net Loans / Customer & ST Funding	43.96	41.89	43.86	46.40
HUNGARY	Net Loans / Total Assets	36.16	34.90	36.27	38.43
HUNGARY	Number of Companies included	30	31	27	17
LATVIA	Loan Loss Reserve / Gross Loans	20.37	17.50	8.29	5.63
LATVIA	Equity / Total Assets	10.52	12.19	12.38	10.04
LATVIA	Net Int Rev / Avg Assets	8.05	6.85	5.53	4.56
LATVIA	Oth Op Inc / Avg Assets	9.00	7.19	6.03	0.63
LATVIA	Cost to Income Ratio	62.55	58.56	62.55	98.90
LATVIA	ROA	0.98	3.55	3.29	-3.61
LATVIA	ROE	9.47	30.85	26.74	-31.96
LATVIA	Net Loans / Customer & ST Funding	28.56	25.67	32.09	57.40
LATVIA	Net Loans / Total Assets	23.68	20.91	25.77	44.87
LATVIA	Number of Companies included	18	19	20	13

COUNTRY	**VARIABLE**	**1995**	**1996**	**1997**	**1998**
LITHUANIA	Loan Loss Reserve / Gross Loans	17.95	24.32	12.87	6.18
LITHUANIA	Equity / Total Assets	0.26	4.60	8.25	11.96
LITHUANIA	Net Int Rev / Avg Assets	6.77	5.64	5.46	4.24
LITHUANIA	Oth Op Inc / Avg Assets	4.18	4.23	4.65	3.62
LITHUANIA	Cost to Income Ratio	72.29	86.23	81.64	83.74
LITHUANIA	ROA	-3.11	-3.83	0.31	0.99
LITHUANIA	ROE	-104.91	-136.83	4.44	9.57
LITHUANIA	Net Loans / Customer & ST Funding	80.99	59.47	51.52	60.13
LITHUANIA	Net Loans / Total Assets	60.25	48.80	40.27	44.64
LITHUANIA	Number of Companies included	5	8	11	10
POLAND	Loan Loss Reserve / Gross Loans	7.10	5.45	3.77	2.92
POLAND	Equity / Total Assets	6.80	8.98	8.82	11.62
POLAND	Net Int Rev / Avg Assets	5.96	5.54	4.87	3.37
POLAND	Oth Op Inc / Avg Assets	1.85	2.10	1.93	1.98
POLAND	Cost to Income Ratio	48.03	47.49	55.24	53.03

POLAND	ROA	2.38	2.66	2.04	1.37
POLAND	ROE	37.16	33.27	22.96	13.90
POLAND	Net Loans / Customer & ST Funding	41.10	49.43	52.37	60.60
POLAND	Net Loans / Total Assets	32.66	40.06	42.81	49.27
POLAND	Number of Companies included	39	46	42	25
ROMANIA	Loan Loss Reserve / Gross Loans	6.45	15.74	12.61	13.68
ROMANIA	Equity / Total Assets	8.94	2.72	13.76	19.13
ROMANIA	Net Int Rev / Avg Assets	8.99	5.83	7.07	8.92
ROMANIA	Oth Op Inc / Avg Assets	5.61	7.36	7.07	3.27
ROMANIA	Cost to Income Ratio	25.62	44.38	48.86	35.73
ROMANIA	ROA	2.64	-6.16	3.08	1.95
ROMANIA	ROE	28.16	-112.70	49.14	12.43
ROMANIA	Net Loans / Customer & ST Funding	68.43	57.82	39.16	44.71
ROMANIA	Net Loans / Total Assets	57.90	52.50	31.26	33.97
ROMANIA	Number of Companies included	14	16	17	12

COUNTRY	**VARIABLE**	**1995**	**1996**	**1997**	**1998**
SLOVAKIA	Loan Loss Reserve / Gross Loans	14.06	15.68	17.35	17.44
SLOVAKIA	Equity / Total Assets	6.92	4.73	4.44	4.46
SLOVAKIA	Net Int Rev / Avg Assets	4.42	2.86	2.44	1.63
SLOVAKIA	Oth Op Inc / Avg Assets	1.51	1.42	2.03	2.10
SLOVAKIA	Cost to Income Ratio	42.72	62.68	71.21	62.55
SLOVAKIA	ROA	0.54	0.19	-0.75	-0.67
SLOVAKIA	ROE	7.67	3.21	-16.36	-15.14
SLOVAKIA	Net Loans / Customer & ST Funding	50.68	53.43	49.52	38.78
SLOVAKIA	Net Loans / Total Assets	45.56	47.86	44.67	35.37
SLOVAKIA	Number of Companies included	14	19	21	12
SLOVENIA	Loan Loss Reserve / Gross Loans	6.45	6.70	6.50	7.53
SLOVENIA	Equity / Total Assets	10.73	11.33	11.14	9.94
SLOVENIA	Net Int Rev / Avg Assets	3.91	4.13	4.01	4.20
SLOVENIA	Oth Op Inc / Avg Assets	2.54	2.41	2.04	2.16
SLOVENIA	Cost to Income Ratio	67.54	57.94	55.60	59.71
SLOVENIA	ROA	1.25	1.12	0.97	1.21
SLOVENIA	ROE	12.19	10.15	8.67	11.48
SLOVENIA	Net Loans / Customer & ST Funding	57.55	53.75	54.68	57.86
SLOVENIA	Net Loans / Total Assets	43.42	41.81	42.89	48.61
SLOVENIA	Number of Companies included	21	28	27	13

Source: Bankscope – IBCA database, September 1999.

Financial system structure indicators

Region	Variable	1995	1996	1997	1998
Asia	Claims on priv. Sec. (monetary survey)/GDP	71.97%	76.95%	85.08%	90.87%
Asia	Growth of claims on priv. sec. (monetary survey)/GDP	2.37%	6.92%	10.57%	6.80%
Asia	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-6.03%	-0.67%	4.35%	4.54%
Asia	M2/GDP	87.31%	91.08%	98.12%	112.36%
Eastern Europe	Claims on priv. Sec. (monetary survey)/GDP	15.77%	14.39%	16.54%	19.95%
Eastern Europe	Growth of claims on priv. sec. (monetary survey)/GDP	-12.31%	-8.76%	15.00%	20.56%
Eastern Europe	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-12.70%	-8.76%	12.88%	21.35%
Eastern Europe	M2/GDP	29.99%	28.61%	28.93%	34.82%
Latin Ameirca	Claims on priv. Sec. (monetary survey)/GDP	26.44%	23.08%	23.95%	25.30%
Latin Ameirca	Growth of claims on priv. sec. (monetary survey)/GDP	-22.14%	-12.72%	3.80%	5.61%
Latin Ameirca	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-23.41%	-16.34%	-1.56%	3.72%
Latin Ameirca	M2/GDP	27.21%	26.45%	28.55%	29.41%

Sources: IMF, EIU, World Bank.

Country	Variable	1995	1996	1997	1998
China	Claims on priv. Sec. (monetary survey)/GDP	86.97%	92.60%	101.30%	112.60%
China	Growth of claims on priv. sec. (monetary survey)/GDP	-1.91%	6.46%	9.40%	11.16%
China	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-12.41%	-3.23%	0.56%	3.40%
China	M2/GDP	102.25%	109.70%	120.76%	132.69%
Honk Kong	Claims on priv. Sec. (monetary survey)/GDP	155.24%	162.36%	172.94%	169.75%
Honk Kong	Growth of claims on priv. sec. (monetary survey)/GDP	4.19%	4.59%	6.52%	-1.85%
Honk Kong	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	0.29%	0.10%	1.26%	3.27%
Honk Kong	M2/GDP	173.17%	176.00%	169.70%	197.16%
India	Claims on priv. Sec. (monetary survey)/GDP	22.28%	23.15%	23.28%	22.47%
India	Growth of claims on priv. sec. (monetary survey)/GDP	-4.83%	3.91%	0.55%	-3.46%
India	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-12.23%	-3.49%	-4.25%	-9.26%
India	M2/GDP	43.10%	44.21%	46.91%	49.28%
Indonesia	Claims on priv. Sec. (monetary survey)/GDP	53.48%	55.43%	61.03%	53.94%
Indonesia	Growth of claims on priv. sec. (monetary survey)/GDP	3.07%	3.65%	10.10%	-11.62%
Indonesia	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-5.15%	-4.17%	5.20%	2.08%
Indonesia	M2/GDP	48.05%	52.15%	55.61%	60.31%
Korea	Claims on priv. Sec. (monetary survey)/GDP	60.70%	65.69%	73.40%	74.18%
Korea	Growth of claims on priv. sec. (monetary survey)/GDP	0.46%	8.21%	11.74%	1.06%
Korea	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-8.46%	1.46%	6.73%	6.90%
Korea	M2/GDP	43.74%	45.74%	48.35%	57.52%
Malaysia	Claims on priv. Sec. (monetary survey)/GDP	85.08%	93.13%	103.94%	113.61%
Malaysia	Growth of claims on priv. sec. (monetary survey)/GDP	13.55%	9.46%	11.61%	9.30%
Malaysia	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	3.72%	-0.54%	4.07%	16.80%
Malaysia	M2/GDP	86.22%	93.91%	99.88%	102.41%
Philippines	Claims on priv. Sec. (monetary survey)/GDP	37.53%	48.98%	56.53%	47.92%
Philippines	Growth of claims on priv. sec. (monetary survey)/GDP	28.98%	30.53%	15.42%	-15.24%
Philippines	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	24.14%	24.80%	10.31%	-14.72%
Philippines	M2/GDP	50.35%	54.46%	61.55%	60.70%

Country	Variable	1995	1996	1997	1998
Singapore	Claims on priv. Sec. (monetary survey)/GDP	91.04%	97.33%	100.28%	109.64%
Singapore	Growth of claims on priv. sec. (monetary survey)/GDP	7.81%	6.90%	3.04%	9.33%
Singapore	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-0.63%	-0.62%	-4.95%	7.84%
Singapore	M2/GDP	84.48%	85.61%	86.32%	113.84%
Taiwan	Claims on priv. Sec. (monetary survey)/GDP	n.a.	n.a.	n.a.	n.a.
Taiwan	Growth of claims on priv. sec. (monetary survey)/GDP	n.a	n.a	n.a	n.a
Taiwan	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	n.a.	n.a.	n.a.	n.a.
Taiwan	M2/GDP	185.79%	186.88%	185.64%	187.34%
Thailand	Claims on priv. Sec. (monetary survey)/GDP	97.49%	99.97%	118.69%	115.10%
Thailand	Growth of claims on priv. sec. (monetary survey)/GDP	7.25%	2.55%	18.73%	-3.03%
Thailand	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-1.59%	-2.97%	19.98%	6.39%
Thailand	M2/GDP	78.92%	79.47%	89.92%	103.44%
Czech Republic	Claims on priv. Sec. (monetary survey)/GDP	59.45%	57.38%	67.52%	59.77%
Czech Republic	Growth of claims on priv. sec. (monetary survey)/GDP	-0.06%	-3.48%	17.66%	-11.47%
Czech Republic	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-6.41%	-7.29%	17.38%	-9.18%
Czech Republic	M2/GDP	80.50%	75.40%	71.22%	66.70%
Estonia	Claims on priv. Sec. (monetary survey)/GDP	14.88%	22.41%	35.31%	n.a.
Estonia	Growth of claims on priv. sec. (monetary survey)/GDP	38.78%	50.60%	57.58%	n.a
Estonia	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	34.49%	46.62%	47.01%	n.a.
Estonia	M2/GDP	25.50%	33.44%	41.38%	n.a.
Hungary	Claims on priv. Sec. (monetary survey)/GDP	22.53%	n.a.	n.a.	n.a.
Hungary	Growth of claims on priv. sec. (monetary survey)/GDP	-14.04%	n.a	n.a	n.a
Hungary	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-15.55%	n.a.	n.a.	n.a.
Hungary	M2/GDP	42.33%	41.69%	41.16%	39.72%

Country	Variable	1995	1996	1997	1998
Latvia	Claims on priv. Sec. (monetary survey)/GDP	7.84%	7.18%	10.72%	14.13%
Latvia	Growth of claims on priv. sec. (monetary survey)/GDP	-52.30%	-8.46%	49.42%	31.77%
Latvia	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-51.49%	-11.80%	40.81%	28.22%
Latvia	M2/GDP	23.36%	23.01%	27.93%	25.38%
Lithuania	Claims on priv. Sec. (monetary survey)/GDP	15.13%	10.76%	9.62%	11.40%
Lithuania	Growth of claims on priv. sec. (monetary survey)/GDP	-13.80%	-28.85%	-10.60%	18.42%
Lithuania	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-17.10%	-33.55%	-17.90%	13.32%
Lithuania	M2/GDP	23.20%	17.21%	18.97%	19.47%
Poland	Claims on priv. Sec. (monetary survey)/GDP	12.72%	15.88%	18.08%	20.79%
Poland	Growth of claims on priv. sec. (monetary survey)/GDP	6.26%	24.85%	13.88%	14.99%
Poland	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-0.79%	18.74%	6.99%	10.16%
Poland	M2/GDP	36.15%	37.63%	39.66%	42.41%
Romania	Claims on priv. Sec. (monetary survey)/GDP	n.a.	11.55%	8.47%	12.75%
Romania	Growth of claims on priv. sec. (monetary survey)/GDP	n.a	n.a	-26.68%	50.59%
Romania	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	n.a.	n.a.	-20.11%	57.90%
Romania	M2/GDP	25.10%	27.97%	24.88%	27.32%
Russia	Claims on priv. Sec. (monetary survey)/GDP	8.46%	7.19%	9.15%	12.64%
Russia	Growth of claims on priv. sec. (monetary survey)/GDP	-30.30%	-14.99%	27.33%	38.10%
Russia	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-26.10%	-11.49%	26.53%	42.70%
Russia	M2/GDP	17.40%	16.24%	17.68%	22.94%
Slovakia	Claims on priv. Sec. (monetary survey)/GDP	27.76%	32.03%	44.21%	n.a.
Slovakia	Growth of claims on priv. sec. (monetary survey)/GDP	14.05%	15.40%	38.03%	n.a
Slovakia	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	7.14%	8.82%	31.50%	n.a.
Slovakia	M2/GDP	68.31%	71.24%	68.17%	65.89%

Country	Variable	1995	1996	1997	1998
Slovenia	Claims on priv. Sec. (monetary survey)/GDP	27.45%	28.84%	28.56%	32.66%
Slovenia	Growth of claims on priv. sec. (monetary survey)/GDP	19.09%	5.05%	-0.96%	14.35%
Slovenia	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	14.98%	0.94%	-5.89%	10.47%
Slovenia	M2/GDP	36.54%	39.23%	42.48%	45.19%
Argentina	Claims on priv. Sec. (monetary survey)/GDP	19.68%	19.88%	21.56%	23.66%
Argentina	Growth of claims on priv. sec. (monetary survey)/GDP	-1.38%	1.00%	8.46%	9.74%
Argentina	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	2.64%	-3.78%	-0.15%	5.84%
Argentina	M2/GDP	20.14%	22.69%	26.47%	28.73%
Brazil	Claims on priv. Sec. (monetary survey)/GDP	30.82%	26.28%	25.98%	28.46%
Brazil	Growth of claims on priv. sec. (monetary survey)/GDP	-32.24%	-14.72%	-1.15%	9.55%
Brazil	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-36.44%	-17.52%	-4.35%	9.66%
Brazil	M2/GDP	29.71%	27.66%	29.42%	30.73%
Chile	Claims on priv. Sec. (monetary survey)/GDP	52.68%	57.69%	60.23%	62.21%
Chile	Growth of claims on priv. sec. (monetary survey)/GDP	5.92%	9.51%	4.42%	3.28%
Chile	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-4.71%	2.09%	-3.16%	-0.13%
Chile	M2/GDP	39.02%	42.70%	44.19%	45.82%
Colombia	Claims on priv. Sec. (monetary survey)/GDP	20.74%	20.84%	23.94%	26.04%
Colombia	Growth of claims on priv. sec. (monetary survey)/GDP	6.23%	0.48%	14.92%	8.76%
Colombia	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	0.39%	-1.57%	11.79%	8.20%
Colombia	M2/GDP	21.89%	22.36%	25.87%	26.64%
Mexico	Claims on priv. Sec. (monetary survey)/GDP	25.22%	15.74%	17.86%	17.34%
Mexico	Growth of claims on priv. sec. (monetary survey)/GDP	-27.81%	-37.59%	13.48%	-2.92%
Mexico	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-21.60%	-42.75%	6.68%	-7.71%
Mexico	M2/GDP	29.06%	26.73%	28.15%	27.70%

Country	Variable	1995	1996	1997	1998
Peru	Claims on priv. Sec. (monetary survey)/GDP	14.33%	19.07%	21.77%	24.93%
Peru	Growth of claims on priv. sec. (monetary survey)/GDP	20.79%	33.13%	14.15%	14.52%
Peru	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	13.55%	30.68%	7.20%	14.23%
Peru	M2/GDP	18.71%	22.89%	25.77%	28.56%
Venezuela	Claims on priv. Sec. (monetary survey)/GDP	8.66%	8.01%	12.24%	11.57%
Venezuela	Growth of claims on priv. sec. (monetary survey)/GDP	-5.90%	-7.42%	52.70%	-5.42%
Venezuela	Growth of claims on priv. Sec. (monetary survey)/GDP - Growth GDP	-9.87%	-7.22%	46.79%	-4.75%
Venezuela	M2/GDP	25.34%	19.92%	21.51%	19.03%

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