BASEL COMMITTEE ON BANKING SUPERVISION
WORKING PAPERS

No. 2 – June 1999

SUPERVISORY LESSONS TO BE DRAWN FROM THE ASIAN CRISIS

by a working group led by:

Rudi Bonte

and participation from:

Joseph Bisignano
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BANK FOR INTERNATIONAL SETTLEMENTS
Basel, Switzerland

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Abstract

The paper draws some lessons from the 1997-1998 Asian financial crisis for G10 creditor banks and their supervisors, particularly in relation to the Basel Capital Accord and the "Core Principles". A number of recommendations are made relating to the quantitative solvency requirements, the qualitative supervisory review process, and some other areas. By way of background to these recommendations, major differences with earlier emerging market crises are identified, and significant differences in exposure between groups of Asian debtor countries and groups of G10 creditor banks are highlighted. Although some commentators have blamed the Basel Capital Accord for the evolution and the nature of the exposure on Asian counterparties, it was difficult to establish conclusive empirical evidence that the solvency rules caused distortions. The working group identified a number of changes in the practice of supervisors, banks and ratings agencies in the area of country risk measurement and management that have already taken place in reaction to the crisis. However, some shortcomings in the performance of the ratings agencies in the Asia crisis are noted, which may be especially relevant if the regulatory use of ratings is to be increased in the future.

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Executive summary

The "Working Group on the Supervisory Lessons to be drawn from the Asian Crisis" was established by the Basel Committee on Banking Supervision in the wake of the 1997–1998 Asian financial crisis. The working group was asked to draw lessons from the crisis for G10 creditor banks and their supervisors, particularly in relation to the Basel Capital Accord and the "Core Principles". The working group's findings and conclusions are intended to address the issues raised not only in Asia, but in emerging markets more generally.

Chapter 1 of the paper gives an overview of the Asian crisis and compares it with earlier major international crises affecting emerging markets. It highlights the fact that the exposures of G10 banks to Asia were typically short-term and to private sector counterparties, especially banks. While derivatives and other off-balance sheet claims increased prior to the crisis, the exposure was still small relative to total claims. Significant exposure differences that existed between creditors and groups of debtor countries are highlighted.

The second part of Chapter 1 considers the risks encountered in the Asian markets. It appears that some creditor banks assumed that their exposure to private borrowers would be protected by an implicit host government guarantee. This assumption may have induced them to take on larger exposures at a lower spread than warranted by normal credit standards. The extraordinary volatility of exchange rates and other asset prices as the crisis progressed made it likely that market and liquidity risks had been underestimated. The interrelationship between different types of risk in times of crisis was an important lesson learned, as was the speed and extent of contagion. In many respects however, the system held up well. Solvency requirements, improvements in prudential regulation, and banks' internal risk management systems allowed creditor banks to weather the problems better than during the debt crisis of the early 1980s. Despite these improvements, there is still room for enhancements to banks' risk management processes and to supervisory approaches and guidance.

Chapter 2 discusses current country risk management practices at G10 banks on the basis of surveys by the Euro-currency Standing Committee and US supervisors. A major lesson is that the concept and measurement of country risk has changed, going beyond the traditional concept of sovereign and transfer risk to include the risks posed by private sector counterparties. Another lesson is the importance of measuring the interrelationship between different types of risk during times of crisis. The high market volatility, the extent of contagion effects, and the speed, with which apparently reasonably mature markets can become illiquid, have surprised many market participants. These experiences point to the need to place greater emphasis on stress testing and scenario analysis.

Chapter 2 also discusses the performance of country risk assessments by rating agencies during the Asian crisis. The very swift and large rating downgrades of the affected countries were unprecedented. The rating agencies acknowledge that there are lessons to be learned from the crisis. Going forward,

they are each taking steps to refine their methodologies in light of the crisis (e.g., weighting more heavily the risks of short-term debt, particularly in the context of a weak financial system).

Chapter 3 analyses the possible impact of the Basel solvency rules for credit risk on the Asian crisis and suggests a review of various elements of the capital rules. While members of the working group performed a number of statistical tests to examine the influence of the risk weights on lending volumes and lending composition, the tests were hampered by a shortage of data and proved inconclusive.

Despite the inconclusive empirical evidence, it is widely accepted that current risk weightings are, at best, a crude indicator of relative risk. For example, the present distinction in the risk weights between short-term and long-term lending does not adequately capture the complexity involved in assigning risk weights to various maturities or types of counterparties. The possibility of a bank having a lower risk weighting than its home country may also be questionable. Criteria used to assign country risk weights could be expanded to include the quality of home country banking supervision and the extent to which macroeconomic and financial data are publicly available.

The limitations of the present weighting scheme have been underscored by the decision of the Basel Committee to undertake a major overhaul of the Capital Accord. The use of internal or external ratings is a possible alternative route for determining risk weights. The further regulatory use of external ratings needs to be carefully researched as the relationship between sovereign ratings and defaults (and expected losses) related to transfer or external liquidity problems has yet to be clearly demonstrated. The working group emphasises the importance of a robust and transparent rating methodology. Thought also needs to be devoted to the treatment of rating differences across agencies.

Chapter 3 also discusses the potential for enhancing the Basel Committee's guidance on large exposures, with a focus on banks' internal risk assessment practices on exposures to bank counterparties. Banks should be required to elaborate the basis for their internal limits. Growth rate as well as levels of exposures should be closely monitored.

Chapter 4 discusses various supervisory approaches to the measurement and management of country risk. The overview demonstrates that the supervisory practices in this area are rapidly changing, evolving from prescriptive rules to a more risk-based approach. Informal sharing between supervisors of these approaches and the information gained from their use could be beneficial. Discussion between supervisors, also involving international financial institutions, of specific developments in country exposures could be supported by the regular publication of BIS reports on exposures by lending countries, whose frequency and timeliness is to be increased. These reports could be further developed to ensure greater consistency in creditor country reporting.

A final section of chapter 4 deals with the international supervisory guidance on country risk, as set out in the Basel Committee's 1982 paper on the management of banks' international lending. The Basel Committee may wish to review this guidance in light of the crisis. Possible areas for

enhancement include strengthening the role of the bank's board of directors and senior management in establishing and monitoring compliance with policies and procedures, improving the measurement and monitoring of country risk, and recognising and measuring the interaction among different risks through stress testing and scenario analysis.

In accordance with its mandate, the working group did not try to evaluate in detail the supervisory lessons of the Asian crisis for debtor countries or their credit institutions. However, in the course of its work, the group was asked to comment on the adequacy of the "Core Principles" for debtor banks in the light of the Asian crisis. The major issues identified by the working group in this regard relate to:

Foreign currency liquidity management: the need for guidelines on liquidity management in stress conditions, closer follow-up of liquidity management.

Credit risk management: the importance of knowing the customer's business, risks associated with directed loan activity, issues of (implicit) guarantees and collateral.

Relationship between different risk categories in times of crisis: the importance of stress testing and scenario analysis.

Clear and conservative accounting and loan valuation rules: as a precondition for adequate credit assessment.

Basel Capital Accord as a minimum standard: the need to tailor capital levels to the riskiness of the bank.

Adequate corporate governance: the role of the board of directors and the management committee of a bank, relationship between the bank and its shareholders.

The Asian crisis has evidenced the need for countries to comply with the "Core Principles". Countries could be encouraged to implement these Principles by tying compliance to preferential risk weightings. G10 countries may also wish to condition their authorisations of foreign bank operations on compliance with the Core Principles.

Introduction

The working group, whose activities were sponsored by the Basel Committee's Research Task Force, was asked by the Basel Committee's to study the possible lessons that could be drawn from the Asian crisis from the perspective of the G10 creditor banks and their supervisors. The G10 countries, and their representatives, that volunteered to participate in the working group, are listed on page one. In the course of its work, the group reviewed existing literature, analysed data and had a number of discussions with specialists from different areas.

Within the general framework of its mandate, the working group focused on two major issues:

- the extent to which the Basel solvency rules played a role in the size and type of banks' exposure to the Asian countries; and
- the possible supervisory lessons for creditor banks on the way they manage their country risk.

On the first issue, the group tried to identify to what extent the Basel Capital Accord's weighting scheme for credit risk had any undesirable effects in terms of size and nature of exposure by creditor banks. Empirical data analysis is brought to bear on the frequently stated contention that favourable risk weighting of short-term interbank exposure was an important contributing factor to the crisis. Other points discussed under this heading are the adequacy of the large exposure rules and the possible regulatory use of ratings.

On the second issue, the relevant documents published by the Basel Committee were reviewed in order to identify possible lessons. Two documents were considered to be especially relevant: the "Core Principles for Effective Banking Supervision" (Basel, September 1997) and "Management of banks' international lending: country risk analysis and country exposure measurement and control" (Basel, March 1982). The group screened the two documents for possible missing elements and for the robustness of their stated principles in the light of the Asian crisis.

The core of the paper is structured along four chapters, with chapters 1 and 2 being more descriptive and chapters 3 and 4 being more policy-oriented. Chapter 1 gives some factual evidence on the crisis and compares it with previous emerging market crises. Chapter 2 addresses broader issues regarding country risk management by banks. It further discusses the rating agencies' measures of country risk (sovereign credit rating) and the implications of the crisis for the construction and use of those ratings. Chapter 3 contains an analysis of the possible impact and weaknesses of the Basel solvency rules for credit risk in light of the Asian crisis. The related guidance on large exposures is also reviewed. Chapter 4 describes the approach of the different G10 supervisors towards country risk.

In the course of its work, the group was also asked to briefly evaluate the adequacy of the "Core Principles" for debtor banks in the light of the Asian crisis. Such an evaluation was viewed as useful in view of the 1998 international supervisory meetings in Sydney. The results of the discussions are included as Annex 1 to the report.

The Asian financial crisis has generated a wide interest in the international community and has resulted in the establishment of several international working groups and in the study of specific issues by existing groups. Some of these groups, together with their main conclusions and recommendations, are listed in Annex 2 to this report. The working group found the report of the Euro-currency Standing Committee's (ECSC) fact-finding group on international banks' use of information and risk management especially relevant for its work.[1] Considerable attention in the paper is therefore devoted to this group's conclusions. The Asian crisis has also produced a vast economic literature on different themes, e.g. the origins of the crisis, moral hazard, the role of the IMF. Without being exhaustive, Annex 5 gives an overview of the major themes discussed in the recent literature.

[1] The working group did not have discussions with bankers, since the ECSC's survey with international banks already addressed the issue of lessons they had learned from the Asian crisis.

1. Overview and characteristics of the Asian crisis

A review of the economic conditions, financial flows and specific events leading up to and lasting through the Asian crisis points both to similarities and to differences with past international crises, such as the 1980s LDC debt crisis and the 1994–95 Mexican crisis. This chapter provides an overview of the Asian crisis and where possible compares and contrasts it with past crises.[2]

(a) Conditions leading up to the crisis

On a macroeconomic level, East Asia had displayed a markedly sustained period of growth prior to the 1997 crisis. In each year from 1993 to 1996, the nine major East Asian countries – China, Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand – posted annual GDP growth rates ranging from 2.1% to 13.5%, with most countries averaging over 6% each year. These countries benefited from growing exports, and their economies gradually opened up for foreign participants. Most economies displayed solid macroeconomic fundamentals, such as monetary stability, few balance of payment problems and relatively low external debt as a percentage of GDP.

Taking advantage of this growth, many foreign companies and financial institutions established footholds in Asian markets. Annual net capital inflows to Asia grew from $50 billion in 1993 to over $110 billion in 1996. Both financial and property markets exhibited particularly strong growth as funds flowed into the Asian economies. Banks headquartered in G10 countries actively sought to capitalise on the growth opportunities in Asia and offered a full array of products and services to local Asian customers. Additional emphasis on Asian expansion was exerted by declining spreads in developed financial markets with G10 banks turning to Asia for higher yields and new markets. Even as initially high returns on investment in the region began to decline, some G10 banks continued to build their presence in Asian markets to position themselves for long-term growth in the Pacific Rim region.

In many cases, foreign capital flows into East Asia contributed to domestic price bubbles, particularly in real estate. Concurrent financial liberalisation fostered growth in financial markets, which experienced their own price bubbles. In addition, the close interrelationships among many domestic commercial and financial entities in Asia may have contributed to poor investment decision-making.

The events surrounding the Asian crisis began in early 1997 with the bankruptcy of several Korean conglomerates, and by Autumn 1997 had generated significantly negative spillover effects into both US and European financial markets.

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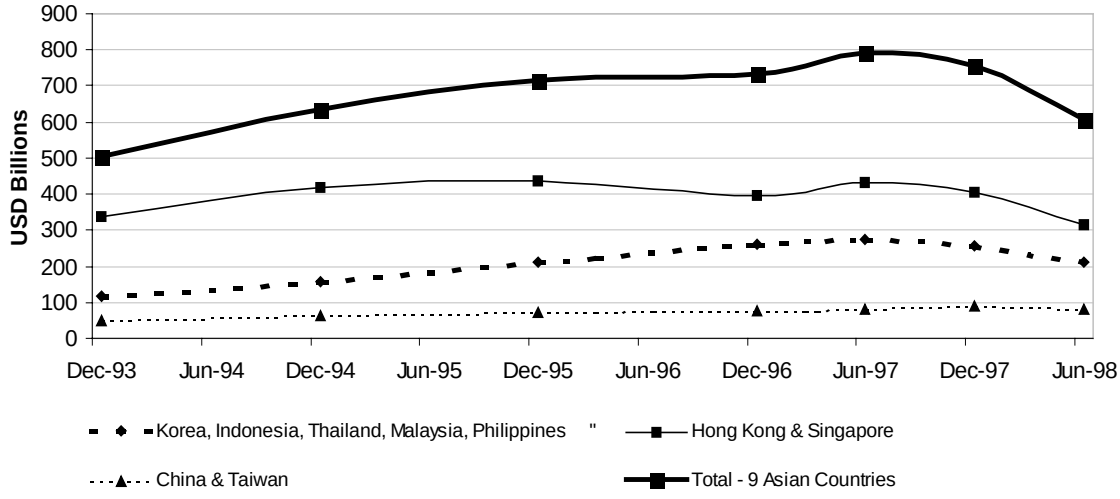
[2] Data used in this chapter are contained in Annex 3.

(b) G10 banks' involvement in East Asia

As shown in Figure 1, from December 1993 to June 1997, BIS reporting banks[3] increased their cross-border claims on counterparties in the nine selected countries from $503.5 billion to $791 billion, an increase of 57%. Growth in claims to the five countries most seriously affected by the Asian crisis (Korea, Indonesia, Thailand, Malaysia, Philippines) was particularly robust over this period, rising 134% (dotted line, second from bottom in Figure 1). This compares with only a 28% increase in the claims on the offshore banking centres of Hong Kong and Singapore and 74% for China and Taiwan combined.[4]

Figure 1
BIS Reporting Bank Claims on Asian Counterparties by Country Group



In the aggregate, most of the claims to East Asian counterparties were short-term, with 77% of total foreign claims to the nine East Asian countries having maturities of one year or less as of June 1997. Figure 2 illustrates that the short-term maturity distribution of counterparty claims differed significantly by two broad groups of Asian countries. Short-term claims to counterparties in the offshore banking centres of Hong Kong and Singapore amounted to roughly 88% of total claims as of June 1997, following a trend from the previous five years. Short-term claims to counterparties in the five seriously affected countries amounted to roughly 64% of total claims, also following a relatively stable trend since 1993.

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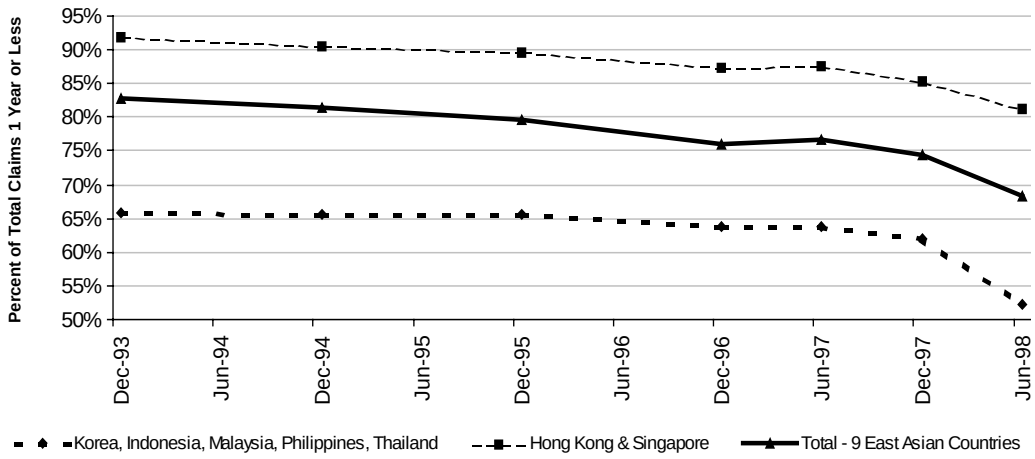
3 BIS reporting banks include banks from the G10 countries plus Austria, Denmark, Finland, Ireland, Luxembourg, Norway and Spain; note that in the following figures and tables, Swiss banks are not included in "European Banks".

4 Data contained in Table 1 of Annex 3.

Figure 2
BIS Reporting Bank Claims on Asian Counterparties -
Claims of One Year or Less as a Percentage of Total Claims

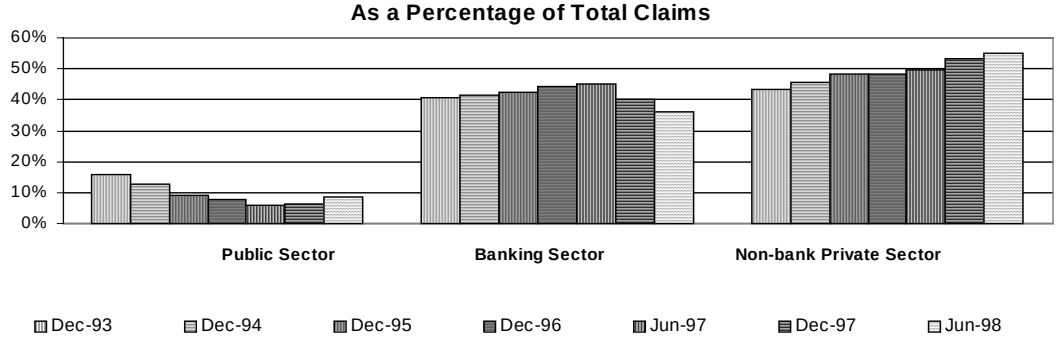


Among the five seriously affected countries, the use of short-term borrowing by local counterparties was greater than that experienced in the Mexican crisis, in which short-term claims made up 51% of total cross-border claims, as of December 1994.

Throughout the 1990s, BIS reporting banks' foreign claims on counterparties in the nine East Asian countries were largely to local banking organisations, ranging from 50% as of December 1993 to 61% as of June 1997. As of June 1997, claims on the non-bank private sector accounted for 36% of all claims while claims on the public sector accounted for only 3% of total claims. However, the figures for total claims on all nine East Asian countries hide significant dispersion in the claims on individual countries. Differences between the banking centre countries, on the one hand, and the five seriously affected countries, on the other, are particularly pertinent. As of June 1997, claims on bank counterparties in the two banking centres of Hong Kong and Singapore accounted for 74% of all claims. This compares with 45% of total claims on bank counterparties in the five seriously affected countries. Claims on the non-bank private sector accounted for 50% of total claims for these five countries. The distribution of foreign claims on Asian counterparties was quite different from that which existed in the Mexican crisis, where, in December 1994, the public sector accounted for 39% of total foreign claims.

Figure 3 illustrates the sector distribution of claims on the five seriously affected countries between 1993 and June 1998. As can be seen, until June 1997 the distribution of claims by sector appears to have been roughly split between the bank and non-bank sectors.

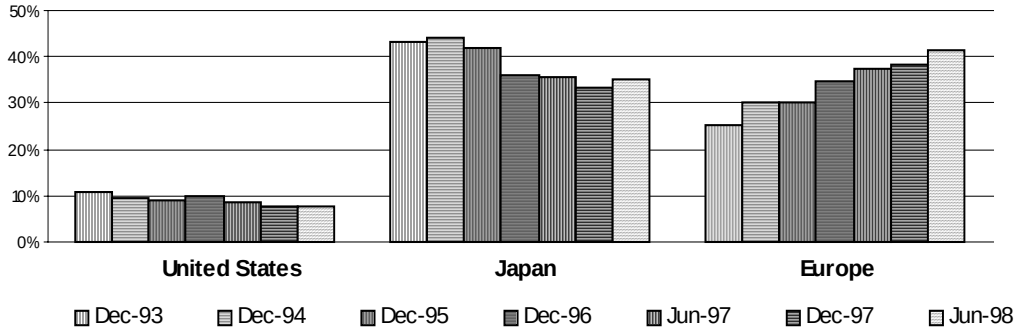
Figure 3
BIS Reporting Bank Claims on Counterparties in Korea, Indonesia, Malaysia, Philippines and Thailand by Sector
As a Percentage of Total Claims



The source of G10 bank funds to Asian counterparties shifted significantly in the years leading up to the crisis. In 1993 Japanese banks accounted for 56% of total claims to counterparties in all nine East Asian countries; European banks accounted for 29%, and US banks 5%. By June 1997 Japanese banks held only 34% of claims on Asian counterparties; European banks expanded their share to 45%, and US banks held steady at 5%.

The source of G10 funds also differs by major Asian country groups. As illustrated in Figure 4 by June 1997 European banks held 37% of all claims on counterparties in the five seriously affected countries. Japanese banks held 35% of all claims, and US banks held 9% over the same period.

Figure 4
Source of BIS Reporting Bank Claims on Counterparties in Korea, Indonesia, Malaysia, Philippines and Thailand
As a Percentage of Total Claims



At present there are generally no comparable data that would present a meaningful view of off-balance sheet (OBS) claims of BIS reporting banks by geographic breakdown. While efforts are under way to provide more data, some discrepancies still exist across countries due to varying ways of measuring current value. US data for the nine East Asian countries show that, prior to the onset of the crisis, OBS claims represented 9% of total US bank claims as of June 1997.

As illustrated in Figures 1 to 4, following the onset of the Asian crisis, foreign claims on Asian counterparties shifted significantly. By June 1998 total cross-border claims on Asian counterparties

fell to $607 billion, from $791 billion in June 1997. Short-term claims had fallen to 68% of total claims, from 77% in June 1997. By June 1998 51% of all BIS reporting country claims in Asia were to bank counterparties, 44% of claims were to non-banks and 4% of total claims were to the public sector.

For the five seriously affected countries, short-term claims as a percentage of total claims fell from 64% in June 1997 to 52% in June 1998. There was also a slight decline in short-term claims (87% to 81%) for the banking centre countries. From June 1997 to June 1998 the sectoral distribution in the five seriously affected countries shifted away from banks (45% to 36%) to non-banks (50% to 55%) and to the public sector (6% to 9%).

By June 1998 European banks had expanded their share of total claims to 50% while Japanese banks' share had fallen to 30%. In the five seriously affected countries, from June 1997 to June 1998 European banks had a slight expansion in their share of claims, from 37% to 41%, with US and Japanese banks holding steady. For the banking centre countries, European banks also expanded their share of claims (49% to 54%), while the share held by Japanese banks fell from 35% to 28%.

A cursory examination of claims by BIS reporting banks on other emerging markets countries is obviously useful when discussing the Asian crisis. The data in Table 5 of Annex 3 show, for the broad regions of Eastern Europe and Latin America, that claims held by BIS banks grew by 60% and 56% respectively from December 1993 to June 1998. In Eastern Europe, short-term claims never amounted to more than 51% of total claims over the period. Generally, for Eastern Europe the sectoral distribution shows the majority of claims being on banks, but with a declining trend in favour of the non-bank private sector. European banks held the majority of claims on Eastern Europe, at over 70%. In Latin America, short-term claims generally accounted for 50-55% of total claims. Over the period, the non-bank private sector increased its share of total claims to over half of all claims, with claims on the public sector falling off. European banks' share of claims rose over the period to just over half, while Japanese banks reduced their share from 10% to 5%. US banks consistently held at least a quarter of all claims on Latin American counterparties.

(c) Risks encountered in Asian markets

G10 banks' pursuit of a wide range of business lines exposed them to a number of risks in Asia. Some of these risks are inherent in banking, and thus were not new. G10 banks became particularly exposed to liquidity risk by participating in a wide range of local markets in which trading for even short-term assets was extremely thin. In addition, as had occurred in the LDC debt crisis and in Mexico, G10 banks held significant short-term claims on Asian counterparties that were denominated in non-local currency. In the aggregate, such claims represented substantial liquidity and foreign exchange risks for

their Asian counterparties in the event of the local currency depreciating, raising the cost of non-local currency debt.[5]

As the data indicate, G10 bank risk exposures in Asia were primarily to banks and the non-bank private sector – a significant difference from past emerging market crises in which public and sovereign counterparty risks dominated. Nevertheless, some foreign investors, including G10 banks, may have assumed that implicit government guarantees existed on these claims in particular on banking sector claims. Accordingly, as in past crises, a significant element of moral hazard may have existed, but with a greater emphasis on an implied extension of government protection to private sector counterparties. Even where implicit guarantees were not assumed, banks in many cases failed to stress test the likely correlations of credit risk across seemingly independent counterparties and hedge providers. The history of Asian economies managing their growth contributed to the belief that the economic and financial system, as an integral unit, could be managed in a downturn. Thus, participants in the local economy and foreign counterparties alike had little incentive to manage potential risks and in many cases assumed implicit government backing of private claims.

Increased involvement in capital markets generated greater market risk for G10 banks than in past banking crises, particularly due to the larger role-played by trading activities and derivatives. Moreover, the volatility of G10 bank claims was higher than in previous years, because more on - and off-balance sheet items were marked to market – option-based contracts generated even sharper price moves. In the Asian crisis, the positions of the G10 banks were far more susceptible to changes in value based on market movements than during earlier crises.

The correlation of market risk and credit risk in the Asian crisis also represented an important risk phenomenon. As the market value of many claims against Asian counterparties rose during the crisis, the financial stability and soundness of many counterparties fell, thus increasing the risk of non-payment by those counterparties. This was especially true with regard to over-the-counter derivative instruments. As mentioned above, BIS data do not exist for derivative claims; however, US data indicate that the market value of OTC derivative claims rose significantly during the Asian crisis. In June 1997 US off-balance sheet claims to Asian counterparties equalled 9% of total Asian claims. US banks' OBS claims rose to 28% of total claims by December 1997. These clearly illustrate that the correlation of market risk and credit risk poses new risk management challenges for all banking institutions.

[5] Since many Asian counterparties expected low exchange rate volatility to continue, they had not hedged their non-local currency liabilities.

Public accounts suggest that legal risk presented challenges during and after the Asian crisis, as some G10 banks encountered difficulties in enforcing contracts with bankrupt or government-assisted counterparties. In some cases, particularly regarding more complex transactions, local counterparties disputed the amount they owed, or declared the contract invalid. As a result, as soon as some difficulties arose, many foreign creditors wound down positions for fear of having no recourse to collect on bad credits. Inadequate or opaque legal systems also hampered the realisation of collateral and the enforcement of netting agreements.

As in past crises, a notable element of the Asian crisis was the transmission of market dislocations to other developing and developed financial markets. However, financial and technological innovation coupled with the globalisation of financial markets has facilitated much more rapid capital transfers than were possible in the past and has led to potentially greater global contagion effects than in the past. It appears that the risks of contagion are more acute than ever before, and G10 banks have learned the lesson that no particular market is "safe" from a crisis. Correlation among markets in time of crisis often belies historical correlations of "normal" times. Accordingly, the value and necessity of thorough stress testing of positions has emerged as a vital lesson.

(d) Risk management techniques

While significant risks existed, there were also significant risk mitigants that played an important role regarding banks' ability to limit the negative effects of the Asian crisis. Solvency requirements of G10 bank supervisors and regulators allowed banks to better weather the problems associated with Asian risks with fewer fears of insolvency than in the earlier debt crisis. For example, US banks' total cross-border claims accounted for 500% of their capital in 1982; in June 1997, total cross-border claims represented 108% of capital. Moreover, the foreign claims of G10 banks were also much better diversified than in past crises, in terms of both countries and types of counterparties.

Disclosure of risks by G10 banks in some countries improved compared with past emerging market crises, but the G10 countries had a diversity of experience in the quality of their banks' disclosures. For those market participants that made their risks more transparent, they and their supervisors were better able to judge risks and temper their actions accordingly. Going forward, in seeking to make their own risks more transparent, G10 institutions will demand clearer risk profiles of their counterparties. More refined market expectations may emerge, ones, which capture all potential risks and thereby reduce surprising and abrupt market moves.

Prudential supervision and regulation also assisted in protecting G10 banks from the Asian crisis. In particular, guidance by supervisory authorities on internal controls, risk management systems, lending limits and country risks aided G10 banks in managing their Asian exposure. Those banks with sound country risk, market risk and liquidity risk management systems appear to have been able to avoid

significant loss. Regulators and supervisors themselves took away lessons from the 1980s debt crisis, and applied them to their respective banks.

While a number of positive findings can be made when one compares the experience of G10 banks in the Asian crisis with past market crises, there is still room for development in the risk management of creditor banks, particularly in understanding the relationship between market and credit risk and developing better stress testing techniques.

2. Country risk management practices at banking institutions

Past international crises have clearly demonstrated the need for internationally active banks to have sound internal processes for managing their country risk exposures. Although most internationally active banks have, over the years, developed increasingly robust systems and processes for managing country risk, the Asian crisis and more recent events in global financial markets have taught G10 creditor banks a number of new and important lessons regarding country risk management (CRM). This chapter reviews the available information on the current status of CRM practices at G10 creditor banks. Both the techniques and the information used by banks to assess country risk are briefly discussed, including the use of country risk ratings available through private sector rating companies

(a) Status of current country risk management techniques

At the time of writing this paper, the working group identified two primary sources of information on the current status of CRM practices at G10 banks. One source consisted of the findings of a survey of large banking institutions conducted in 1998 by a working group of the Euro-currency Standing Committee (ECSC[6]). The other source was a report of the findings of a horizontal review of US institutions conducted in 1997 and 1998 by the US Interagency Country Exposure Review Committee (ICERC).[7]

ECSC report. In 1998 a working group of the ECSC surveyed more than 50 G10 banking institutions to ascertain whether: (1) banks had the information they needed to assess the risks associated with their exposures to Asia; and (2) the extent to which the banks effectively incorporated their

6 This committee has since been renamed the Committee on the Global Financial System (CGFS).

7 In 1978 the Federal Reserve Board, the Office of the Comptroller of the Currency and the Federal Deposit Insurance Corporation (the US banking supervision agencies) established the ICERC to assess transfer risk and to ensure uniform treatment in US banks. The functions of the ICERC are explained in more detail in chapter 4. In addition to these reports, the Institute for International Finance released its Report of the Task Force on Risk Assessment in March 1999, but this report was issued subsequent to the conclusion of the Working Group's research efforts, and thus, did not impact the findings in this review.

assessments into their risk management frameworks and lending decisions. The working group also met risk managers from four internationally active G10 banking institutions. The results of this effort were published in September 1998. While the ECSC survey was not conducted from a supervisory perspective and may have involved several biases in sample selection, it does, nevertheless, provide a number of useful insights.

The survey highlights different practices with respect to the integration of country risk analysis into banks' risk management framework. For some banks, country risk analysis leads to the ranking of countries by risk categories; ceilings on credit for individual counterparties and exposure limits for countries are set according to these categories. Some other banks also consider the risk on a correlated group of economic entities and set limits on country groups, although they recognise that such contagion effects are difficult to measure. In assessing the adequacy of spreads, banks rely on the internal rating process; however, banks' pricing policies also involve other factors, most fundamentally the "market" situation (and in some cases the judgement provided by the credit rating agencies due to their influence on the market), a cost assessment of any compulsory provisions, the relations with the counterparties, the total amount of credit extended to the country and the relative market shares.

ICERC report. Another source of information on the current state of banks' country risk management was a report summarising a horizontal review of US institutions conducted in 1997 and 1998 by the US ICERC, released in December 1998. In summary, the ICERC report found that, while CRM processes and practices vary among banks, all major internationally active US banks have formal CRM programmes. At these institutions, most CRM programmes are centrally managed and include board-approved policies and formal internal country risk monitoring, reporting and limiting mechanisms. In general, CRM was found to be integrated with global credit risk management and responsibility for the function is assigned either to a senior risk officer or to a high-level country risk committee.

Country credit risk assessments conducted at most large banks include the use of both internal analyses prepared by country officers and external analyses prepared by rating agencies, consultants, and other financial institutions. All banks were found to assign formal country risk ratings, with most covering broad definitions of country risk, including transfer risk and local currency risk. In some cases, indigenous sector and industry risks are assessed. The ICERC report also found that most banks apply country risk ratings to all types of credit and investment risk exposures, including local currency lending. In general, country risk ratings are integrated with the bank's commercial credit risk rating systems, with country risk ratings generally taking precedence over commercial credit risk ratings. Almost all institutions surveyed by the ICERC review team used their commercial allowance for loan loss (ALLL) methodologies to cover their country risk exposures, with few making special country risk ALLL provisions.

In some cases, banks may compare internal country risk ratings with the sovereign credit ratings of the principal credit rating agencies. However, they generally do not use rating agency assessments to validate their own internal analyses. Rather, rating agencies sovereign credit ratings, as well as the published analysis underlying those ratings, are considered along with many other factors when developing banks' internal risk assessments and ratings.

In setting country risk limits, most large internationally active banks use a value-at-risk limit for managing the market risk of trading account exposures. Credit limits on lending arrangements are generally not so scientifically based. Few institutions were found to have country risk sub-limits for insured/uninsured exposures, tenors, products or types of country risk exposures. In addition, few institutions had formal regional concentration or contagion limits, although some may have informal systems for assessing Latin American and, more recently, Asian exposures.

While the ICERC report only focuses on US institutions, members of the working group believe that various elements of the CRM process identified in the report may also exist at other G10 institutions.

(b) Lessons learned regarding country risk measurement and management

Since the Asian crisis, several studies have tried to identify appropriate lessons learned in the area of country risk measurement and management. Studies targeting those lessons most pertinent to G10 creditor banks include the ECSC survey and an internal review by supervisory staff of the Federal Reserve.[8]

In several cases, these two efforts uncovered similar lessons regarding CRM. A particularly pertinent finding is the effect that the globalisation of financial markets has had on the concept and measurement of country risk at creditor banks. Given more extensive dealings with foreign corporate customers and counterparties, the concept of country risk is expanding well beyond its traditional scope that primarily encompassed only sovereign risk and transfer risk (i.e. the ability or willingness of a sovereign government to honour its cross-border debts and to make available foreign exchange so that otherwise viable local debtors could meet foreign-denominated cross-border claims). In past international crises such as the 1980s LDC crisis and the 1994 Mexican debt crisis, transfer risk was the primary concept underlying country risk assessments because the major exposures of G10 banks were sovereign in nature. However, the expansion of G10 creditor claims against foreign commercial

[8] In general, the Federal Reserve's review found that risk management systems and processes at US banks worked as expected. While some Asian credit losses were incurred, the bulk of losses incurred by US banks at the time of the Asian crisis arose primarily from the contagion effects to other markets, most notably in developed country equity markets and in sovereign non-Asian emerging market debt obligations. Indeed, US banks were found to have identified Asia as an area of risk up to 18 months prior to the crisis and adjusted direct exposures accordingly.

entities has moved banks to broaden their concept of CRM to incorporate the potential default of foreign private sector counterparties arising from country-specific economic factors.

Importantly, banks must increasingly identify how foreign country developments can affect the credit risk of individual foreign counterparties. In the past, banks may have treated all exposures in a given country as having the same rating as assigned to the sovereign country. However, the Asian crisis, as well as other recent developments, has moved banks to separately identify individual foreign counterparties that are more exposed to local country conditions than others. For example, foreign counterparties with healthy export markets or whose business is tied closely with supplying developed country manufacturing entities may have significantly less exposure to local country developments than do other foreign counterparties. Accordingly, both banks and supervisors must increasingly focus on making such distinctions among counterparties.

Banks rely largely on publicly available data in deriving their risk assessments. In line with its mandate, the ECSC effort found a particular need for more disclosure of the foreign currency reserves and forward market positions of the monetary authorities, the consolidated indebtedness of private sector borrowers, derivatives exposures and short-term debt balances in order to improve banks' internal risk assessments. In considering this observation from the ECSC report, the working group discussed the merits of whether a capital risk-weighting structure could be devised so as to provide incentives for emerging market countries to provide for better disclosure and access to macroeconomic and financial data. For example, higher risk weights could be assigned to countries that do not disclose the relevant information that would facilitate better-informed decisions by lenders. The working group understands that the Basel Committee's efforts are already considering compliance with the IMF's disclosure standards as a risk-weighting criterion.

Another important lesson identified in both of these reviews was the importance of the interrelationships between market risk and the credit risk of emerging market derivatives counterparties. In many cases, market volatility increased G10 creditor banks' exposures to local counterparties, while at the same time the credit quality of the local counterparty deteriorated. Based on such lessons, institutions appear to be enhancing the resources used in stress-testing emerging market counterparty exposures.

Both studies also indicated that banks felt that their country risk assessments needed to take better account of the potential loss of liquidity in a crisis and of market contagion effects. Some banks interviewed by the ECSC working group noted that they had been surprised by the speed with which an individual country's access to international financial markets had deteriorated and by the loss of market liquidity. Contrary to expectations, their monitoring systems had sometimes not given them sufficient warning to arrange for an orderly exit from their country risk exposures. Banks conceded

that they had overrelied on historic volatilities of the foreign exchange values of the Asian emerging market countries' currencies in their measures of potential credit exposure and value-at-risk.

Banks found that models estimated with historical data failed to predict accurately the extent of possible losses and sometimes led to an underestimation of risk. Valuations may have been less than rigorous in some countries due to the lack of a long-term government yield curve. Greater emphasis needs to be placed on stress testing and scenario analysis.

In response to the Asian crisis and more recent events, banks appear to be making efforts to strengthen country risk monitoring and analysis in an effort to identify problems earlier and to adjust exposure in a prompter and more systematic fashion. The monitoring of risk has tended to become more regional in focus rather than being done country by country. Banks have highlighted the need to incorporate in their analysis of country risk not just transfer risk, but also credit risk associated with private sector counterparties, the potential drying-up of liquidity and contagion risk. Some banks are also seeking to better integrate their analysis of credit and market risk. Overall, the Asian crisis identified a need at some banks to centrally assemble and analyse country risk information.

(c) Performance of rating agency country risk assessments

As discussed above, most internationally active G10 creditor institutions utilise, in some way, country risk assessments published by public rating agencies. The working group reviewed the performance of these assessments and related literature and met representatives of several of the major credit rating agencies to identify lessons that they are drawing from the Asian crisis.

Sovereign ratings represent the rating agencies' view of the relative likelihood that a central government will default on its obligations. With rare exceptions, sovereign ratings place a ceiling on the ratings assigned to borrowers of the same nationality. All five of the "nationally recognised statistical rating organisations" designated by the SEC in the US have outstanding sovereign ratings on a wide array of countries. Analysis of the ratings of the two largest agencies (Moody's and S&P) has shown that that six factors explain more than 90% of the variation in credit ratings: per capita income, GDP growth, inflation, external debt, level of economic development and default history. While the two major agencies' sovereign ratings are strongly correlated with credit spreads in the market due to similar interpretations of publicly available information, they also independently affect credit spreads.

One of the more striking features of the Asian financial crisis in the second half of 1997 was the very swift and large rating agency downgrades of the affected countries. Among the three largest credit

rating agencies, Thailand fell by an average of four rating notches;[9] Indonesia an average of nearly five rating notches; Korea an average of more than nine rating notches, or more than three letter grades. Rating agencies came under criticism from a number of quarters either for having been too lenient in their initial ratings, or for having been too pessimistic in their revisions, or both.

Credit ratings: July 1997 – January 1998

	Fitch/IBCA		Moody's		S&P	
Thailand	NA		7/1/97	A3	7/1/97	A
			10/1/97	Baa1 (-1)	9/3/97	A- (-1)
			11/27/97	Baa3 (-3)	10/24/97	BBB (-3)
			12/21/97	Ba1 (-4)	1/8/98	BBB- (-4)
Indonesia	6/21/97	BBB	6/21/97	Baa3	6/21/97	BBB
	12/22/97	BB+ (-1)	12/21/97	Ba1 (-1)	10/10/97	BBB- (-1)
	1/8/98	BB- (-3)	1/9/98	B2 (-5)	12/21/97	BB+ (-2)
					1/9/98	BB (-3)
					1/27/98	B (-6)
Korea	6/21/97	AA-	6/21/97	A1	6/21/97	AA-
	11/11/97	A+ (-1)	11/27/97	A3 (-2)	10/24/97	A+ (-1)
	11/26/97	A (-2)	12/10/97	Baa2 (-4)	11/25/97	A- (-3)
	12/11/97	BBB- (-6)	12/21/97	Ba1 (-6)	12/11/97	BBB- (-6)
	12/23/97	B- (-12)			12/22/97	B+ (-10)

Based on the long history of Moody's and S&P rating transitions for US corporate bonds, each of their transitions in credit ratings described above would be viewed as extremely low probability events, ranging as low as one in a thousand. Not only have credit rating changes of this magnitude been very rarely observed for US corporate ratings, but they are unprecedented in the field of sovereign ratings. By stark contrast, the Mexico crisis of 1994/1995 only resulted in a single notch downgrade by S&P (from BB+ to BB), and no change at all by Moody's.

While the major rating agencies vigorously defend their current ratings, they have identified lessons to be learned from the Asian financial crisis, and have acknowledged, either explicitly or implicitly, inadequacies in their rating methodologies prior to the crisis. Risk factors to be weighted more heavily

[9] Rating notches are the gaps between ratings: for example, the gap between A+ and A– is two notches, between A+ and BBB+ three notches.

going forward include the burden to the sovereign of the contingent liabilities of a weak banking system, the adequacy of bank supervision, the vulnerability to a liquidity crisis due to concentrations of short-term debt for otherwise creditworthy borrowers, the increased stress in crisis when there are relatively low levels of disclosure and transparency in policy, and the likelihood of contagion from other countries.

There are a variety of reasons to have less confidence in sovereign credit ratings than agency credit ratings for US corporate bonds. Studies have shown that there is substantially more disagreement between the agencies in their assessment of credit risk for low-quality sovereigns than for low-quality corporate credits. This may be because of greater uncertainty in the measurement of this type of risk, due to the subjectivity of many aspects of sovereign risk measurement. With sovereign credits, creditors lack the ability to enforce payment in courts, and factors that affect the willingness to pay – such as stability of political institutions, social and economic cohesion, and integration into the world economic system – are as important as those affecting solvency, or ability to pay.

Further, the relatively small number of sovereign credit ratings over extended periods of time does not permit confidence in the empirical estimation of the relationship between those ratings and the likelihood of default and the severity of expected losses. Other than a brief period of activity in the 1920s, only since the late 1980s have weaker sovereign credits found market conditions sufficiently favourable to publicly issue bonds in international credit markets. At the end of 1985 only 16 countries had sovereign credit ratings from the major agencies, and most were highly rated OECD countries. By the end of 1997 nearly 100 countries had been assigned sovereign credit ratings, more than 40 of these within the preceding two years.

Pricing in the market for sovereign credits has usually reflected a recognition of the difficulty of assigning sovereign ratings relative to US corporate ratings. The yields to maturity of sovereign bonds typically show a much lower correlation with credit ratings than do the yields of corporate bonds. Bonds issued by emerging market countries also typically trade at higher yields than comparably rated US corporate bonds. Thus, the investor community not only frequently disagrees with the agencies over the rank-ordering of credit risks, but also appears to assign a higher probability of default (or greater loss in the event of default) to sovereigns than to similarly rated US corporate bonds. While these distinctions widen in extraordinary times of crisis in emerging markets, they also exist during more normal times.

Errors in sovereign credit ratings came in bunches in the Asian financial crisis. A number of risk factors were underestimated for a number of countries, by all the major rating agencies. Prudent use of the sovereign ratings of the major credit rating agencies may require that they not be viewed as equivalent to ratings for US corporate obligations. Investors in the private sector have long been more pessimistic about the expected losses of sovereign bonds relative to similarly rated US corporates. Of

course, the existence of problems with the use of agency ratings for capital requirements is not the same as evidence of the superiority of alternative benchmarks. But further study of the relative performance of external credit ratings versus implementable alternatives may be appropriate.

3. Role of the Basel Capital Accord and related regulations

This chapter examines whether the Asian crisis points to any particular deficiencies in the structure of the Basel Capital Accord, specifically in respect of counterparty risk weights. It also examines the adequacy of the large exposures limits and guidelines. The first part reviews evidence on various questions, while the second part summarises the findings and indicates some policy conclusions.

(a) Credit risk capital requirements

(i) Interbank risk weights

The Asian crisis has not, in itself, called into question the overall adequacy of the capital cushion at European and North American banks.[10] However, examination of the structure of the Basel risk-weighting rules has been prompted by a number of observations regarding the pattern of lending by G10 banks to Asian counterparties. Principal amongst these have been the high rate of interbank and short-term lending to Asia.[11]

The two points taken together have raised the question of the influence of the 20% risk weighting for sub-one-year interbank lending. Specific worries are whether this has affected the maturity of interbank lending in 'Zone B'[12] countries, and whether it has resulted in a greater share of lending being directed at banks rather than at corporates (whether in Zone A or Zone B countries). Concern about the effect on the maturity of lending is particularly acute in view of the key contribution made to the liquidity crisis by the volume of short-dated external liabilities in Asian countries.

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[10] The table in Annex 4 (sourced from OECD) shows that exposures to the five Asian crisis countries amounted to 5.9% of end-1997 capital for US banks, 13.1% for Canadian, and 14.7% for European banks. The situation for Japanese banks is much more serious, with exposures amounting to 47% of capital. As the table shows, the situation for European and Canadian banks is much less comfortable once other emerging market lending is added in.

[11] See annex 3 for further information on lending patterns.

[12] The current risk weighting framework in the Basel Accord divides sovereigns into two categories – those which are members of the OECD (or which have a General Agreement to Borrow arrangement with the IMF), and those which are not in this category. Non domestic currency debt of the OECD group – 'Zone A' - receives a 0% risk weight (ie zero capital requirement), compared with 100% risk weight (8% capital) for the non-OECD group – 'Zone B'. Lending to banks which are incorporated in Zone A receives a 20% risk weighting (1.6% capital), regardless of maturity, whilst lending to banks in Zone B only receives this weighting if the maturity is less than one year. Longer term lending to Zone B banks is weighted at 100% - ie a five fold increase in required capital.

Members of the working group conducted a number of statistical tests to see if they provided evidence on this question. For the basis of the tests, the BIS semi-annual statistics were used, which have the drawback that, although they indicate a maturity breakdown and a sectoral breakdown, they do not combine the two. In other words, data on the maturity of interbank lending only were not available.

In brief, the exercises and their results were as follows:[13]

(a) *What effect on the maturity of overall lending is produced by a change in status from Zone B to Zone A?*

At the time of conducting the tests, four countries had switched from Zone B to Zone A. The pattern of lending to these countries was analysed, both graphically and using regressions. The evidence from this exercise was inconclusive. It was hampered by a lack of observations: not only have few countries changed status, but most have done so very recently, meaning that there are few observations following the change. Moreover, two of the countries were afflicted by currency crises within a short time of gaining Zone A status, making it difficult to attribute changes just to a risk-weighting influence.[14]

(b) *What difference is there in the maturity of lending to Zone A countries with the same credit rating as Zone B countries?*

The maturity distribution of lending to countries with the same credit rating might reasonably be expected to be similar. Pairs or small groups of countries that shared very close or identical ratings for substantial periods, but which had different risk weightings, were picked out (see charts 1-7 in annex 4). Their ratios of sub-one-year loans were then compared. The balance of the evidence from this exercise was supportive of the proposition that, in the case of relatively highly rated Zone Bs, their Zone B status kept the proportion of sub-one-year loans at a higher level than for similarly rated Zone As. However, the evidence was more mixed lower down the rating scale. Once again, it should be emphasised that the number of examples is small, meaning the influence of other factors cannot be ruled out.

(c) *What impact did a change in status from Zone B to Zone A have on the regional share of interbank lending captured by the new Zone As?*

This exercise compared the share of regional interbank lending captured by new Zone A's after their change in status with the predicted share of lending based on the previous trend.

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[13] Exercises a), b) and d) were conducted by the Bank of England. Exercise c) was conducted by the BIS.

[14] The Swiss National Bank ran this test and the second test using data just for Swiss banks' lending. The exercise was interesting because the Swiss rules impose a more finely differentiated weighting structure than just the 20%/100% distinction. However, the results of the exercises were very similar to those reported here.

The result was that all four countries experienced a rise in their share, in three cases statistically significant. However, this may be the result of a change in demand for lending rather than supply, as OECD rules require capital account liberalisation.

(d) *Has the concessional weight for interbank lending for both Zone A (all maturities) and Zone B (short maturities) resulted in a greater volume of lending being directed to banks rather than to corporates?*

This was addressed by examining the relative volumes of lending by BIS area banks to banks and the non-bank private sector in outside area countries. BIS data back to June 1985 were used, giving a picture of the relative volumes both before and after the introduction of the Basel Accord. The results showed that the relative proportion has remained fairly steady, with no marked increase at around the time of the Basel Accord.

(ii) Other risk weights

The Asian crisis – unlike earlier crises – was not an instance of overlending to sovereigns. However, for the sake of completeness, the proposition that the Zone A/Zone B distinction may have affected the proportion of lending going to the government sector in Zone A countries relative to the distribution in Zone Bs was also examined. This question was again addressed by taking pairs or small groups of similarly rated countries and examining whether the public sector of the Zone A countries within the pairs/groupings received a higher share of the total BIS lending to that country than their Zone B counterparts.[15] This turned out to be true for four out of the six pairs/groups that were examined. However, it was also the case that the share of GDP accounted for by government spending was uniformly higher in the Zone As than in the Zone Bs, perhaps indicating that there were relatively more lending opportunities in the Zone A public sectors.

The other possible question mark over the risk-weighting framework is the 50% risk-weighting cap on exposures to derivatives counterparties. Since there is no counterfactual against which to test the effect of the 50% risk weighting, it is difficult to say how far this might be distorting business decisions. The very limited data available for off-balance sheet versus on-balance sheet business (virtually only from the US) suggest that the scale of derivatives business in various markets is aligned with the size and sophistication of those markets, rather than being distorted in any obvious way. That said, chapter 1 of this paper has already pointed out that market and credit risk were interrelated in the Asian crisis, and that more complex transactions attracted greater legal risk. The Brockmeijer report on banks' interactions with highly leveraged institutions has already highlighted the question of the 50%

[15] Exercise conducted by Bank of England.

weighting; this is being considered during the course of the consultation on amending the Basel Accord.

(b) Large exposures

Existing policy on large exposures is set out in the January 1991 Basel paper on measuring and controlling large credit exposures.[16] Precise limits are laid down only for large exposures defined in a narrow sense – i.e. single counterparties or related counterparties. The Asian crisis proved painful for most bank lenders because of the widespread contagion which brought sharp deterioration in regional creditworthiness; the working group is not aware that there have been major write-offs vis-à-vis single counterparties (although banks have highlighted the need for comprehensive consolidated accounts in order to better identify company linkages). Therefore, the working group did not have any particular observations with regard to the adequacy of the limits on single counterparties/related counterparties.

The influence of the absence of formal limits on exposures to bank counterparties on G10 banks' behaviour may be worth highlighting, given the size and growth of interbank lending to Asian banks whose credit standing has been severely affected by the crisis. However, the working group felt that the adoption of policies prescribing strict quantitative limits on interbank exposures would continue to be inappropriate given the widely different circumstances of individual banks. Rather, any strengthening of policy recommendations in this area should instead emphasise the responsibility of a bank's management and its supervisor to ensure that the bank has appropriate internal policies and limit structures vis-à-vis all its counterparties.

The Asian crisis was a clear instance of a collapse in credit quality of entire countries – indeed almost an entire region – and it was this widespread contagion which caused significant credit losses at a number of G10 banks. However, the working group felt that the stance taken in the 1991 paper on this sort of credit concentration remained valid – that rigid regulatory rules would run up against the difficulty of setting precise definitions of sectors or regions, and that much depends on the expertise of the bank and the size or stability of the sector or region concerned. Indeed, in some lights the lending behaviour of G10 banks, in particular the very rapid increase in credit granted by European banks, may be taken to illustrate the dangers of ill-judged diversification. However, the crisis has reinforced the fact – already recognised in a number of places – that banks need to have appropriate internal policies to deal with regional exposures. As far as the regulatory guidelines are concerned, possibly the main missing element is a suggestion that bank management and supervisors need to look not only at the absolute levels of credit concentrations relative to capital, but the evolution of all exposures.

[16] This policy takes the form of hard-and-fast limits in a number of countries, notably in the EU through the "Large Exposures Directive".

Although, starting from a low initial level, exposures to certain regions or sectors may not be alarming, the speed with which they build up may indicate inadequate credit assessment.

The existing large exposures guidance does of course focus solely on credit risk, whereas the Asian crisis involved the complex interrelationship of credit, market and liquidity risks. Given that these interrelationships are still being understood, it may be premature to consider new regulatory rules in response to the crisis. Rather, banks should be encouraged to have appropriate internal policies to respond to these risks. Bank management and supervisors should devote adequate attention and resources to growing, highly profitable or high-risk business activities.

(c) Summary of findings, policy implications and recommendations

(i) Counterparty risk weights

Episodes prior to the Asian crisis, as well as the Asian experience itself, suggest that the current OECD-based distinction in the Accord may no longer be a particularly good indicator of relative risk. This issue is being examined by the Basel Committee in the context of its review of the Capital Accord. One possible alternative to the current framework is the use of a ratings-based framework. In the light of the evaluation of rating agency performance, the working group would emphasise the following:

- The importance of a robust ratings methodology which is transparent (at least to supervisors) and of confidence in the credibility of ratings on a sector-by-sector basis; expertise in corporate ratings may not be directly transferable to sovereign ratings. As described in chapter 2, there is a very limited track record of sovereign ratings except at the prime end of the scale. This may have implications for the design of the risk buckets and weights – supervisors may feel more confident about the basis for differentiating capital weights at the higher end of the sovereign weightings scale until a longer track record lower down the scale is established. The limited track record of sovereign ratings would also have implications for the way that supervisors evaluate the robustness of the ratings process – backtesting for instance would largely be unavailable as a tool.

- The need for careful thought to be devoted to the rules for dealing with rating differences across agencies. Unless the lowest rating is used, or certain agencies' ratings are discounted according to historical experience, the tendency may be for more lenient agencies to determine risk weightings. Differences in scales amongst rating agencies may be particularly problematic when the ratings come from agencies that are approved by one national authority but not another: e.g. the ratings of agencies recognised by Japanese authorities headquartered in Japan are more than one letter grade higher on average than those of US

rating agencies for jointly rated issues. It is worth noting that at the moment only two agencies publish information on the historical default rates associated with their ratings. The extent to which incentives of the rating agencies may be distorted by the use of their product in regulatory practice should also be considered.

The particular focus in the context of Asia has perhaps been more on the risk weights for interbank lending. Lack of data and observations meant the working group could not establish firm evidence one way or another on the question of distortions induced by the risk weights, but some of the tests offered some support to the possibility of the maturity of lending being affected.

The question of interbank risk weights is also being reviewed in the context of the Basel Capital Accord review. The working group's observations in this area, on the basis of an analysis of the crisis and discussions with rating agencies and others, are as follows:

- The possibility of banks having a lower risk weighting than the sovereign should be reconsidered. The sovereign weighting would more logically constitute a floor for the weighting of banks (or any other corporates).
- Although banks will have an individual risk profile, the possibility of changes in creditworthiness will also crucially depend on the adequacy of their supervision. This should also logically act as a floor under a bank's risk weighting. The working group recognises that there is the substantial practical problem of how to assess the quality of supervision, but, if and when some broad classification of supervisory systems against the "Core Principles" appears feasible, linkage to the interbank risk weights would be a logical step.
- Although in general there is a relationship between risk and maturity of lending, this is liable to break down where substantial amounts of short-term liabilities relative to assets are built up. This will be particularly true in the case of bank obligations where there are insufficient resources in the overall system to provide liquidity to banks (especially foreign currency liquidity). Risk bucketing of bank lending needs to take this dimension into account: options would be to abolish the maturity distinction altogether; to bring the threshold forward to reduce the possibility of new information subverting the bank's credit assessment; or to limit the concession on short-term interbank lending to borrowers which are subject to an appropriate regulatory regime limiting liquidity mismatches. The latter would of course be subject to the same problem of evaluation as overall adherence to the "Core Principles".

(ii) Large exposures

The guidance contained in the 1991 Basel paper on Large Exposures remains largely valid. Despite the Asian crisis being an example of the dangers of substantial exposure on a geographic basis, the impracticality of applying rigid rules remains. The working group's observations are:

- There is a need for a very strong message on the importance of effective internal controls on large exposures, particularly in respect of counterparties exempt from the formal limits and in respect of exposures, which represent concentrations of risk to geographic regions or industrial sectors.
- Monitoring of sectoral and geographic exposures needs to extend to the pace of growth in such exposures and not just the current level.

4. Supervisory approaches to country risk measurement and management

This chapter summarises the approaches taken by G10 supervisors in assessing bank country risk exposures and reviews current international supervisory guidance on country risk management (CRM). It concludes with a number of recommendations regarding supervisory review of CRM practices of banks

(a) Evolution in supervisory approaches

Bank supervisors have developed a number of approaches for assessing the adequacy of banks' CRM including the collection of information on banks' country risk exposures and the evaluation of the adequacy of banks' loan loss provisioning and allowances for country risk. These supervisory approaches continue to evolve in the light of experience. In some cases, supervision has become more forward-looking – for example, through closer monitoring of countries that are considered at risk but have not formally sought a restructuring of their obligations.

The introduction of a more risk-based approach to supervision has been accelerated by the experience of the Asian crisis. The crisis also emphasised the limited comfort that can be drawn from collateral – the value and marketability of which often became seriously impaired following the onset of debt servicing problems and the associated economic downturn.

(b) Practice in G10 countries

Developments in the approach to the supervision of country risk in several G10 countries are described below.

Belgium. The Banking and Finance Commission (CBF) has recently reviewed its approach to country risk and the new arrangements are due before the end of June 1999. They focus on countries significant to the Belgian banking sector and incorporate a more forward-looking and proactive approach. There will also be a more active dialogue with the banks on their risk assessments of countries and the banks are required to take on more responsibility. While the CBF determines a

number of minimum qualitative standards in respect of country risk, banks are allowed to determine the exposure basis and their own provisions within a band set by the CBF. There are four such bands (10%-20%, 20%-35%, 35%-50%, 50%-60%), going from low risk countries to high-risk countries. The country risk may already have materialised, or it may be developing. In assessing this risk, the CBF takes into account the social, political, economic and financial situation in the country concerned. Country risk reports prepared by the National Bank of Belgium, are an important element in this assessment. The credit institution must make larger provisions if it considers that its individual exposure to the country concerned, justifies a higher degree of provisioning. If a credit institution fails to comply with the cover ratios, it has to deduct immediately from its own funds, the amount of the cover deficit.

Canada. The current policy on country risk management by the Office of the Superintendent of Financial Institutions (OSFI) dates from 1 November 1995. Exposures incurred on or after this date are not subjected to prescribed provisioning levels. For exposures incurred before 1 November 1995 banks are required to maintain minimum provisions of 35% against exposures to countries on a designated list. Banks are required to have processes and procedures to assess country risk, but exposures are only reviewed by OFSI if they are of material concern. Banks are expected to make specific provisions against country risk on a prudent basis. The OSFI does not itself carry out internal assessments of country risk, and does not produce country ratings. Off-balance sheet country exposure is not treated any differently to other off-balance sheet exposure.

France. Since 1984, credit institutions with significant exposures to countries experiencing debt-servicing difficulties have been subject to a detailed annual survey covering their exposures and provisions. Claims on non-resident nationals of countries deemed at risk are also included. The survey has been adapted on several occasions to reflect market developments. The results of the surveys have provided benchmarks for agreeing provisions with individual institutions. Interest in arrears for more than 90 days must be fully provisioned. Short-term commercial loans and guarantees are excluded from the provisioning base. Provisions agreed under these arrangements are partially tax deductible.

More fundamental changes were introduced in June 1998 with the object of making institutions more responsible for determining the level of their provisions. The Commission Bancaire no longer provides average reference provisioning ratios. Instead, institutions are expected to establish adequate internal systems for appraising, monitoring and controlling their international lending in conformity with principles set out in 1997 regulations. The geographical scope of the annual survey has been extended to include all countries outside the EEA and the G10. This brings into the net countries that could encounter future debt servicing problems rather than just those that have rescheduled their debt or are seeking to do so. The quality of country risk reporting has also been improved with more detail on residual maturities and the sector of the borrower.

Germany. The German supervisors have adopted an approach for monitoring banks' exposures and provisioning which places the responsibility for country risk management and adequate provisioning firmly with the banks themselves. Valuation requirements are subject to the Commercial Code and generally accepted accounting principles. Therefore, provisioning against country risk can take the form of specific adjustments to individual exposures, or be based on standardised adjustments to claims on a country or on a group of countries judged to represent equal risk. Both actual and latent risks are taken into account. Neither the Bundesbank nor the Federal Banking Supervisory Office (FBSO) draws up formal country rankings or makes recommendations in this respect.

Detailed statistical returns on exposures to borrowers domiciled outside Zone A are monitored regularly and auditors' reports provide information on banks' management and control of their country risk. The auditor must discuss the risk of country exposure not only in terms of assessment criteria (classification, valuation ratios) but also with reference to information on credit limits for individual countries, portfolio diversification and value adjustments. The auditor's report and the data submitted form the basis of the supervisor's dialogue with the bank on country risk. Since the beginning of the Asian crisis, German supervisors have been in frequent contact with the management and auditors of banks with significant emerging market exposures.

Italy. Since 1993, banks have determined country risk provisioning levels with reference to common guidelines. These guidelines represent minimum requirements and are calculated by means of a classification of Zone B countries, periodically agreed by the Italian Banking Association with the approval of the Bank of Italy, which makes reference to a set of indicators specified by supervisory regulations. Banks report their overall level of provisions, with a breakdown by country of unguaranteed exposures to Zone B borrowers, twice yearly. Banks are required to meet the minimum requirements for country risk provisioning on a global basis. Requirements are adjusted semi-annually; substantial losses must be reported quarterly.

The methodology for calculating the minimum country risk provisioning requirements has recently been reviewed. In the definition of the risk classes, the weight given to market indicators (including the ratings of the main international agencies) has been increased reflecting the growing importance of portfolio investment in emerging market countries and the degree of liquidity and volatility of such assets. Banks are also allowed to take better account of qualitative aspects including considerations on the country's institutional arrangements. Based on the score derived from the chosen indicators, a six-level classification of Zone B countries is currently identified requiring provisions of 15, 20, 25, 30, 40 or 60% of the nominal value of credits. The funds set aside enjoy partial tax deductibility. Exposures related to short-term trade credits receive a reduced weighting. The new classification is being phased in gradually, commencing with banks' reports relating to end-1998 exposures: for the first two reports the minimum country risk provisioning requirements will amount to 70% of the full value.

***Japan*.** In response to the early 1980s debt crisis, Japanese supervisors began in 1983 to provide guidance on provisioning levels against country exposure, the recommended ranges being raised on several occasions up to 35%. However, specific provisions in excess of 1% of exposure were not tax deductible, tax relief in excess of this only being given in the event of a realised loss.

Debts subject to provisioning against country risk were initially restricted to a specific set of circumstances, such as sovereign debt, which had been rescheduled within the previous five years. However, the range of debts subject to provisioning against country risk was subsequently expanded to include claims with a high probability of being rescheduled although not yet in default.

Since June 1998, the FSA has changed its policy on provisioning levels against country exposure. Banks are now expected to make their own judgement on provisioning levels and FSA supervisors assess whether such provisions are adequate.

Netherlands. On 1 January 1998 the Netherlands Bank introduced a new policy on country risk with two main changes from its predecessor. First, the range of countries embraced by the new policy includes not only those where debt servicing difficulties have already been encountered, but includes countries where there is the threat of such problems. Second, the revised policy requires individual institutions to assume responsibility for controlling their country risk. Instead of the Netherlands Bank prescribing minimum provisioning requirements for each country (along with a list of excluded assets), banks are now to a large extent free to establish their own provisioning levels and to determine what risk-reducing factors they wish to take into account. The Netherlands Bank has set provisioning percentage bands only in respect of those countries where the combined exposure of Dutch banks is relatively large. It will examine the way in which individual institutions control the country risk.

Switzerland. In 1983, the Swiss Federal Banking Commission (SFBC) established a compulsory minimum provision against exposures including contingent claims subject to country risk but excluding facilities funded in the local currency of the borrowing country. From the end of 1992, a uniform global minimum provisioning rate was replaced by a schedule of individual country rates. Banks were expected to establish policies and procedures regarding the evaluation and management of country risk and to review these regularly.

The SFBC has recently revised its approach to country risk. As from 1 January 1999, a list of minimum provisions for different countries is no longer provided. Banks are expected to determine their own policies on the identification and management of country risk exposures, to make adequate provisions consistent with their own valuation principles and to introduce appropriate reporting systems as part of their general approach to risk management. External auditors (recognised by the Swiss Federal Banking Commission) have to assess the adequacy of provisions and the CRM system of the bank. In addition, the Swiss Bankers Association has issued the “Guidelines for the Management of Country Risk”, observance of which is a requirement of every bank. Banks in their

annual reports must publish information on foreign exposures. As the Asian/emerging markets crisis has unfolded, banks' exposures have been closely monitored by the SFBC and discussed individually with their management and external auditors.

United Kingdom. UK-owned banks' cross-border exposures to emerging markets tend to be concentrated amongst a small number of institutions. Some have extensive and long-established presence within the countries themselves. Several non-EEA G10 banks in London have significant trading or banking book exposures. UK branches and subsidiaries of foreign banks from non-G10 countries will typically have relatively high levels of exposure to their home country, and in some cases to other emerging markets.

This diversity of circumstances and the continuing development of new instruments demands a case-by-case, risk-based approach to the supervision of emerging market exposures. UK supervisors have eschewed providing banks with a risk rating of countries, partly because of the possible moral hazard, but mainly because they consider country risk assessment to be the responsibility of the management of the banks themselves. The focus of supervision is thus on ensuring that a bank has an adequate appreciation of the various risks and that their country exposure is a coherent part of the bank's overall strategy. A bank is expected to have proportionate resources and systems and controls to enable it to monitor the risks of activity in this area. Supervisors are provided with country surveillance information to enable them to test and if necessary to challenge a bank's assessment of an individual market or trends in the sector generally. Banks are required to make consolidated semi-annual returns (which are the basis for reporting to the BIS) of their on and off-balance sheet exposures, including information on type of instrument, maturity and risk transfers, and significant changes are highlighted for discussion. Unconsolidated quarterly information on U.K. banks' external liabilities and claims is also monitored, although this is less comprehensive.

In 1987, UK supervisors agreed an approach to country provisioning (the "matrix") with the tax authorities which permitted specific provisions against sovereign exposure to be tax deductible. The matrix provided a score based on objective indicators of a country's debt servicing record and ratios, plus other external economic data, from which a range of tax-allowable provisions could be read. Banks were expected to score the matrix themselves.

The structure of the matrix itself has been revised somewhat since it was originally released. Its limitations as a summary forward-looking indicator of future external payments problems have always been recognised. In May 1998, the banks were informed that the matrix would be withdrawn but that they would be required to set out their policies and procedures regarding provisioning against country risk as part of a more comprehensive provisioning policy statement that they will be required to complete during 1999.

United States. In 1978, an examination approach to supervising the transfer risk exposures of US banks was introduced. To implement this approach the Interagency Country Exposure Review Committee (ICERC) was established to develop assessments of the transfer risks involved in foreign credits to specific countries. The committee consists of three members from each of the agencies, and meets two to three times a year to review conditions in countries where transfer risk to US banks is significant. Input for these meetings is provided by the Federal Reserve Board, the Federal Reserve Bank of New York, and the US Treasury Department. Based on this information, as well as findings of examiner meetings with the management of US banks with significant transfer risk exposures, ICERC assigns a rating of "pass," "substandard," "other transfer risk problem," "value impaired," or "loss" to the country under review.

Examiners use ICERC country ratings to target areas for closer attention and to assess the adequacy of provisions and internal risk ratings at banking organisations. "Pass" situations are divided into three groups based on assessments of their potential vulnerability to future risk events for the purpose of determining the level at which concentrations to individual countries warrant additional scrutiny by examiners. In the case of "substandard" and "other transfer risk problem" exposures, provisions are not mandated, but a bank generally increases its provisions voluntarily to reflect such exposures. In the case of "value impaired" exposures, mandatory write-offs or specific reserves are required.

The country risk supervisory approach in the US is in the process of being refined to strengthen assessments of concentrations and risk management practices. The agencies have agreed to adopt a risk-focused examination approach in reviewing country risk in banks, as opposed to just a review of exposures. A greater emphasis will be placed on reviewing the adequacy of banks' CRM practices. Examiners will assess a bank's policies, procedures and controls, and management expertise in determining the soundness of the CRM process relative to the size and complexity of each banking organisation. The approach will also identify concentrations of credit, which are high relative to capital. This assessment will include discussions with banks' management as to the measures taken to mitigate banks' risks, i.e. stress testing, portfolio analysis considering contagion risk, and emergency plans or exit strategies for reducing exposures in a country or region. In addition, as part of the examination approach, examiners will identify or "classify" bank exposures to countries experiencing debt service interruptions, as identified by the agencies through ICERC.

(c) International supervisory guidance

G10 supervisors, both individually and through the Basel Committee, have advanced supervisory guidance on CRM in several forms. Internationally, the importance of sound CRM to internationally active banking institutions is duly recognised in the Basel Committee's 1997 "Core Principles for Effective Banking Supervision". Principle 11 enjoins bank supervisors to be "satisfied that banks have adequate policies and procedures for identifying, monitoring and controlling country risk and transfer

risk in their international lending and investment activities, and for maintaining appropriate reserves against such risk".

Specific guidance applicable to Principle 11 is currently being developed by the Basel Committee. It is expected that such guidance will build upon the Basel Committee's 1982 paper "Management of Banks International Lending – Country Risk Analysis and Country Exposure Measurement and Control" (MBIL). Despite significant changes in markets, management techniques and quantitative tools since its issuance, the basic elements of CRM identified in the 1982 guidance remain relevant. For example, the MBIL guidance emphasised the importance of integrated CRM systems that both measure and control country risk effectively. It also identified the need for monitoring systems that focus on consolidated exposures and facilitate analysis of the different dimensions of country risk including both on– and off-balance sheet exposures by maturity, sector of borrower, etc. Notably, it emphasised the importance of comprehensive measures of country exposure and their incorporation in banks' provisioning/reserving policies.

The MBIL also identified the need for a sound system of internal controls for managing country risk, including the importance of systems for establishing and managing country as well as foreign borrower/counterparty limits. The importance of diversifying country exposures and monitoring and limiting concentrations by sector (including banking and other financial industries) was emphasised. It recommended that banks establish units independent of the marketing and line functions with responsibility for setting and reviewing limits, monitoring exposures and considering/approving exceptions. The report also recommended that supervisors should make an adequate assessment of their banks' CRM systems and collect periodic information on country exposures.

(d) Recommendations

In the light of recent experience and the conclusions elsewhere in this paper, the working group believes that supervisory guidance to banks in respect to CRM should be reviewed and if necessary updated to emphasise the following:

- Effective oversight by a bank's board of directors and senior management is critical to a sound country risk management process. Procedures should be in place for board approval of the overall policies of the bank with respect to country risk and for ensuring that management takes the steps necessary to identify, measure, monitor and control these risks. Also, the board of directors should be informed regularly of the country risk exposure of the bank.

- Banks should have clearly defined policies and procedures for limiting and controlling country risk. These policies should address the bank's exposures on both a consolidated and an individual company basis. Such policies and procedures should delineate clear lines of

responsibility and accountability over country risk management decisions and should clearly define authorised instruments, hedging strategies and position-taking opportunities. Banks should be encouraged to be as transparent as possible in the disclosure of their policies.

- Banks should have established procedures for dealing with country risk problems. Banks should not rely solely on informal communication lines between experienced managers in times of crisis, but rather construct contingency plans and clear exit strategies.
- There should be rigorous application of the "know your customer" principle in international activities. A lack of knowledge about counterparties cannot be compensated for by shortening the maturity of the exposures or by demanding collateral. Country risk is an element that should be taken explicitly into account in the risk assessment of a counterparty.
- Banks should have sound systems for measuring and monitoring country risk. The system should be able to identify the full dimensions of country risk as well as incorporating features that acknowledge the links between credit and market risk.
- Banks should use of a variety of internal and external sources as a means to measure country risk. Banks should not rely solely on rating agencies or other external sources as their only country risk-monitoring tool.
- Banks should also incorporate information from their staff – such as credit officers, line managers and risk managers – into their country risk assessments.
- Management of country risk should incorporate stress testing as one method to monitor actual and potential risks. Stress testing should include an assessment of the impact of alternative outcomes to important underlying assumptions, in regard to assumed historical correlations between currencies and other financial market asset prices, and economic developments in emerging markets.
- Controls on country exposure should incorporate position limits that in addition to overall exposure also incorporate sub-limits in respect of exposure type sector of borrower, maturity, etc. Country exposure limits should include derivatives and other off-balance sheet exposures.
- The frequency of periodic reviews of country risk ratings should be more than annual and depend on the importance and complexity of the business to the lending bank.
- Banks should taken into account indirect country risk. For example, exposures to a domestic commercial borrower with a large economic dependence on a certain country can also be considered as subject to indirect country risk

- Country risk management processes employed by banks require adequate internal controls that include audits or other appropriate oversight mechanisms to ensure the integrity of the information used by senior officials in overseeing compliance with policies and limits.
- In the case of credits extended in non-domestic currencies, lending banks should establish whether the borrower will have foreign currency earnings of a similar maturity to repay the debt. Where this is not the case, lending banks need to assess how foreign currency and liquidity risk affect the credit profile of their counterparty.

Annex 1

Comments on the adequacy of the "Core Principles for Effective Banking Supervision" for debtor banks in the light of the Asian crisis

In accordance with its mandate, the working group did not try to identify the supervisory lessons of the Asian crisis for debtor countries or their credit institutions. However, in the course of its work, the group was asked to evaluate the adequacy of the "Core Principles" for debtor banks in the light of the Asian crisis. The major issues identified by the working group in this regard relate to:

1. Foreign currency liquidity management

The Asian crisis has demonstrated the importance of domestic banks managing their foreign currency liquidity on a day-to-day basis more closely. Supervisors should make sure that mismatches do not become excessive and that liquid foreign currency assets or credit lines can in fact be realised or drawn on in difficult market circumstances. Further analysis of the issues, leading to more detailed guidance on the setting of limits, is probably required.

More guidelines on the management of foreign currency liquidity in stress conditions would be useful. Large liquidity mismatches in the foreign currency books and low official reserves can make a banking system very vulnerable to a crisis, since the ability to borrow foreign exchange from the central bank may disappear. In a crisis, foreign currency assets, originally considered to be readily marketable, may become unsaleable. Long-term foreign currency liabilities may suddenly become payable because of embedded options or triggers.

2. Credit risk management

The crisis has underlined the importance of sound credit risk management. The government-led direction of loan activity to certain economic sectors, which were considered to be of strategic importance, was clearly a problem in a number of Asian countries. Related to this is the problem of guarantees and collateral. It is important that a bank should only take into account explicit guarantees, and not implicit (government) guarantees, in its loan decisions. Banks should also look through to the global aggregate and nature of risks being assumed by their borrowers ("know your customer" principle), even if the facilities they have provided appear to be fully collateralised. Collateral can be no substitute for more detailed credit assessment as its value may well be impaired by the same factors that have led to the diminished recoverability of loans.

3. Interrelationship between different categories of risk at the time of a crisis

The different risk categories a bank is exposed to should be adequately monitored and controlled, and the linkages between different categories of risk that are likely to emerge at the time of a crisis should be fully appreciated. In adverse circumstances, a borrower may be faced by an interaction of credit, market, operational and legal risks. Useful instruments to assess this interaction are scenario analysis and stress testing.

An example of this interaction is where a bank's customers increase their foreign currency exposure on an unhedged basis. In the event of a sharp devaluation of the home currency, the bank's customers will face sharply higher debt servicing costs as measured in the home currency and may be unable to service their obligations to the bank. Even if the customer or the bank has hedged its exposure, a sharp depreciation of the domestic currency may mean that the counterparty in the hedging operation may be unable to fulfil its obligations. There is also an increased legal risk since counterparties may be inclined to challenge their obligations in court.

4. Clear and conservative accounting and loan valuation rules

The crisis has been aggravated by the uncertainties created by unreliable accounting, with the revelation of larger than expected write-downs on loans contributing to a loss of confidence in banks. Credit assessment by banks has been handicapped by poor accounting standards in the corporate sector, leading to mispricing and misallocation of resources. It is clearly a large task in some countries for the corporate sector and other bank borrowers to adopt appropriate accounting and loan valuation standards.

5. The Basel Capital Accord as a minimum standard

The minimum 8% ratio of capital to risk-weighted assets of the Basel Capital Accord was designed for well-managed, highly diversified and internationally active banks. For banks operating in developing and transition economies, proper account should be taken of the higher-risk environment. It is encouraging that some emerging market countries have already implemented higher requirements than the 8% minimum level. At the level of the individual bank, capital requirements can be tailored to the nature and extent of the risks faced by the institution and the capacity of the bank's management to control and monitor them. Such a discretionary approach, of course, places a premium on the independence and skill of supervisors.

6. Rules on corporate governance

The lack of adequate corporate governance in the banks seems to have been an important contributing factor in the Asian crisis. The board of directors and the management committee of the banks did not play the role they were expected to play. The relationship between the banks and their shareholders was often questionable (e.g. directed loan decisions).

The idea of corporate governance could be further developed in the Core Principles. A major difficulty in coming up with guidelines in this matter, will be the very different corporate governance culture, which exists in the different countries.

Annex 2

Major international working groups dealing with lessons from the Asian crisis

Group	Mandate	Main conclusions and recommendations
"Willard group", working group on transparency and accountability (G22). Chair: M. King (Bank of England) and A. Sheng (Hong Kong Monetary Authority).	Study how information could best be made available to support the formulation of sound economic policies, the effective functioning of financial markets, and the prevention and resolution of crises. Report was published in October 1998.	• National standards for private sector disclosure should reflect timeliness, completeness, consistency, risk management, and audit and control processes. • Private firms have to meet national accounting standards to be enforced by national authorities. • Need for core set of accounting standards (cf. IASC/IOSCO). • Need to improve certain quantitative information (banking statistics, international exposures of institutional investors, foreign exchange liquidity positions, foreign exchange reserves). • Development of and compliance with codes of good practice on fiscal and monetary policy transparency (with a role for IMF). • More disclosure of information by IFIs and MDBs, to be supported by national authorities. • IMF should prepare a transparency report summarising compliance with recognised disclosure standards. Groups that set disclosure standards should ensure there are mechanisms for monitoring compliance with these standards.
"Willard group", working group on strengthening financial systems (G22). Chair: M. Draghi (Ministry of Finance, Italy) and P. Guidotti (Ministry of Finance, Argentina).	Study how national financial systems can be strengthened, how the global system can be made more resilient and how markets can operate more efficiently. Report was published in October 1998.	• Endorsement of international efforts to develop and implement standards/sound practices in several areas (banking supervision, securities regulation, data dissemination, corporate governance, internal controls, management of liquidity and FX risk, deposit insurance, insolvency regimes, market access for banks, core accounting standards – especially on asset valuation and loan loss provisioning). • Importance of controlling foreign currency liquidity mismatches in banking and other domestic sectors stressed. • Introduction of independent assessment of implementation by countries of minimum standards, i.a. on financial sector supervision (could be done by IMF, peer review). • Public sector should engage in dialogue with private sector on optimal use of available information on institutional aspects of national financial systems. • Need to have a method of structured early intervention in banking sector and a set of mechanisms for responses by supervisors. • International cooperation and exchange of information on financial sector issues should be increased.

Group	Mandate	Main conclusions and recommendations
"Willard group", working group on international financial crises (G22). Chair: D. Lipton (Department of the Treasury, US) and M. Werner (Ministry of Finance, Mexico).	Focus on policies aimed at preventing international financial crises and facilitating the orderly and cooperative resolution of crises. Report was published in October 1998.	• Government guarantees should be limited as much as possible. If offered, they have to be explicit and priced appropriately. • Financing techniques allowing greater payment flexibility or new financing in case of adverse market developments should be prompted. Practices that contribute to the resolution of crises have to be developed. • Countries are encouraged to develop effective insolvency and debtor-creditor regimes. • The adoption of collective action clauses in contracts is recommended in order to encourage more effective creditor coordination if difficulties arise. • Countries have to make all possible efforts to meet debt contracts in full. If this is not possible, they should initiate discussions with the private sector to reach a voluntary agreement. • A framework should be devised and enhanced for future crisis management envisaging under certain limited circumstances the provision of conditional financial support, also in the context of a temporary payments suspension. • Increase in IMF funding deemed essential (NAB and quota increase). • Countries anticipating difficulties should seek early IMF assistance. Financial support in the presence of arrears should be provided by the IMF only if certain minimum criteria are met.
Euro-currency Standing Committee (ECSC) fact-finding group on international banks' use of information and risk management (BIS ; G-10). Chair: A. Frankel (Board of Governors of the Federal Reserve System, US).	Analyses, for a sample of international banks from G-10 Countries, of: • the nature and use of the information available for banks' country risk assessments; • the main features of banks' country risk evaluation systems and how these are incorporated in the risk management practices and conduct of business. Group prepared the report "On the use of information and risk management by international banks" for the ECSC meeting of September 1998.	• Strengthening of available information (on outstanding debt, foreign currency reserves, derivatives positions, short-term foreign currency debt, financial condition of emerging market banks) is deemed desirable by the banks. • Need to pay greater attention to measurement of contagion effects, loss of market liquidity, the extent of correlation between different types of risks, and the incorporation of several additional sources of risk in the concept of country risk in addition to pure transfer risk. • Models based on historical data failed to accurately predict extent of losses and led sometimes to an underestimation of risk. Greater emphasis needs to be placed on stress testing and scenario analysis.

Annex 3

Tables on G10 banks' exposure on emerging market countries

Table 1

BIS reporting bank claims on Asia - by country

$ millions

	Dec. 93	Dec. 94	Dec. 95	Dec. 96	Jun. 97	Dec. 97	Jun. 98
Indonesia	29,866	34,970	44,843	55,523	58,726	58,388	50,268
Korea	40,295	56,599	77,392	99,953	103,432	94,180	72,444
Thailand	29,123	43,879	62,994	70,181	69,382	58,835	46,801
Malaysia	12,607	13,493	16,759	22,231	28,820	27,528	23,024
Philippines	5,633	6,830	8,325	13,289	14,115	19,732	17,803
Subtotal	**117,524**	**155,771**	**210,313**	**261,177**	**274,475**	**258,663**	**210,340**
Hong Kong	186,856	241,715	241,444	207,164	222,289	211,968	174,571
Singapore	151,358	175,311	193,531	189,310	211,192	194,820	139,667
Subtotal	**338,214**	**417,026**	**434,975**	**396,474**	**433,481**	**406,788**	**314,238**
China	32,538	41,341	48,399	55,002	57,922	63,128	59,327
Taiwan	15,185	21,068	22,531	22,363	25,163	26,173	23,211
Subtotal	**47,723**	**62,409**	**70,930**	**77,365**	**83,085**	**89,301**	**82,538**
Total	**503,461**	**635,206**	**716,218**	**735,016**	**791,041**	**754,752**	**607,116**

Source: Bank for International Settlements, "Maturity, Sectoral and Nationality Distribution of International Bank Lending".

Table 2

BIS reporting bank claims on Asian counterparties - by maturity

$ millions

		Dec. 93	Dec. 94	Dec. 95	Dec. 96	Jun. 97	Dec. 97	Jun. 98
Indonesia	Total claims	29,886	34,970	44,843	55,523	58,726	58,388	50,268
	One year or less (%)	61%	61%	62%	62%	59%	61%	55%
	Over one year (%)	36%	36%	35%	34%	35%	36%	42%
Korea	Total Claims	40,295	56,599	77,392	99,953	103,432	94,180	72,444
	One year or less (%)	71%	71%	70%	68%	68%	63%	46%
	Over one year (%)	22%	20%	19%	20%	20%	23%	39%
Malaysia	Total Claims	12,607	13,493	16,759	22,231	28,820	27,528	23,024
	One year or less (%)	57%	49%	47%	50%	56%	53%	49%
	Over one year (%)	35%	42%	41%	36%	31%	38%	42%
Philippines	Total Claims	5,633	6,830	8,325	13,289	14,115	19,732	17,803
	One year or less (%)	40%	46%	49%	58%	59%	60%	57%
	Over one year (%)	57%	49%	46%	35%	31%	34%	37%
Thailand	Total Claims	29,123	43,879	62,994	70,181	69,382	58,835	46,801
	One year or less (%)	72%	71%	70%	65%	66%	66%	59%
	Over one year (%)	26%	27%	27%	30%	30%	31%	37%
Subtotal	**Total Claims**	**117,544**	**155,771**	**210,313**	**261,177**	**274,475**	**258,663**	**210,340**
	One year or less (%)	**66%**	**66%**	**66%**	**64%**	**64%**	**62%**	**52%**
	Over one year (%)	**45%**	**45%**	**40%**	**39%**	**38%**	**43%**	**55%**
Hong Kong	Total Claims	186,856	241,715	241,444	207,164	222,289	211,968	174,571
	One year or less (%)	89%	88%	87%	83%	82%	79%	76%
	Over one year (%)	10%	10%	11%	14%	13%	16%	19%
Singapore	Total Claims	151,358	175,311	193,531	189,310	211,192	194,820	139,667
	One year or less (%)	96%	95%	93%	93%	93%	92%	88%
	Over one year (%)	4%	5%	6%	6%	6%	7%	10%
Subtotal	**Total Claims**	**338,214**	**417,026**	**434,975**	**396,474**	**433,481**	**406,788**	**314,238**
	One year or less (%)	**92%**	**91%**	**90%**	**87%**	**88%**	**85%**	**81%**
	Over one year (%)	**7%**	**8%**	**8%**	**10%**	**9%**	**11%**	**15%**
China	Total Claims	32,538	41,341	48,399	55,002	57,922	63,128	59,327
	One year or less (%)	46%	44%	48%	49%	52%	53%	52%
	Over one year (%)	48%	46%	43%	43%	40%	39%	40%
Taiwan	Total Claims	15,185	21,068	22,531	22,363	791,041	26,173	23,211
	One year or less (%)	92%	90%	87%	84%	77%	82%	80%
	Over one year (%)	7%	9%	12%	14%	18%	15%	26%
Grand Total	**Total Claims**	**503,481**	**635,206**	**716,218**	**735,016**	**791,041**	**754,752**	**607,116**
	One year or less (%)	**83%**	**81%**	**80%**	**76%**	**77%**	**75%**	**68%**
	Over one year (%)	**15%**	**16%**	**17%**	**17%**	**18%**	**20%**	**26%**

Source: Bank for International Settlements, “Maturity, Sectoral and Nationality Distribution of International Bank Lending”.

Table 3

BIS reporting bank claims on Asian counterparties - by counterparty type

$ millions

		Dec. 93	Dec. 94	Dec. 95	Dec. 96	Jun. 97	Dec. 97	Jun. 98
Indonesia	Total claims	29,886	34,970	44,843	55,523	58,726	58,388	50,268
	On public sector (%)	21%	20%	15%	13%	11%	12%	15%
	On banks (%)	25%	22%	22%	21%	24%	20%	14%
	On all others (%)	54%	58%	63%	66%	68%	68%	71%
Korea	Total claims	40,295	56,599	77,392	99,953	103,432	94,180	72,444
	On public sector (%)	8%	9%	7%	6%	4%	4%	7%
	On banks (%)	63%	65%	68%	66%	65%	59%	57%
	On all others (%)	28%	25%	26%	28%	31%	36%	36%
Malaysia	Total claims	12,607	13,493	16,759	22,231	28,820	27,528	23,024
	On public sector (%)	26%	18%	13%	9%	6%	6%	7%
	On banks (%)	41%	29%	26%	29%	36%	36%	31%
	On all others (%)	33%	53%	61%	62%	57%	58%	62%
Philippines	Total claims	5,633	6,830	8,325	13,289	14,115	19,732	17,803
	On public sector (%)	49%	38%	32%	21%	13%	12%	12%
	On banks (%)	22%	25%	27%	40%	39%	45%	46%
	On all others (%)	29%	37%	41%	40%	48%	42%	42%
Thailand	Total claims	29,123	43,879	62,994	70,181	69,382	58,835	46,801
	On public sector (%)	10%	6%	4%	3%	3%	3%	4%
	On banks (%)	30%	32%	33%	37%	38%	30%	26%
	On all others (%)	60%	62%	63%	60%	60%	67%	70%
Subtotal	**Total claims**	**117,544**	**155,771**	**210,313**	**261,177**	**274,475**	**258,663**	**210,340**
	On public sector (%)	**16%**	**13%**	**9%**	**8%**	**6%**	**7%**	**9%**
	On banks (%)	**41%**	**41%**	**43%**	**44%**	**45%**	**40%**	**36%**
	On all others (%)	**43%**	**46%**	**48%**	**48%**	**50%**	**53%**	**55%**
Hong Kong	Total claims	186,856	241,715	241,444	207,164	222,289	211,968	174,571
	On public sector (%)	1%	2%	1%	1%	1%	1%	1%
	On banks (%)	46%	42%	50%	65%	65%	60%	55%
	On all others (%)	52%	56%	49%	34%	34%	39%	44%
Singapore	Total claims	151,358	175,311	193,531	189,310	211,192	194,820	139,667
	On public sector (%)	2%	2%	1%	0%	1%	0%	1%
	On banks (%)	63%	59%	65%	83%	83%	80%	74%
	On all others (%)	34%	39%	34%	17%	17%	20%	26%
Subtotal	**Total claims**	**338,214**	**417,026**	**434,975**	**396,474**	**433,481**	**406,788**	**314,238**
	On public sector (%)	**1%**	**2%**	**1%**	**0%**	**1%**	**1%**	**1%**
	On banks (%)	**54%**	**49%**	**57%**	**74%**	**74%**	**69%**	**63%**
	On all others (%)	**44%**	**49%**	**42%**	**26%**	**26%**	**30%**	**36%**
China	Total claims	32,538	41,341	48,399	55,002	57,922	63,128	59,327
	On public sector (%)	35%	29%	20%	15%	13%	11%	12%
	On banks (%)	37%	38%	40%	41%	43%	43%	40%
	On all others (%)	28%	32%	40%	43%	44%	46%	49%
Taiwan	Total claims	15,185	21,068	22,531	22,363	791,041	26,173	23,211
	On public sector (%)	5%	4%	2%	2%	2%	2%	2%
	On banks (%)	64%	65%	63%	58%	62%	55%	56%
	On all others (%)	31%	32%	35%	40%	37%	43%	42%
Grand total	**Total claims**	**503,481**	**635,206**	**716,218**	**735,016**	**791,041**	**754,752**	**607,116**
	On public sector (%)	**7%**	**7%**	**5%**	**4%**	**3%**	**4%**	**5%**
	On banks (%)	**50%**	**47%**	**52%**	**60%**	**61%**	**57%**	**51%**
	On all others (%)	**42%**	**46%**	**43%**	**35%**	**36%**	**40%**	**44%**

Source: Bank for International Settlements, “Maturity, Sectoral and Nationality Distribution of International Bank Lending”.

Table 4

BIS reporting bank claims on Asian counterparties – by country of origin

$ millions

		Dec. 93	Dec. 94	Dec. 95	Dec. 96	Jun. 97	Dec. 97	Jun. 98
Indonesia	Total claims	29,866	34,970	44,843	55,523	58,726	58,388	50,268
	US banks	8%	7%	6%	9%	8%	8%	6%
	Japanese banks	55%	52%	47%	40%	39%	38%	38%
	European banks	27%	29%	34%	39%	38%	40%	44%
Korea	Total claims	40,295	56,599	77,392	99,953	103,432	94,180	72,444
	US banks	10%	10%	10%	9%	10%	10%	10%
	Japanese banks	30%	31%	28%	24%	23%	22%	26%
	European banks	34%	33%	31%	34%	35%	36%	39%
Malaysia	Total claims	12,607	13,493	16,759	22,231	28,820	27,528	23,024
	US banks	10%	10%	9%	10%	8%	6%	5%
	Japanese banks	41%	43%	43%	37%	36%	31%	34%
	European banks	35%	40%	37%	41%	44%	51%	47%
Philippines	Total claims	5,633	6,830	8,325	13,289	14,115	19,732	17,803
	US banks	44%	37%	35%	29%	20%	16%	17%
	Japanese banks	17%	14%	12%	12%	15%	13%	13%
	European banks	32%	37%	42%	48%	48%	53%	60%
Thailand	Total claims	29,123	43,879	62,994	70,181	69,382	58,835	46,801
	US banks	8%	6%	7%	7%	6%	4%	4%
	Japanese banks	55%	60%	59%	53%	54%	56%	56%
	European banks	6%	23%	24%	27%	29%	29%	33%
Subtotal	**Total claims**	**117,524**	**155,771**	**210,313**	**261,177**	**274,475**	**258,663**	**210,340**
	US banks	**11%**	**9%**	**9%**	**10%**	**9%**	**8%**	**8%**
	Japanese banks	**43%**	**44%**	**42%**	**36%**	**35%**	**33%**	**35%**
	European banks	**25%**	**30%**	**30%**	**35%**	**37%**	**38%**	**41%**
Hong Kong	Total claims	186,856	241,715	241,444	207,164	222,289	211,968	174,571
	US banks	4%	3%	3%	4%	4%	4%	3%
	Japanese banks	56%	62%	55%	42%	39%	36%	31%
	European banks	33%	29%	33%	42%	45%	47%	53%
Singapore	Total claims	151,358	175,311	193,531	189,310	211,192	194,820	139,667
	US banks	3%	3%	3%	3%	2%	2%	2%
	Japanese banks	59%	54%	40%	31%	31%	30%	24%
	European banks	31%	36%	45%	54%	54%	52%	57%
Subtotal	**Total claims**	**338,214**	**417,026**	**434,975**	**396,474**	**433,481**	**406,788**	**314,238**
	US banks	**3%**	**3%**	**3%**	**4%**	**3%**	**3%**	**3%**
	Japanese banks	**63%**	**59%**	**49%**	**37%**	**35%**	**33%**	**28%**
	European banks	**27%**	**32%**	**38%**	**48%**	**49%**	**50%**	**54%**
China	Total claims	32,538	41,341	48,399	55,002	57,922	63,128	59,327
	US banks	2%	2%	4%	5%	5%	4%	4%
	Japanese banks	40%	40%	37%	32%	32%	31%	29%
	European banks	37%	37%	42%	47%	48%	51%	53%
Taiwan	Total claims	15,185	21,068	22,531	22,363	25,163	26,173	23,211
	US banks	16%	12%	12%	14%	10%	8%	7%
	Japanese banks	27%	26%	14%	12%	12%	13%	11%
	European banks	41%	46%	56%	57%	57%	60%	65%
Grand total	**Total claims**	**503,461**	**635,206**	**716,218**	**735,016**	**791,041**	**754,752**	**607,116**
	US banks	**5%**	**5%**	**5%**	**6%**	**5%**	**5%**	**5%**
	Japanese banks	**56%**	**52%**	**45%**	**35%**	**34%**	**34%**	**30%**
	European banks	**28%**	**33%**	**37%**	**43%**	**32%**	**32%**	**50%**

Source: Bank for International Settlements, “Maturity, Sectoral and Nationality Distribution of International Bank Lending”.

Table 5

BIS reporting bank claims on Eastern Europe and Latin America

$ millions

Eastern Europe

	Dec. 93	Dec. 94	Dec. 95	Dec. 96	Jun. 97	Dec. 97	Jun. 98
Total Claims	83,914	78,982	90,221	102,956	116,908	122,968	133,443
By Maturity							
One year or less (%)	37%	37%	39%	44%	51%	43%	45%
Over one year (%)	63%	63%	61%	56%	49%	57%	55%
By Sector							
On public sector (%)	72%	72%	70%	64%	53%	53%	50%
On banks (%)	16%	15%	15%	15%	16%	13%	14%
On all others (%)	10%	13%	15%	20%	31%	34%	36%
By Country of Origin							
US banks	2%	3%	4%	9%	10%	9%	9%
Japanese banks	10%	7%	5%	4%	3%	3%	3%
European banks	81%	82%	81%	77%	69%	72%	73%

Latin America

	Dec. 93	Dec. 94	Dec. 95	Dec. 96	Jun. 97	Dec. 97	Jun. 98
Total Claims	189,810	205,667	213,026	242,372	251,086	283,005	295,712
By Maturity							
One year or less (%)	50%	51%	52%	54%	52%	55%	55%
Over one year (%)	50%	49%	48%	46%	48%	45%	45%
By Sector							
On public sector (%)	27%	25%	25%	24%	24%	26%	24%
On banks (%)	38%	35%	32%	28%	26%	21%	20%
On all others (%)	34%	40%	43%	48%	50%	53%	55%
By Country of origin							
US banks	28%	28%	27%	27%	24%	22%	22%
Japanese banks	10%	7%	7%	6%	6%	5%	5%
European banks	46%	45%	47%	48%	51%	55%	56%

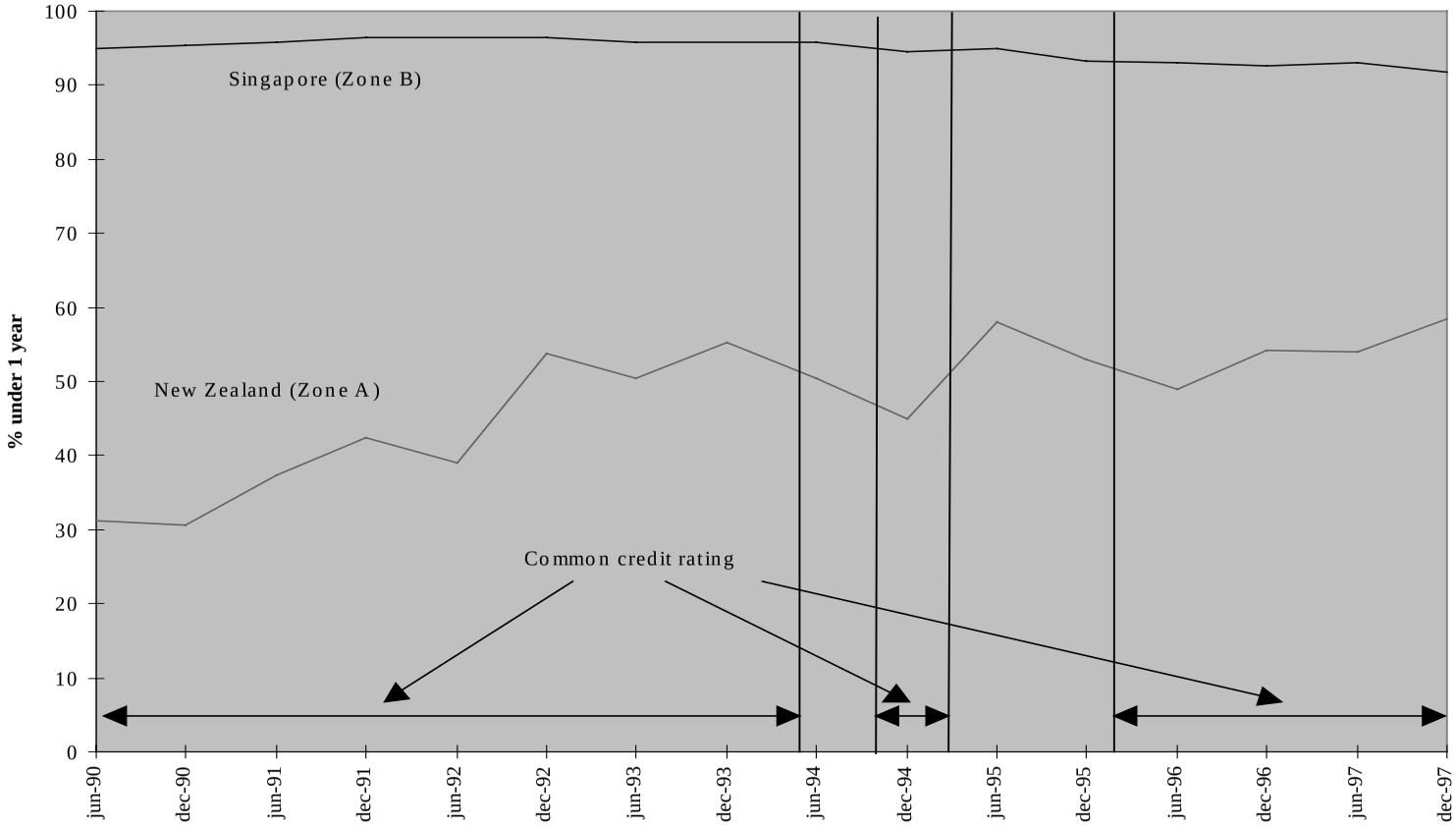
Source: Bank for International Settlements, “Maturity, Sectoral and Nationality Distribution of International Bank Lending”

Annex 4

Risk weights and bank lending behaviour: charts

Chart 1

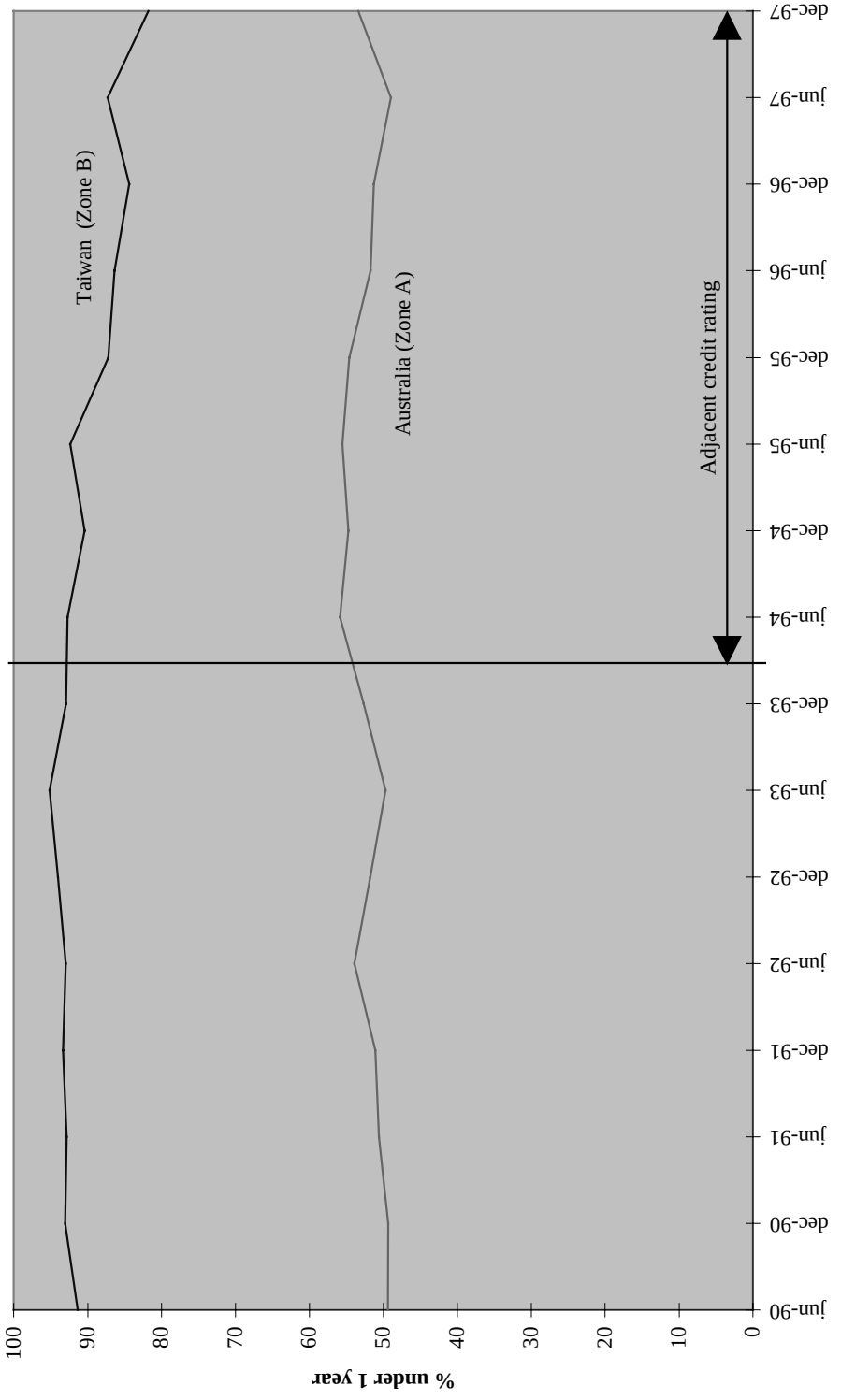
Percentage of BIS banks' lending to New Zealand and Singapore that is under one years maturity



	NZ	Singapore
90H1	Aa3	Aa3
90H2	Aa3	Aa3
91H1	Aa3	Aa3
91H2	Aa3	Aa3
92H1	Aa3	Aa3
92H2	Aa3	Aa3
93H1	Aa3	Aa3
93H2	Aa3	Aa3
94H1	Aa3	Aa2
94H2	Aa2	Aa2
95H1	Aa2	Aaa
95H2	Aa2	Aaa
96H1	Aa1	Aa1
96H2	Aa1	Aa1
97H1	Aa1	Aa1
97H2	Aa1	Aa1

Chart 2

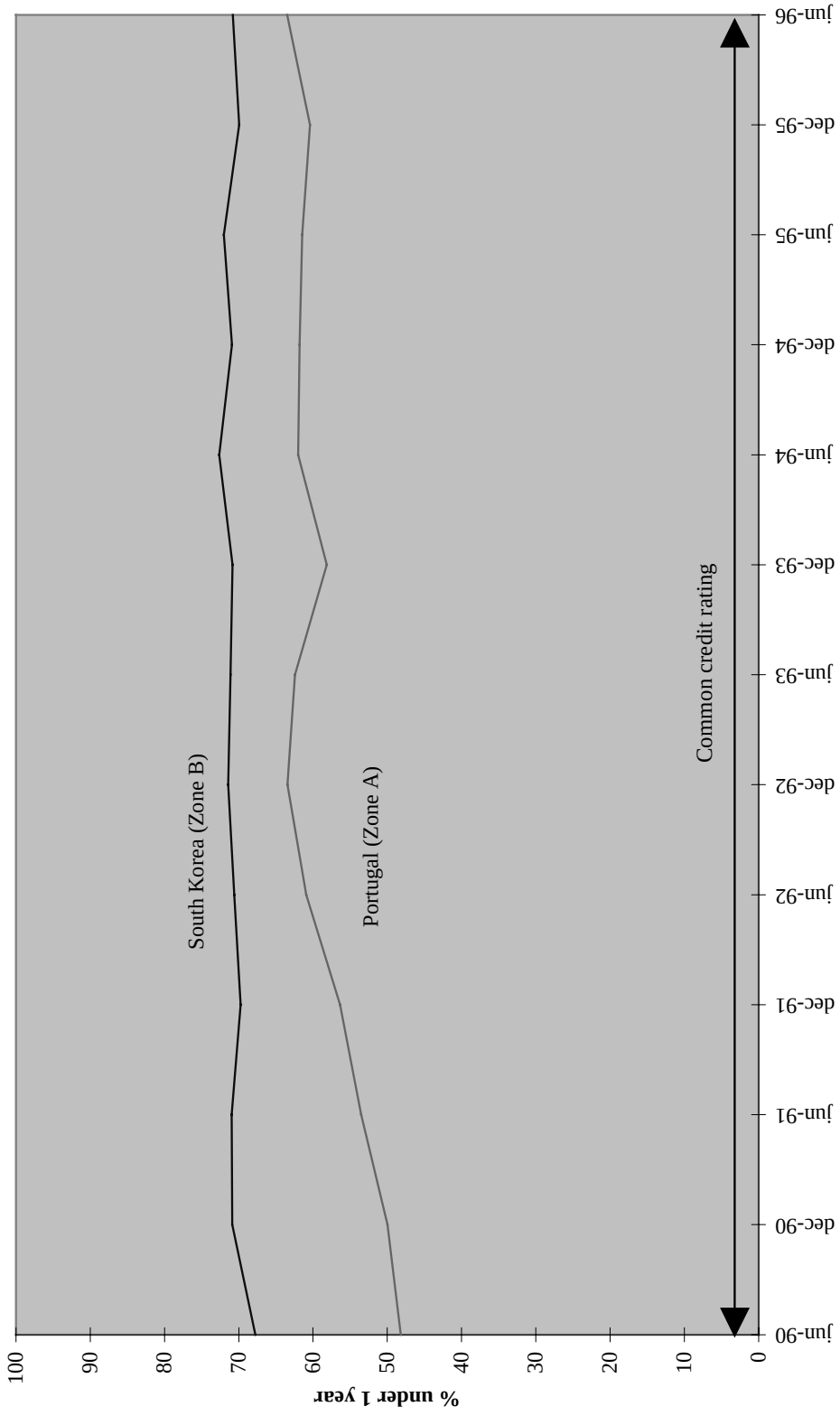
Percentage of BIS banks' lending to Australia and Taiwan that is under one years maturity



	Australia	Taiwan
90H1	Aa2	
90H2	Aa2	
91H1	Aa2	
91H2	Aa2	
92H1	Aa2	
92H2	Aa2	
93H1	Aa2	
93H2	Aa2	
94H1	Aa2	Aa3
94H2	Aa2	Aa3
95H1	Aa2	Aa3
95H2	Aa2	Aa3
96H1	Aa2	Aa3
96H2	Aa2	Aa3
97H1	Aa2	Aa3
97H2	Aa2	Aa3

Chart 3

Percentage of BIS banks' lending to Portugal and South Korea that is under one years maturity



	Portugal	S Korea
90H1	A1	A1
90H2	A1	A1
91H1	A1	A1
91H2	A1	A1
92H1	A1	A1
92H2	A1	A1
93H1	A1	A1
93H2	A1	A1
94H1	A1	A1
94H2	A1	A1
95H1	A1	A1
95H2	A1	A1
96H1	A1	A1
96H2	A1	A1

Chart 4

Percentage of BIS banks' lending to Iceland, Malaysia and Thailand that is under one years maturity

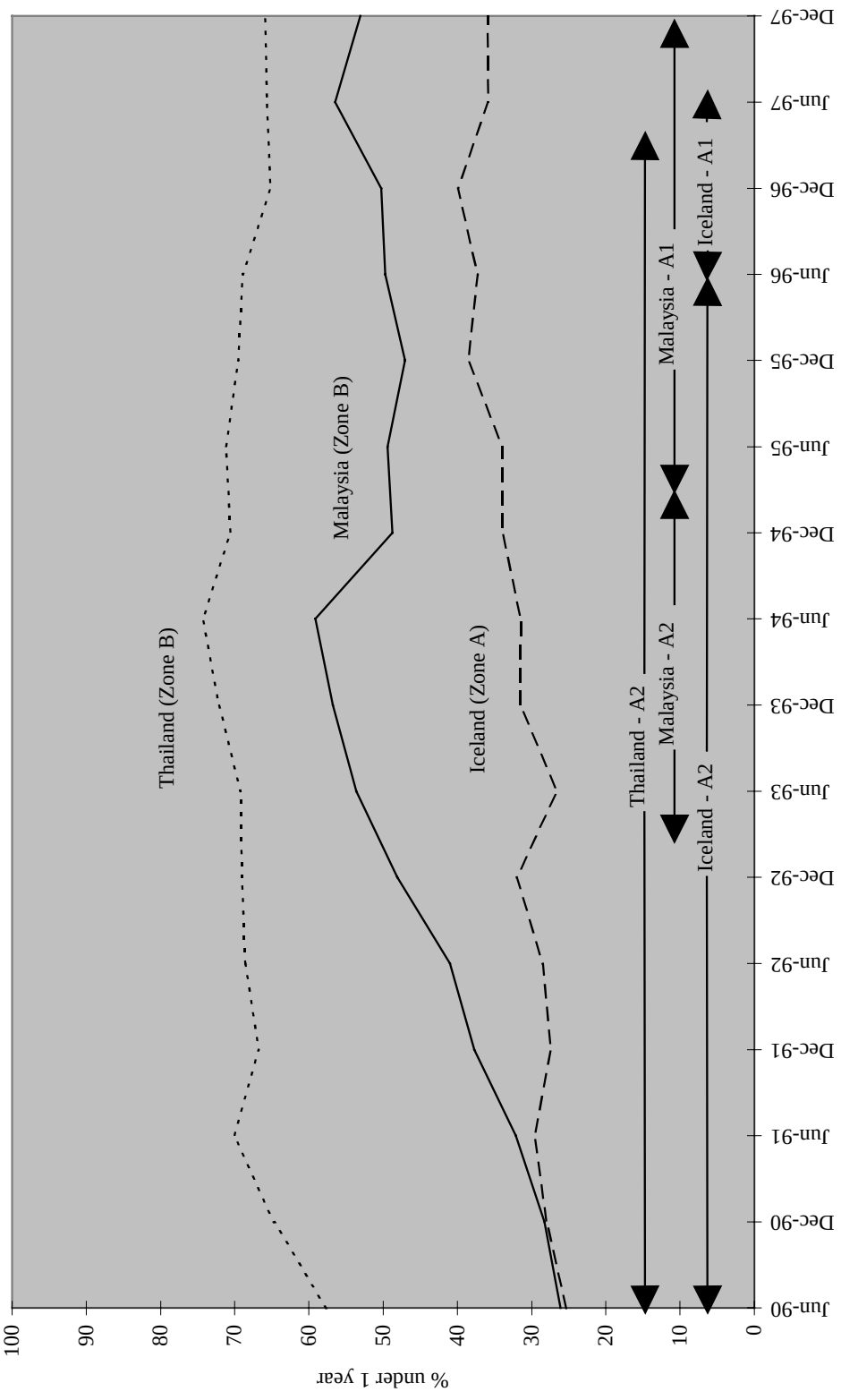


Chart 5

Percentage of BIS banks' lending to Portugal and Malaysia that is under one years maturity

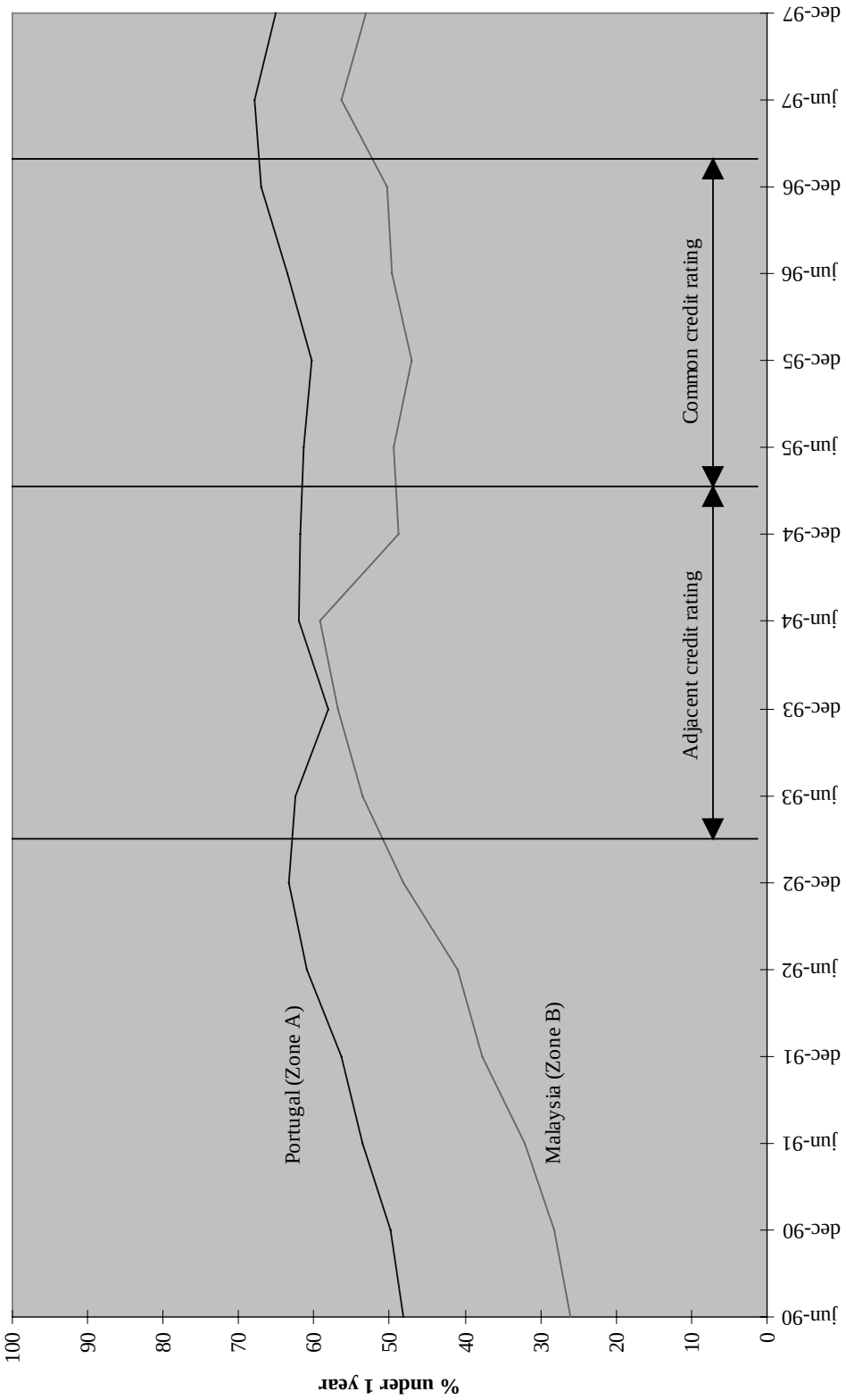


Chart 6

Percentage of BIS banks' lending to Greece, India, Poland, Saudi Arabia, South Africa and Tunisia that is under one years maturity

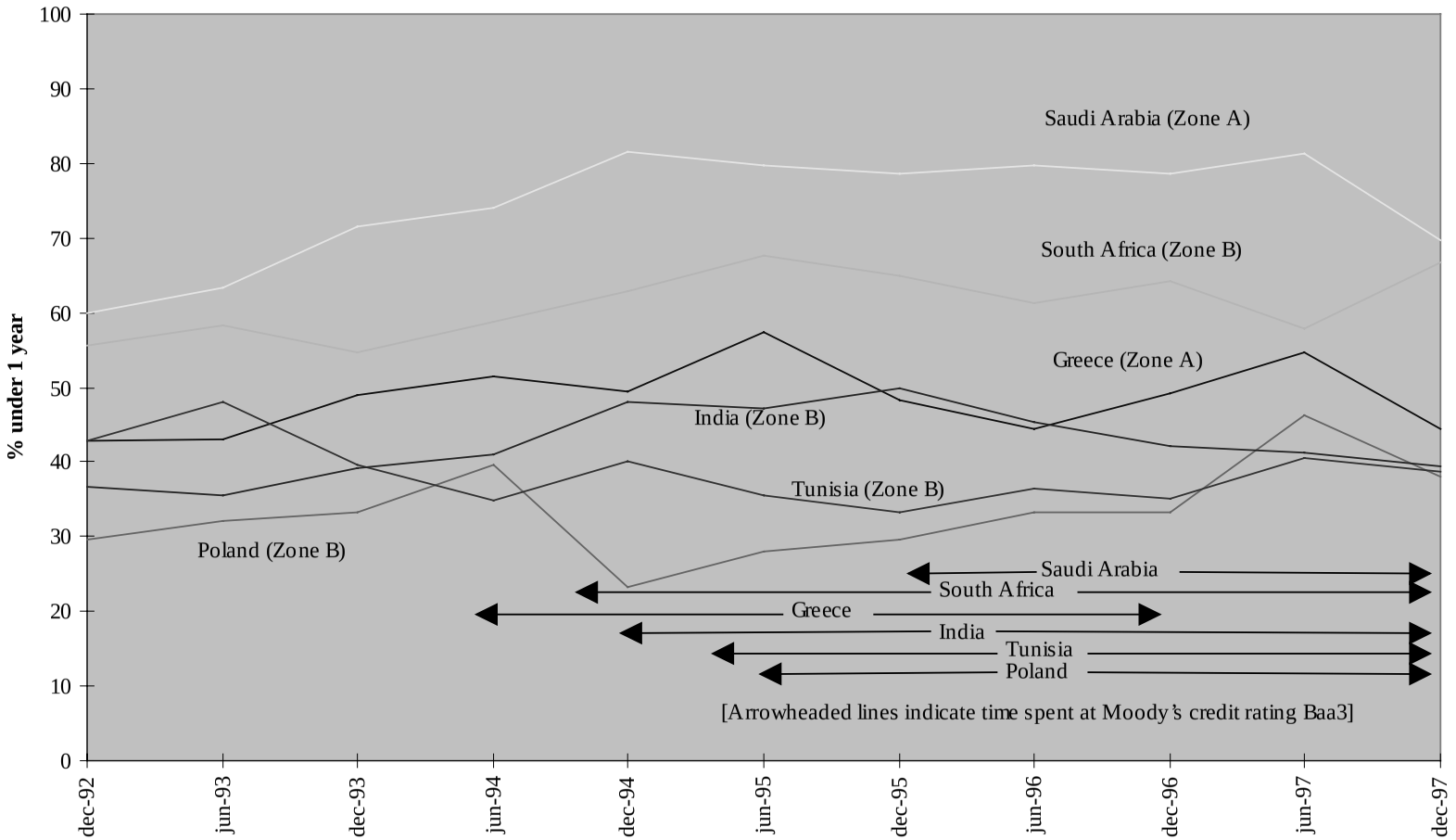
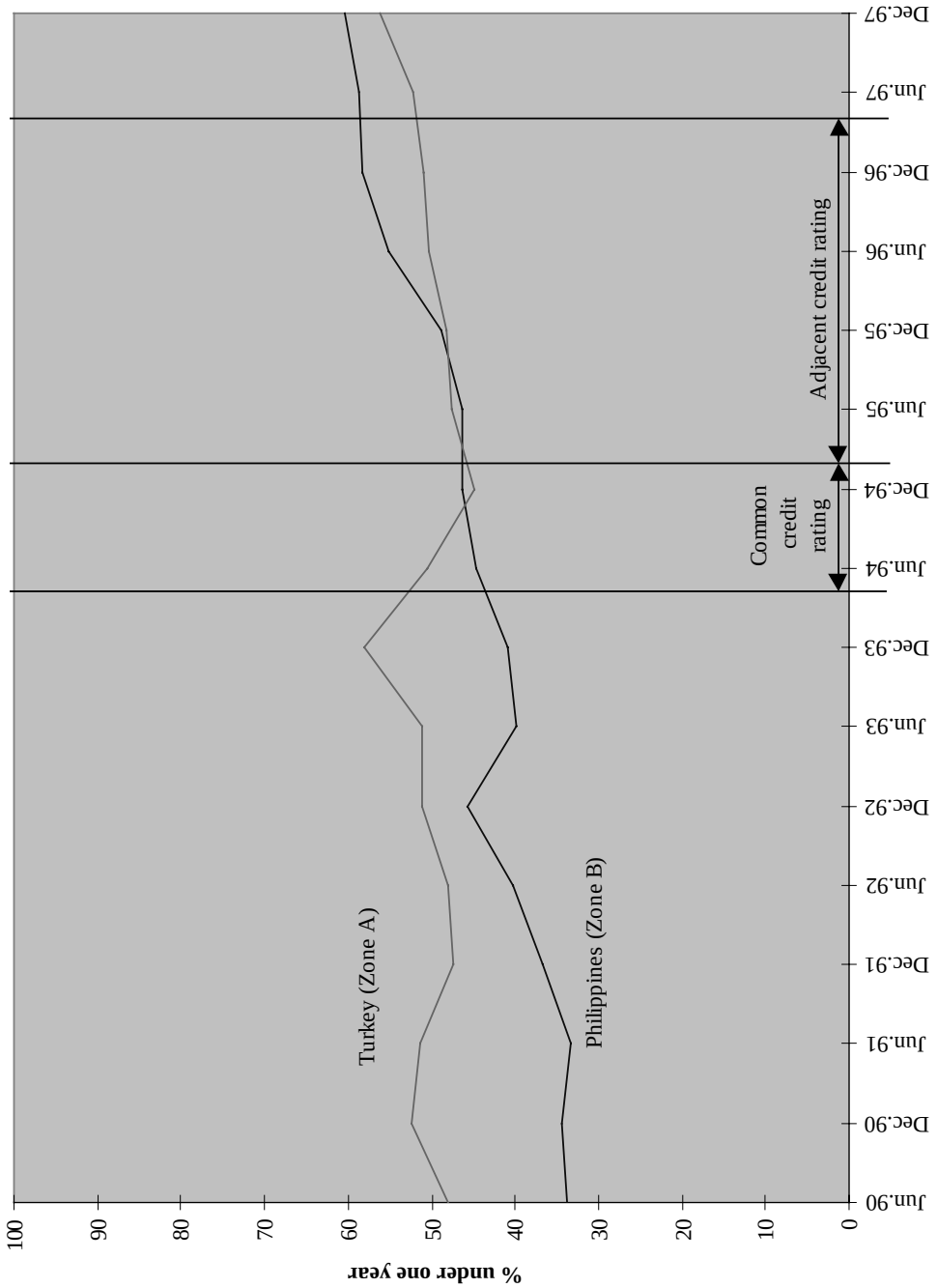


Chart 7

Percentage of BIS banks' lending to the Philippines and Turkey that is under one years maturity



	Philippines	Turkey
90H1		
90H2		
91H1		
91H2		
92H1		Baa3
92H2		Baa3
93H1		Baa3
93H2	Ba3	Baa3
94H1	Ba3	Ba3
94H2	Ba3	Ba3
95H1	Ba2	Ba3
95H2	Ba2	Ba3
96H1	Ba2	Ba3
96H2	Ba2	Ba3
97H1	Ba1	B1
97H2	Ba1	B1

Source: *OECD Economic Outlook* (preliminary edition).

Bank lending to emerging markets[a]

	United States	Japan	Canada	European Union[b]
		$ billions, December 1997		
Asian emerging markets	39.0	244.7	15.1	348.7
Five crisis countries [c]	22.0	56.7	4.1	98.8
China	2.5	19.6	1.1	32.5
Taiwan	2.2	3.5	1.8	15.8
Singapore and Hong Kong	12.3	134.9	8.1	201.9
Central and Eastern Europe and Turkey	14.1	6.3	0.6	102.2
of which: Russia	7.1	1.0	0.0	49.6
Latin America	63.4	14.7	11.5	154.9
Total emerging markets	118.5	265.7	27.2	605.9
		As a percentage of bank capital[d]		
Asian emerging markets	10.4	32.7	48.4	52.1
Five crisis countries [e]	5.9	47.0	13.1	14.7
China	0.7	10.6	3.4	4.8
Taiwan	0.8	1.9	5.8	2.4
Singapore and Hong Kong	3.3	73.2	26.1	30.2
Central and Eastern Europe and Turkey	3.8	3.4	2.0	15.3
of which: Russia	1.9	0.5	0.2	7.4
Latin America	16.9	8.0	36.9	23.1
Total emerging markets	31.1	144.1	87.3	90.5

[a] Exposure may be overestimated as a result of double-counting.

[b] Germany, France, Italy, the United Kingdom, Austria, Belgium, Finland, Luxembourg, the Netherlands and Spain.

[c] Korea, Indonesia, Malaysia, the Philippines and Thailand.

[d] Capital and reserves of commercial banks for the United States, Japan, the United Kingdom, Canada and Luxembourg and of all banks for the rest. Due to unavailability of more recent data, capital and reserves figures refer to 1998 while the lending figures are for end-December 1997.

Sources: *The Maturity, Sectoral and Nationality Distribution of International Bank Lending, Second Half 1997*, BIS, June 1998; and *Bank Profitability, Financial Statements of Banks*, OECD, 1998.

Annex 5

Themes of the economic literature on the Asian crisis

Origins of the crisis. Economists are still seeking a convincing explanation for the suddenness and intensity of the crisis given that, with the possible exception of Thailand, none of the countries hit by problems convincingly fit the mould of inconsistent exchange rate and monetary/fiscal policies. The causes of the crisis are important for determining the solution. Outflows brought about by an apparently exogenous change in investor confidence leading to panic could be addressed by measures such as the injection of liquidity and temporary capital controls, before the impact of the loss of confidence took hold. But a reversal of inflows reflecting more fundamental weaknesses would require far-reaching economic, political and institutional reforms. A number of economists have cited financial liberalisation against a background of weak financial fundamentals and supervision, including poorly regulated non-bank financial institutions, as increasing the vulnerability of the Asian economies to an external shock (Glick, 1998; Bisignano, 1998). One widely-cited model has formalised the intuition that the rapidity and severity of the crisis was largely the result of a bursting of a speculative bubble in asset prices that had been initially driven by the excesses of financial intermediaries (Krugman, 1998). One economist has argued that provided one dug deeper a macroeconomic explanation linked to the weakness of financial systems could still be found: for example, while current fiscal deficits did not point to difficulties, prospective deficits associated with the bailout of chronically weak banking systems could offer an explanation. Falls in bank stock prices ahead of the crisis appeared to anticipate future problems (Burnside, Eichenbaum and Rebelo, 1998).

Early warning indicators. The Asian financial crisis raises questions about the relevance of early warning indicators. Market indicators such as interest rate spreads and credit ratings were clearly ineffective in predicting the Asian financial crisis. There is a recent summary of ongoing research on early warning indicators of financial crisis based on measures of fundamental problems in the current and capital account, growth slowdowns, credit cycles and weaknesses in the banking sector. Using an empirical model incorporating the experience of 100 financial crises in 20 countries, the paper by Kaminsky (1998) concludes that the crises in Asian countries, with the exception of Indonesia, could have been predicted on the basis of historical experience.

Those who are sceptical about these early warning models criticise their tendency to generate false positives, or their ability to predict ten out of the last five financial crises. Another area of criticism for indicator models is their inability to account for the increasingly poor quality of data in times of crisis (due to poor financial accounting practices).

Moral hazard and bank supervisory reform in crisis countries. Almost all observers agree that East Asian financial institutions, prior to the crisis, took on what turned out after the event to be excessive risk, in part due to implicit government guarantees given to or perceived by investors. Most blueprints in the wake of the crisis for a new global financial architecture specifically deal with this problem of moral hazard.

One example of such a blueprint is the proposal of Calomiris (1998). Four minimal standards for bank regulations would be required as a condition for membership in the IMF (and liquidity assistance in times of crisis). In addition to minimum reserve and securities ratios, free banking and comprehensive deposit insurance, there would be a subordinated debt requirement. This debt would be held by pre-approved foreign financial institutions with no other financial transactions with the bank, and prices would provide continuous and transparent market opinions about the risk of local financial institutions. If the market-implied yield spreads exceeded a predetermined limit, the bank would not be allowed to issue more subordinated debt and would have to reduce its risk-weighted assets.

Macroeconomic adjustment policy and the IMF. Many have argued that the IMF prescription of the defence of exchange rates through sharply higher interest rates and fiscal measures aggravated the recession and the weak condition of banks during the Asian crisis. The Fund has consistently argued that given the pressure on exchange rates, there was little alternative to raising interest rates in the short term: fiscal targets were modified as the depth of the recession in the crisis countries became apparent. Interest rates had stayed higher for longer than initially hoped because external confidence was dented by the failure of the authorities to confront their problems. Indeed, important information on external liquidity (the scale of forward purchases of the baht and lending to the foreign branches of Korean banks) had not been available to the Fund.

Moral hazard and IMF policy. Another type of moral hazard frequently discussed in connection with the East Asian financial crisis relates to the expectation on the part of overseas lenders that international financial institutions would come to the rescue of failed investments. A number of scholars have proposed methods of bailing in the private sector, i.e. making it more difficult for creditors to refuse to roll over or restructure debt, to mitigate this form of moral hazard. Specifically, one proposal is for a proactive approach on the part of the IMF to encourage the use of loan contracts that include majority voting, sharing and non-acceleration clauses. Countries should also amend laws to allow courts to stay attempts to attach sovereign assets, and standing committees of creditors should be identified by central banks, G7 governments and the IMF prior to crisis to facilitate creditor coordination (Eichengreen, 1998). Others make an even more activist set of recommendations: imposing penalty rates on holdouts to encourage restructuring, as well as haircuts on foreign currency interbank creditors who refuse to roll over loans in times of crisis (Litan, 1998). Both of the above references entertain the possibility of IMF lending into arrears.

The one type of moral hazard that does not appear to be viewed as seriously is that countries may adopt risky policies given the likelihood of an international bailout. Given the Asian experience, most agreed the damage suffered by countries in crisis was a sufficient deterrent even with the IMF programmes in place.

Future and reform of the IMF. One by-product of the financial crisis in Asia was an increase in calls for reform of the IMF. At the extreme, some critics call for the elimination of the IMF. They note that the lender of last resort role was never contemplated by the IMF's founders, and argue that the staff at the IMF have exhibited little expertise and poor timing in recent events in Asia. At the same time, according to its detractors, the IMF exhibited little power to convince countries to make reforms. In the view of these critics, the primary impact of IMF rescue operations was to distort investment incentives on the part of private investors – the problem of moral hazard discussed above (Schultz, Simon and Wriston, 1998; Schwartz, 1998; Meltzer, 1998).

A more qualified call for reform has recommended a return to a macroeconomic focus on the part of IMF rescue operations (Feldstein, 1998). The IMF has moved from proposing macroeconomic solutions of the sort it prescribed for the Latin American debt crises of the 1970s and 1980s to more aggressively recommending fundamental changes in institutional structures of countries in crisis, much as it did for the ex-Soviet bloc countries in the early 1990s. In the recent crisis in Asia, critics suggest that the IMF was too quick in taking the lead in providing credit rather than relying on private banks, and too severe in announcing requirements for closing or reforming financial institutions, as well as calling for changes in industrial structure and political behaviour.

According to this reading of recent events, the IMF exacerbated panic in the midst of Asia's financial crisis. The crisis in Korea was only averted when the US Federal Reserve (and other central banks) convinced banks to create a co-ordinated programme to lengthen the maturity of Korea's outstanding obligations.

There have also been calls for internal reforms of the IMF. Jeffrey Sachs, director of the Harvard Institute for International Development, has long been highly critical of the secrecy surrounding IMF operations, and this criticism has gained ground given the emphasis the IMF is placing on transparency and accountability of government policies in client countries (Sachs, 1997; 1998). In addition, there have been calls for regular external review of past IMF programmes. Many IMF programmes viewed as successful would, in Sachs' opinion, not be judged so charitably if subject to external review.

Supporters of the IMF say that some degree of confidentiality is necessary to encourage countries to reveal information. Its programmes must be judged on their long-term merits, and it is unrealistic to expect a sudden recovery as a result of every IMF programme. IMF prescriptions must be in place for long enough to be fairly tested. Further, the IMF should be given the leeway to learn while operating in a rapidly changing international financial environment (Bergsten, 1998).

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