Discussion on International Contagion: What is it and what can be done against it?

MARKUS STAUB

1. INTRODUCTION

The second part of the afternoon session was devoted to a discussion on the issue of international contagion: «What is it and what can be done against it?» The discussion was led by ERNST BALTENSPERGER (University of Bern) who gave an introduction to the subject. To start the discussion, the following participants made an opening statement:

- MARTIN HELLWIG (Professor, University of Mannheim)
- WILLIAM R. WHITE (Economic Adviser, Head of the Monetary and Economic Department, BIS)
- PETER WUFFLI (Chief Financial Officer, UBS).

The written versions of these three opening statements are reprinted below, then followed by a brief summary of the comments made in the general discussion. This summary concentrates on the main points of the discussion and does not intend to give a detailed view of all the statements and arguments.

2. OPENING STATEMENTS

Martin Hellwig

International Contagion – the Result of Information or of Rhetoric?

1. International financial developments since the first half of 1997 have directed our attention to the phenomenon of «contagion» in financial markets. The very word «Asian crisis» provides evidence for the phenomenon. After all, this started out as a Thai crisis, and it isn't clear why international investors took the Thai crisis as evidence of potential difficulties in, say Korea. The Korean situation was rather different from that of Thai-

land, or its South Asian neighbours: The balance of payments situation was significantly more comfortable, and the banking system was less extended in lending to industry. Even so, the «Asian crisis» reached Korea: International investors concerned about «Asia» began to see difficulties in Korea that they had not seen before, refrained from further lending, tried to withdraw funds previously lent, with the result that the difficulties for the Korean economy that investors feared did indeed materialize.

2. The phenomenon is not new. Why did the October 1987 crash of US stock markets affect stock markets all over the world? Was there any fundamental reason why a downturn in expectations about the prospects of corporations in the United States – and of financial-market conditions in the United States – should induce a similar downturn in expectations about the prospects of corporations in continental Europe? Perhaps for companies doing the major part of their business in the United States, but what about companies doing most of their business within the European Common Market? Shall we believe that the crash was due to new information about the upcoming recession in the United States and that investors in Europe inferred that this meant a European recession as well?

In yet another example, the «International Debt Crisis» of the eighties caused private lenders to cut voluntary lending to «Latin America». This affected Colombia, which had serviced its debt, as well as Mexico, which had initiated the crisis by defaulting on outstanding loans. Why did lenders not make a difference? Why did perceived geographic or cultural similarities outweigh the fact that the different countries had behaved differently and indeed had different histories?

3. Economic theory ascribes contagion phenomena to information effects: One borrower's difficulties contain information about another borrower's potential difficulties. Such information effects can be due to outright interdependence of borrowers (domino effects) or to parallel exposures to adverse shocks in underlying variables such as interest rates, exchange rates, or the macroeconomy. The question is to what extent these effects really capture the contagion phenomena that we observe.

For international contagion phenomena of the sort mentioned above, domino effects are hardly important. International investors did *not* become worried about Korea because Korea had large asset positions in Thailand and people were worried about the adverse effects of difficulties in Thailand on the Korean holders of these assets and through them on the Korean economy.

4. This leaves information effects arising from parallel exposures to shocks. The 1998 Annual Report of the BIS lists investment and exchange rate strategies as factors that caused such parallel exposures: Having invested in similar industries, e.g., electronics, firms in different Asian countries alike found themselves in increasingly intense competition. Having their local currencies tied to the dollar, they were also in parallel exposed to the consequences of the 1996/1997 revaluation of the dollar. Both effects cut into their

margins and raised doubts about the solidity of their promises to their financiers, national and international.

One may however wonder why investors should have needed the Thai crisis to see that these developments might cause problems all over Asia. After all, the requisite information was in the public domain long before the crisis in Thailand broke out.

5. Even if we accept the macro-information based explanation of contagion phenomena, we must ask why they give rise to runs of the sort that we have seen. More precisely, why are contracts written in such a way that, nominally, the lenders do not bear any risk of adverse shocks in underlying macroeconomic variables, but, really, they are subject to default risks arising from such shocks, and to protect themselves against the consequences of default, they want to run so as to be ahead of the queue when an adverse shock is perceived. After all, there would be no difficulty in writing contracts that make the debtor's obligation contingent on the incidence of shocks in variables like the dollar/écu exchange rate, which can hardly be manipulated by individual borrowers and lenders.

To see the point of this question, note that, apart from its effects on takeover activity, the 1987 stock market crash had hardly any direct effects on company finances. It affected shareholders and the financial industry but, with the exception of those firms that had planned to raise additional equity, it did *not* affect the ability of firms to pay their wages or their outlays for investment goods. This contrasts with the effects of a run in which financiers with fixed nominal claims come and empty the company till, depriving the borrower of the means to keep his operation going.

6. The problem is partly one of maturities. Why is there so much lending short-term when all parties know – or must know – that the funds provided serve to finance long-term investments? What did international banks think they were doing when they provided short-term dollar-denominated loans to banks in Thailand? Did they expect these to be invested in short-term dollar-denominated assets with zero default risk? Or did they appreciate that some transformation of maturities and risks was taking place, but preferred not to think too deeply about the matter, hoping to get out early – at the head of the queue if a run should occur? If so, why did they fail to appreciate that not all lenders would be able to be at the head of the queue? The distribution of places in the queue is at best a source of additional risk; it has no effects on the funds available for servicing lenders.

This is not just a question about lending to Asian countries in the eighties. It is also a question about, e.g., Germany in the late twenties and the origins of the German banking crisis in 1931. A significant portion of international lending to German institutions in the late twenties was short-term – and played an important role in the crisis as investors worried about the implications of the Nordwolle failure on the Danat Bank or about the evolution of the Reichsbank's reserves tried to withdraw their funds at short notice.

7. Calomiris and Kahn *(American Economic Review* 1991) suggest that short-term finance of long-term investments serves as a disciplining device: The holder of a short-term instrument can threaten to withdraw his funds if the borrower misbehaves. Given that the borrower's investment is long-term, this would entail the borrower's default and, presumably, a transfer of control over assets to the lenders. On the lender's side, a sequential-service rule priviledging those who are first in line is useful because it provides incentives to monitor the borrower and start a run as soon as one discovers a sign that something is going wrong. The free-rider problem that one lender's monitoring activities may benefit the community of lenders as a whole is neutralized by the queuing externality whereby the lender who is first in line and gets his claim in full reduces the share of the borrower's assets that is available to others.

8. I am not convinced that this theory provides the proper explanation for the maturity transformation and the exposure to runs that we observe. In the first place, I believe that the Calomiris-Kahn theory exaggerates the power of financiers to actually do something once they have called in their loans and put the borrower in default. In the context of domestic banking, I am bothered by the implicit assumption that the consequences of whatever misbehaviour one is concerned about can be undone by timely intervention of the lenders. In the context of international finance, I am bothered by the further assumption that lenders can actually take control of borrowers' assets. Both assumptions are hardly realistic; they certainly do not fit the provision of short-term loans to German banks in the late twenties or to Thai banks in the midnineties.

In the second place, the Calomiris-Kahn theory cannot explain the absence of contingency clauses providing for the sharing of interest rate risk, exchange rate risk, and the like. Given that the dollar/écu exchange rate seems to have little to do with moral hazard and the need for discipline in relations between international lenders and Thai or Korean banks, a suitably adapted version of this theory to a world in which such risks are important would predict that contracts will contain contingency clauses to deal with such risks. After all, meaningful disciplinary intervention – or the threat thereof – should be tied to individual behaviour or misbehaviour, *not* to movements in world markets.

9. I wonder therefore whether the use of short-term finance for long-term investment may not be the result of an illusion. Could it be the case that lenders like to provide short-term funds because this provides them with an illusion of liquidity and control? Such an illusion might be based on overconfidence – a pervasive and well substantiated psychological phenomenon. We all know that the average automobile driver on our roads drives rather poorly, but of course, we also «know» that we personally drive much better than the average. Such overconfidence may also lead the individual lender to overestimate the chances that he will be first in line when the borrower gets into difficulties and a run takes place. He will then also overestimate the portion of his claim that he will be able to recover in the event of a run, i.e., he will effectively overvalue the claim. The borrower

then has an incentive to issue claims where this overvaluation effect is important, and lenders are putting up more funds than the claims they receive are worth – or would be worth if the lenders appreciated that their expectations about their prospects in the event of a run are mutually inconsistent.

Similar considerations apply to the occurrence of market bubbles. If people overestimate their own abilities relative to the rest of the market they may be willing to stay in the market even though they are perfectly aware that assets are overvalued, hoping to profit from the bubble while it is going on and expecting to be clever enough to get out before the rest of the market appreciates that the bubble is about to break.

10. Going beyond such overconfidence phenomena, I am always struck by the superficiality of the language in which market participants, consultants, and media commentators talk about current developments. When financial flows to Latin America resumed around 1990, one could hear and read that this time around, matters were going to be different: Whereas the financial flows of the seventies had involved bank loans, this time around one was using direct investments in real assets and portfolio investments through markets. This was better because (a) direct investments involved better control rights and (b) markets were much better than banks at disciplining borrowers.

Nice phrasing – grammatically correct and rhetorically flourishing – but without any account of underlying mechanisms – or any knowledge of history! After all, the financing wave of the late nineteenth century had been based on direct investments and portfolio investments in marketed securities. In, e.g., the case of Mexico, these assets were expropriated in the aftermath of the Mexican Revolution... In the financing wave of the nineteen-seventies, indeed even in during the renegotiations of the nineteen-eighties, one could hear and read that this time around, matters were going much better because one was dealing with bank loans and banks are much better than markets at negotiating with borrowers in default and disciplining them.

11. Before I comment further on the superficiality of language and thinking, I note that these examples can also be seen as instances of contagion. «Recycling Petro-Dollars» and lending to «Latin America» in the seventies was perhaps as much a matter of contagion as the cutting off of funds after 1982. So was the resurgence of finance to «Latin America» in the early nineties, or, for that matter, lending to «Asian tigers», big or little, prior to 1997.

More generally, we should think of contagion as a phenomenon that concerns the euphoria of an upswing as well as the pessimism of a downturn. If I look at stock market movements in Western Europe over the past two years, I find it hard to resist the idea that some of the upswing was based on contagion from the United States. Indeed some of this contagion may have been driven by rhetoric rather than hard information.

12. Beyond the overall assessment of «Asia» in the recent past – first manic, then depressive –, superficiality of reasoning seems to have played a role in two distinct con-

texts in relations of international lenders with Asian institutions. The first concerns the assessment of exchange rate risk. International financiers providing dollar-denominated loans to, e.g., Thai banks seem to have deemed themselves immune from exchange rate risk – after all, their claims were denominated in dollars rather than baht. Thai banks using these funds to provide dollar-denominated loans to Thai companies seem to have felt similarly immune from exchange rate risk. However, when the devaluation of the baht came, Thai companies that were earning their money in baht found it difficult to service their dollar-denominated debts, and their banks found out that the denomination of loans in dollars had merely transformed an exchange rate risk into a credit risk; once the Thai banks got into difficulties, the international financiers who had lent to them found this out as well.

In a professional and regulatory environment, in which one is used to think of exchange rate risks as market risks and of market risks and credit risk as being two animals of completely different species, the oversight is not altogether surprising. What is surprising is that professional and regulatory language continues to maintain the separation of market and credit risks without paying much attention to the correlations between them. After all such correlations arise naturally for all contractual arrangements that concern the allocation of market risks: When the realization of the market risk variable is most extreme and the counterparty's performance is most needed, it is also most difficult, and the counterparty most likely to default. Given the stakes involved, one might have expected the participants, professionals and regulators alike, to have come to terms with these correlations before.

13. The other area where language and reasoning seem to have been less than careful, concerns the safety of borrowing institutions. International lenders providing funds to banks and other financial institutions in Asian countries seem to have believed that their borrowers enjoyed explicit or implicit guarantees of their respective governments. Leaving aside the question of whether such guarantees are indeed in place, it should have been obvious that a government's ability to guarantee dollar-denominated foreign debts of a domestic institution is limited by this government's access to foreign currency so in the event of a macroeconomic crisis the matter would effectively lie with, e.g., the International Monetary Fund rather than the government in question. Neglect of this consideration in this context is the more surprising as the international debt crisis of the eighties should have made it clear that the adage according to which a government cannot default on its debt may be appropriate for dollar-denominated loans issued by the United States Government, but *not* for dollar-denominated loans of any other government. (Or did the international financial institutions remember the eighties and appreciate that the IMF's handling of the international debt crisis had partly helped to bail them out?)

14. From the perspective of economic orthodoxy, the preceding references to superficiality in language and thinking may seem strange. One of the rituals of economic theorizing is to assume optimizing behaviour and rational expectations based on a full

understanding of one's environment and to start from there. Doesn't this rule out considerations based on people's having merely a superficial understanding of what they are doing?

To answer this question, one needs to take account of two points. First, thoroughness is costly. Most importantly, a thorough analysis takes time; by the time one has come to a well-grounded conclusion about, e.g., a given investment opportunity, the investment opportunity itself may have disappeared. Secondly, language and reasoning are not necessarily employed for the benefit of the institution for which one works; most importantly they serve the purposes of the speaker within the institution. For these purposes, it is important that one use formulations that are effective – without necessarily being right. This in turn requires timeliness as well as an adaptation to whatever tune is currently *en vogue* in these games.

15. Given these considerations, the observed reliance on superficial reasoning and language may well be compatible with the usual rituals of economic theorizing – provided one takes account of the fact that optimizing behaviour and rational expectations refer to individuals rather than institutions and that there are costs to thinking things through rather carefully. From the policy perspective one may then wonder whether any of this gives rise to biases that call for regulatory intervention of some kind or other. After all, some of the cost savings from being less than thorough are quite real, enabling institutions to save on economists (?) and to exploit opportunities before they vanish again.

Considerations of cost saving may however involve a bias if they give rise to large institutions taking large positions involving insufficient risk diversification. If I see Mr. Piech of Volkswagen spend in excess of 1 billion German marks to acquire Rolls Royce, I am fairly sure that the preparation of this decision involved fewer manhours than would have been required to fund one thousand projects of one million marks each. Investing funds in large lumps saves on prior investigation costs. In itself this is not bad; after all the savings in manhours are real. The concentration of funds in large lumps does however increase risk exposure due to a lack of diversification. To the extent that some of this risk is borne by outsiders, the tradeoff between cost savings and risk reductions may be biased towards cost saving and a concentration of funds in large lumps.

16. I suspect that some of the superficiality which we observe in the context of contagion phenomena may well be due to this sort of bias. Thinking about «Asia» or «Latin America», about «banks» or «state guarantees of banks» in a wholesale manner requires less effort than if one wanted to make more distinctions and look at different cases individually. However, the costs of this imprecision may well be borne by somebody else.

William R. White

Crisis «contagion» in Asia: causes and preventive measures[1]

The Asian crisis began in early July 1997 with the floating of the Thai baht and proceeded in four main waves. First, floating the baht put immediate pressure on the currencies of Indonesia, Malaysia and the Philippines, with knock-on effects on domestic financial markets and the domestic economy. Second, in October the Hong Kong, Singapore and new Taiwan dollars were caught up in speculative pressures, and there were manifestations of unease in countries as far away as Brazil and Russia among many others. Third, in December the Korean won began to depreciate sharply, exacerbating the unfolding crisis in countries affected earlier in the chain. Fourth, after a period of greater stability in Asian financial markets throughout the spring of 1998, financial markets were further unsettled by the growing recognition that the real economic effects of the crisis were likely to be significantly greater and of longer duration than had been previously expected. A sharp weakening of oil and other commodity prices has occurred, and this is bound to hurt oil and other commodity exporters –Venezuela, Russia and Saudi Arabia and my own country, Canada. In the context of a weakening Japanese economy and a sharp decline in the value of the yen, concerns began to arise about a further round of Asian currency depreciation.

In this paper I examine the causes of this «contagion» in Asia. Briefly, most of the countries involved had similar domestic problems and were subject to the same kind of international shocks. Viewed from this perspective, there was correlation in what happened in Asia but not contagion, if the latter is thought of as a causative process. However, there was in addition a true process of contagion, which acted through the financial markets themselves. In the last part of this note, I consider what might have been done to prevent the crisis from spreading as it did. The conclusion reached, not surprisingly given the multivariate sources of the crisis, is that there is no magic bullet for crisis prevention. Similarly, it is concluded that there is no magic bullet for crisis management either: while most possible policy recommendations help solve some of the underlying problems, they only exacerbate others.

1. This paper draws heavily on analysis carried out for the *68th Annual Report* of the Bank for International Settlements. I am indebted to the work done by Robert McCauley (Chapter VI), Philip Turner (Chapter VII) and Jozef Van't Dack (Chapter III).

The causes of «contagion»

Many of the affected countries in the Asian region shared a number of *domestic weaknesses* which made their economies vulnerable to crisis. Before beginning to enumerate them, it is important to note that this list does not include fiscal excess and/or an inadequate level of domestic savings (Table 1). For many years, the former problem was considered almost to be a necessary condition for foreign exchange crises, a view which was called into serious question only with the advent of the Mexican crisis in 1995, which took place after many years of fiscal restraint. As for the latter problem, having a high domestic saving rate was also the primary reason why Asian countries were considered to be immune from Mexican-type problems. The Asian crisis has thus served to raise the bar once more. It is now clear that the list of prerequisites for a healthy economy and sustainable economic growth is very long indeed.

Table 1

Macroeconomic structure of selected Asian economies

	Investment		Domestic saving		Fiscal balance[1]		Openness to trade[2]		ICOR[3]	
	Average 1986-95	1996	Average 1986-95	1996	Average 1986-95	1996	1986	1996	Average 1986-90	Average 1991-96
	as a percentage of GDP									
Indonesia	32.6	32.1	33.8	31.2	0.9	–1.0	15.9	20.4	19.2	22.6
Korea	33.9	36.8	36.4	35.2	0.3	0.0	30.7	28.9	32.9	20.2
Malaysia	32.7	42.2	35.8	42.6	–3.2	0.7	44.3	78.9	25.1	22.1
Philippines	20.5	23.2	17.5	15.6	–1.9	0.3	16.4	31.2	20.5	12.2
Thailand	36.3	42.2	33.5	35.9	2.1	0.7	20.9	34.9	32.6	19.6

Note: Data for 1996 are partly estimated.

[1] Central government. [2] Ratio of average merchandise exports and imports to GDP. [3] Incremental capital/output ratio, shown here as its inverse, i.e. the real rate of GDP growth over investment/GDP.

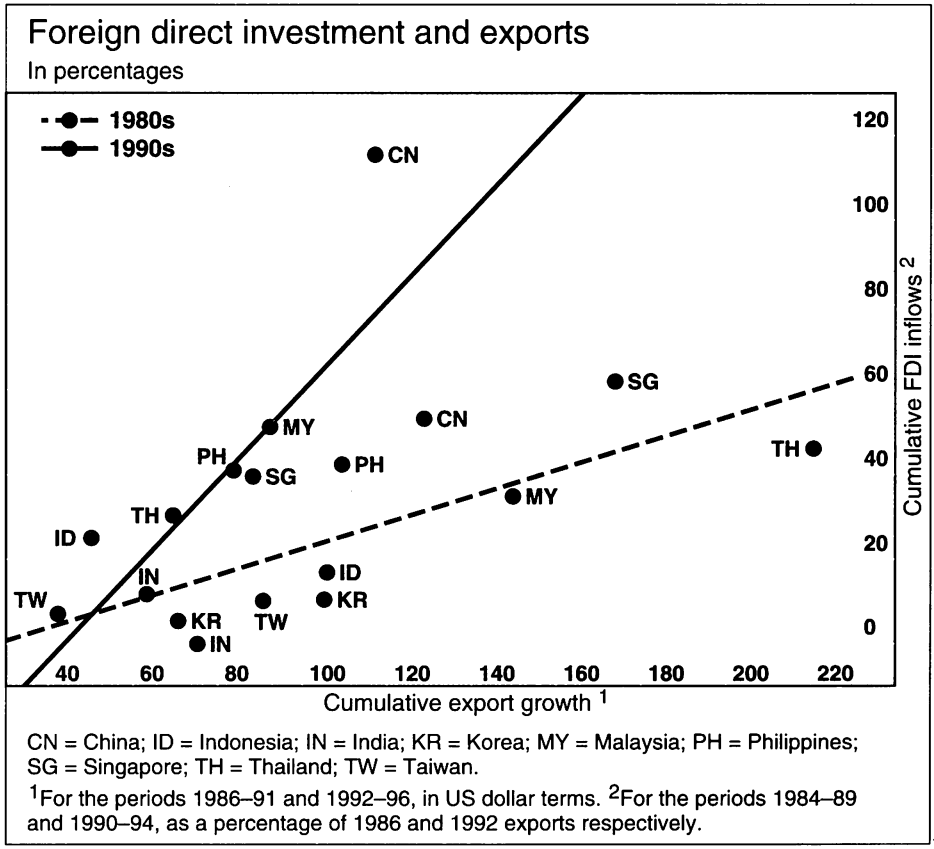
What most countries in the region did share was a long period of heavy investment in (variously) new manufacturing capacity, property and infrastructure. As is clear from the calculations of the incremental capital output ratio, also in Table 1, which in most countries dropped sharply in the 1990s, these investments have in recent years begun to yield lower rates of return. The same impression can be inferred from Graph 1, which shows that foreign direct investments in many Asian countries were associated with a smaller increase in exports in the 1990s than in the 1980s[2]. A second and closely related problem in many countries was that this over-expansion in capital was financed by a very rapid

2. The evidence in Graph 1 must be treated with some caution in that the composition of foreign direct investment may also have changed in recent years. For example, if investments in the 1980s were in new capacity, while those in the 1990s involved the foreign purchase of existing assets, the results in Graph 1 might also be expected.

growth of credit, primarily from banks (Table 2). In effect, the good fundamentals in many of these economies seem to have led to over-optimism on the part of both domestic borrowers and domestic lenders. A related reason was a tendency in most countries for asset prices to rise sharply. Since such assets were commonly used as collateral to guarantee bank loans, this led to more loans being granted, which only served to drive prices up further. The fact that the underlying rate of return on the invested funds was actually declining was thus generally ignored.

A further common feature in many of these countries was the long-standing decision to link their currencies tightly to the US dollar. This had a number of unfortunate effects. The most important was that monetary policy, being directed to maintaining the exchange rate peg, could not be used to resist generalised inflation. Although there is no

Graph 1



CN = China; ID = Indonesia; IN = India; KR = Korea; MY = Malaysia; PH = Philippines; SG = Singapore; TH = Thailand; TW = Taiwan.

[1]For the periods 1986–91 and 1992–96, in US dollar terms. [2]For the periods 1984–89 and 1990–94, as a percentage of 1986 and 1992 exports respectively.

Table 2

Bank credit expansion and indicators of the banking industry

	Bank credit to the private sector[1]			Indicators of the banking industry			
	Annual rate of expansion[2]		As a percentage of GDP	Operating costs		Net interest margin	
	1981-89	1990-97[3]	1997[3]	1990-94	1995-96	1990-94	1995-96
				as a percentage of assets			
India	8	4	24	2.3	2.5	3.1	3.5
China[4]	12	13	97	1.0	1.4	1.7	2.2
Hong Kong	13	8	157	0.1[5]	0.4	0.2[5]	0.3
Taiwan	15	13	138	1.3	1.3	2.1	2.2
Indonesia	22	18	57	2.3	2.8	3.3	3.6
Korea	13	12	64	1.9[6]	2.1	2.2[6]	2.2
Malaysia	11	16	95	1.6[5]	1.4	4.7[5]	3.2
Philippines	-5	18	52	4.0	3.5	5.3	4.8
Singapore	10	12	97	0.8	0.7	2.2	2.0
Thailand	15	18	105	1.9	1.8	3.6	3.6
Argentina	-2	4	18	11.0	6.3	13.1	7.2
Brazil	7	2	24	10.1	6.7	15.5	6.7
Chile	8	11	53	3.1	3.2	6.3	5.7
Colombia	7	9	20	7.5	7.5	8.7	10.0
Mexico	-2	7	14	4.0	3.0	5.4	4.4
Peru	-13	27	19	9.9	7.0	8.0	7.0
Venezuela	-3	-9	9	5.9	7.3	9.5	17.2
Memorandum items:							
United States	*5*	*½*	*65*	*3.7*	*3.4*	*4.1*	*3.8*
Japan	*8*	*1½*	*111*	*1.0*	*1.1*	*1.2*	*1.5*
G-10 Europe[7]	*6*	*4*	*89*	*2.1*	*1.9*	*2.3*	*2.0*

[1] Annual average. [2] Deflated by consumer prices. [3] 1997 data are preliminary. [4] Credit other than to central government. [5] 1993-94. [6] 1991-94. [7] Weighted average based on 1990 GDP and PPP exchange rates.

Sources: Central banks, IBCA Ltd. and IMF International Financial Statistics.

consensus as to whether monetary policy should target asset prices, it is also the case that monetary policy could not be used to resist the credit and asset price bubbles just described. A second problem was that the long-standing nature of the peg, and various governments' vocal commitment to maintaining it, led many domestic investors to believe that exchange rate risk was no longer a problem. Confronted with higher domestic interest rates than those prevailing in industrial countries, many Asian investors borrowed dollars and yen unhedged and thereby exposed themselves to considerable losses should the peg not hold.

A last common domestic feature of affected Asian economies, in part reflecting excessive credit expansion, was weak financial systems. When exchange rate pressures

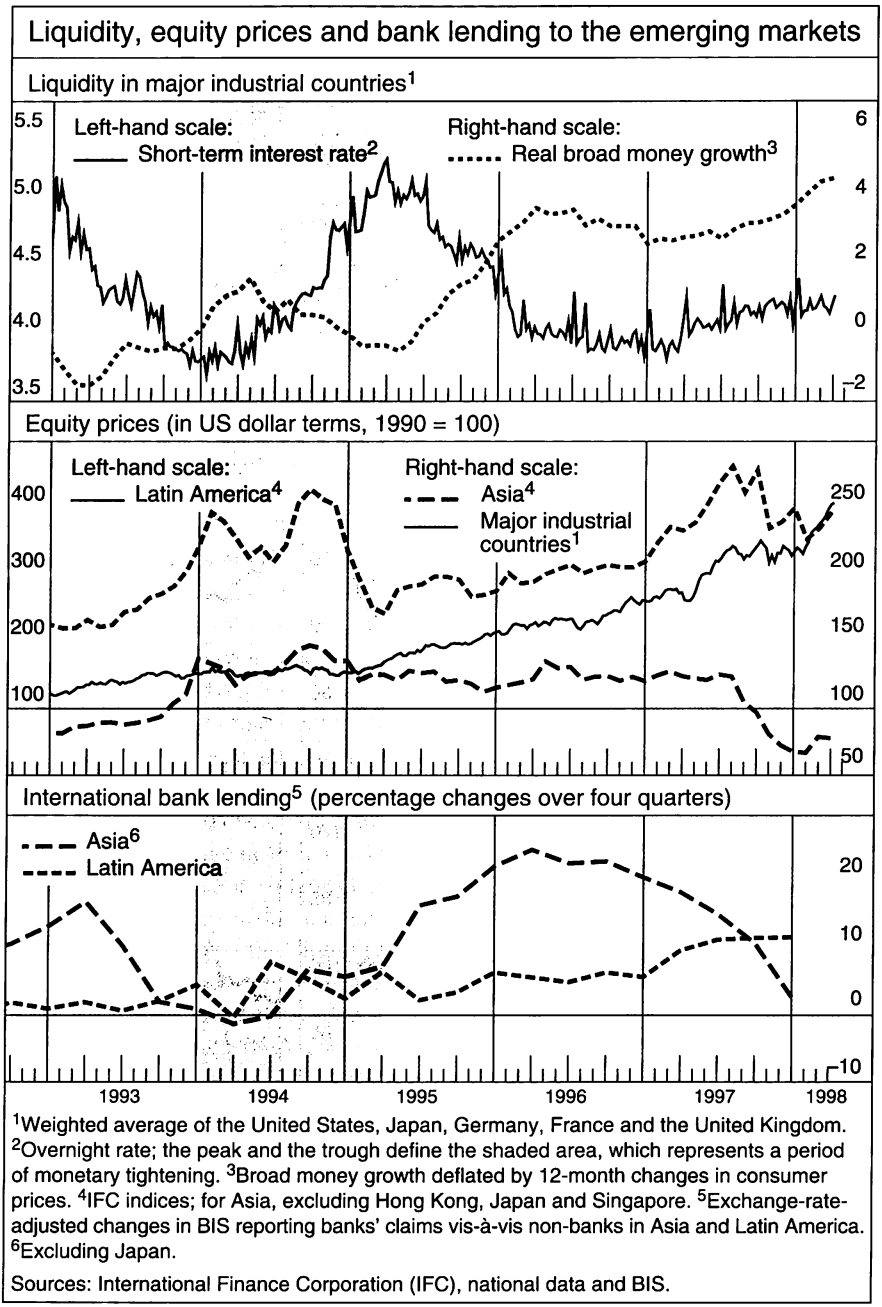
began, domestic interest rates rose and the value of collateral began to fall. Moreover, as economies began to slow, bad and doubtful loans became more obvious, as did the fact that provisions for potential losses had in most cases been wholly inadequate. These problems arose because accounting standards in many countries were very low, many loans had been made without due diligence (often to cronies of various kinds, including those with political connections) and supervisory standards were generally low and often not applied in any event. When the exchange rate peg had to be abandoned, many customers of the banks found that their uncovered liabilities in foreign currencies had effectively rendered them bankrupt. Taken together with the domestic problems of other customers faced with higher interest rates, this threatened the solvency of the banks themselves. As banks tried to protect themselves through restricting the further expansion of loans, the downward pressure on the real economy was given another vicious twist.

Many of the affected Asian economies also shared a number of *international problems.* The first of these was an unprecedented volume of capital inflows encouraged by high levels of international liquidity and low interest rates in the industrial countries (Graph 2). Earlier banking problems in the United States (early 1990s) and Japan (throughout the 1990s) contributed to unusually low international interest rates for much of the decade, as did the slow recovery in Europe. This environment led many investors in industrial countries to look further afield with the objective of raising yields, even at the expense of accepting higher risk in unexplored foreign markets. These inflows were not generally the essence of the Asian problem, but they certainly exacerbated domestically generated overheating and asset price bubbles. It is to be noted that this search for higher yields may also have pushed up asset prices outside Asia as well, with final implications yet to be seen for other emerging and transition economies as well as equity prices in industrial countries.

It is also worth remarking that, in most of the affected Asian countries, the inflows were denominated in dollars and yen and that the maturity of the loans was often very short. For example, BIS international banking statistics for the middle of 1997 indicate that Korean entities had borrowed US$ 103 billion from reporting banks and that US$ 70 billion was due in one year or less. Moreover, in most affected countries foreign banks were responsible for the bulk of the lending and domestic banks were responsible for the bulk of the borrowing. As a result, many of the Asian countries were significantly exposed to a sudden shift in confidence on the part of a relatively small number of lenders.

The fact that many Asian countries had tied their currencies to the US dollar exposed them to another common international problem. After the spring of 1995, with the US economy in a cyclically advanced position, the dollar began to rise sharply against the yen after almost a decade of appreciation. In this environment, many of the smaller countries in the region found it more and more difficult to maintain the peg (Graph 3). In this regard, there were clear similarities with the exchange rate crisis in the ERM in the early 1990s when, the German economy cyclically advanced, those currencies tied to the Deutsche mark were attacked one by one and many succumbed to eventual depreciation.

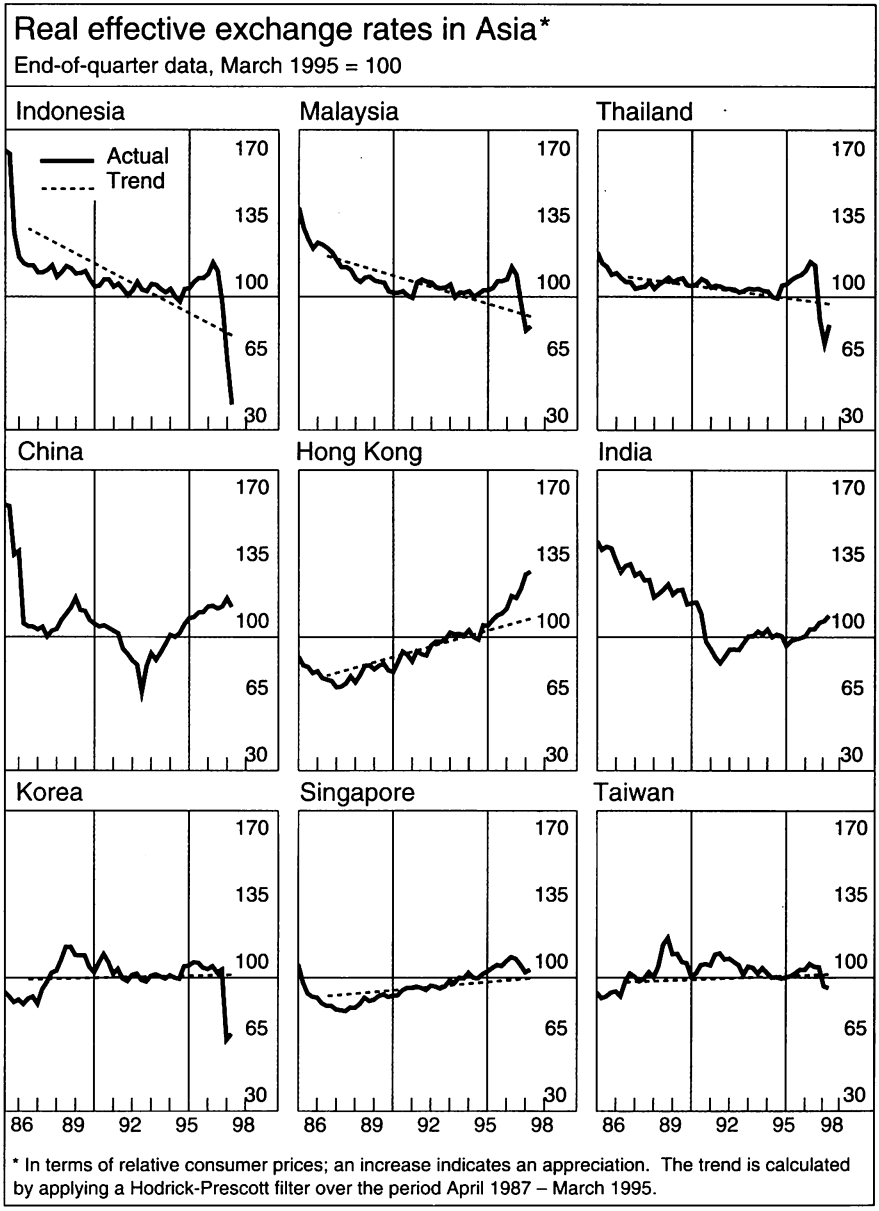
Graph 2



[1]Weighted average of the United States, Japan, Germany, France and the United Kingdom. [2]Overnight rate; the peak and the trough define the shaded area, which represents a period of monetary tightening. [3]Broad money growth deflated by 12-month changes in consumer prices. [4]IFC indices; for Asia, excluding Hong Kong, Japan and Singapore. [5]Exchange-rate-adjusted changes in BIS reporting banks' claims vis-à-vis non-banks in Asia and Latin America. [6]Excluding Japan.

Sources: International Finance Corporation (IFC), national data and BIS.

Graph 3

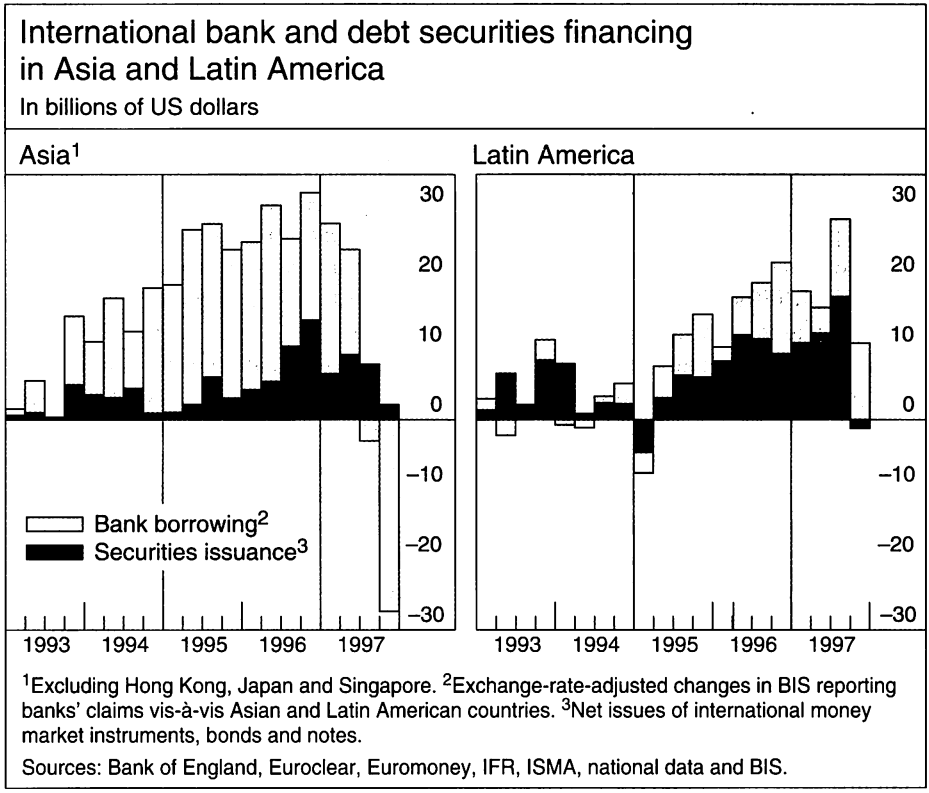

Real effective exchange rates in Asia*
End-of-quarter data, March 1995 = 100
Indonesia
Malaysia
Thailand
China
Hong Kong
India
Korea
Singapore
Taiwan
Actual
Trend
170
135
100
65
30
86 89 92 95 98
* In terms of relative consumer prices; an increase indicates an appreciation. The trend is calculated by applying a Hodrick-Prescott filter over the period April 1987 – March 1995.

The last international problem faced in common by the affected Asian economies was a sharp loss of confidence among lenders and the sudden replacement of huge capital inflows by an equally rapid pace of outflows (Graph 4)[3]. In fact, as indicated in the most recent BIS Annual Report, it appears that hedge funds and mutual funds moderated their investment in the region much earlier than did the banks, which seem to bear prime responsibility for the brutality of the recorded swing in capital flows. Indeed, bank aversion to lending in the region even extended to the provision of trade credit, with Indonesia, Thailand and Korea all reporting difficulties in this area. Continued access to trade credit is particularly important if Asian countries are to reap competitive advantage from recent depreciations since most of their exports involve adding value to imported goods. The domestic difficulties of Japanese banks, which have been of particular importance in the Asian region, may have played a role in this regard.

Having said that many countries in the region shared certain domestic and international problems and were therefore vulnerable to crisis in similar ways, at least three separate *processes of contagion* can also be identified. The first of these is that most Asian countries are direct competitors in trade with at least one, and often a number of, other Asian countries. As indicated in Graph 5, the greater the correlation of export shares among a pair of countries, the greater was the tendency of those two countries' currencies to depreciate by more or less the same amount[4]. A second channel of contagion had to do with demonstration effects on the part of borrowers. In particular, when uncovered domestic borrowers saw what was happening in other Asian countries where the exchange rate peg had given way, they tried to cover themselves to avoid the same fate. However, this only served to increase the downward pressure on their own currencies. A third channel saw the crisis spread through the action of international lenders. Sometimes, heavy losses in one market (in the case of hedge funds) or redemption demands by retail investors (mutual funds) forced liquidation in several markets. Sometimes lenders responded rather mechanically to certain technical factors. For example, it is still typical for investors to calculate historical correlations between rates of return on investments in different countries; high correlations would thus lead to immediate selling of both sets of investments should one of them come under pressure. In a similarly technical vein, investors apparently found that liquidity in some national markets dried up under stress. Covering had then to be done in some other related market, a case of selling where one could rather than where one wanted, with the final result being that the related market was also subject to intensified strain.

3. This could arguably be described as an outcome of the crisis rather than a precondition. In a highly dynamic process, all such distinctions are obviously questionable.
4. At one extreme, Taiwan and Indonesia hardly compete in trade and the Indonesian rupiah could thus fall a long way without knock-on effects on the new Taiwan dollar (dot 49 in Graph 5). Conversely, Taiwan and Singapore compete directly in common export markets and it is interesting that both experienced the same degree of currency depreciation during the crisis (dot 34 in Graph 5).

Graph 4

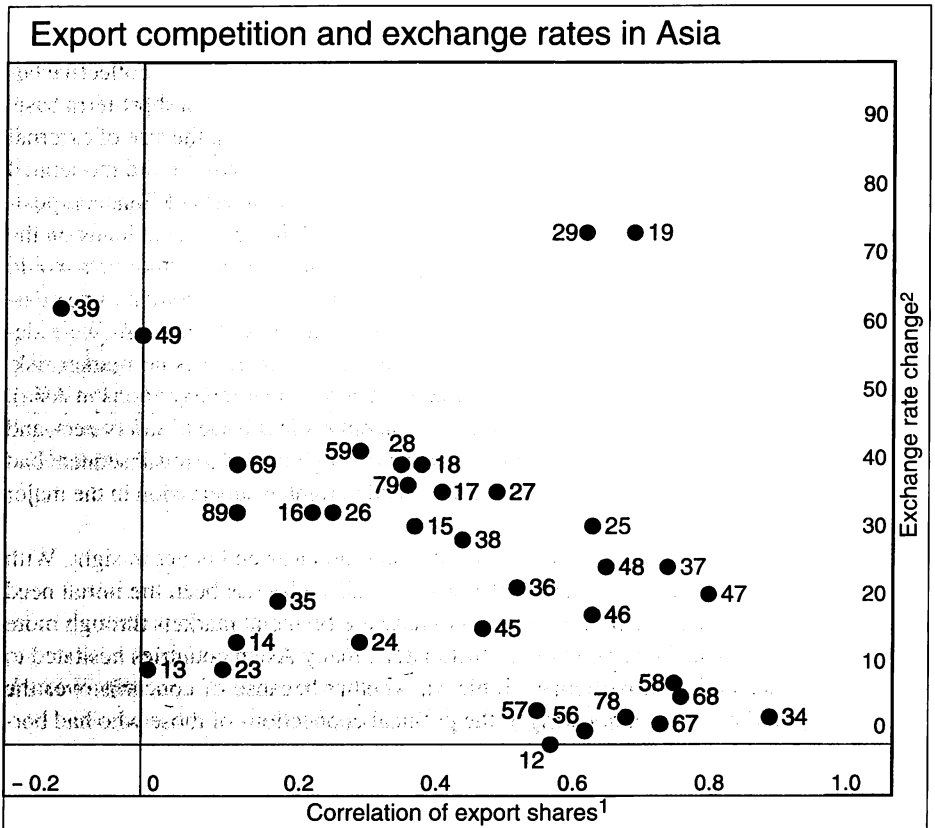


Crisis prevention and crisis resolution

Crisis prevention in individual countries, and therefore the risk of «contagion», begins with an attempt to reduce shared vulnerabilities whether on the domestic or the international front. Because these vulnerabilities were of many sorts, no magic bullet could have avoided all the problems to date. Nevertheless, some mitigation of the damage might have been possible.

Greater attention should have been paid to the domestic problem of «over-optimism» and excessive capital investment in Asia, particularly when these longer-term investments were being financed with short-term bank credit. Of course, historical experience going back several centuries in the industrial countries shows that this is easier said than done. Recognising this reality, a fall-back position might have been suggested similar to that followed by the Hong Kong and Singapore authorities. In both cases, great care was taken to try to ensure that the banking system would remain stable even in the case of a

Graph 5



Note: The dots represent pairs of exporters, where 1 = China, 2 = Hong Kong, 3 = Singapore, 4 = Taiwan, 5 = Philippines, 6 = Malaysia, 7 = Thailand, 8 = Korea and 9 = Indonesia. The shaded area indicates where the dots would fall if trade competition tightly constrained exchange rate changes.

[1]Correlations measured across shares in total exports of goods sent to the European Union, United States and Japan in 11 merchandise trade categories (SITC 65, 75–78, 82–85 and 87–88). A high correlation indicates a similar merchandise mix and similar export destinations. [2]Absolute difference in the percentage changes in exchange rates (measured as US dollars per unit of domestic currency) over 12 months to end-March 1998.

Sources: W. Melick and BIS using OECD data, Bankers Trust and Reuters.

major boom and bust in asset prices. High and even countercyclical capital ratios have been used to good effect, as has a sound supervisory and regulatory system. Everywhere in the region, better accounting, more transparency and improved corporate governance might have allowed market discipline to help avoid the worst of the recent excesses.

Four steps might have helped reduce the exposure to international shocks. First, a more flexible exchange rate system would have brought many advantages, not least the threat of a two-way market to those taking long positions in Asian currencies. Second, individual Asian borrowers and the national governments overseeing their collective behaviour should have been much more cautious in borrowing abroad on a short-term basis to fund long-term domestic investments. Third, better information on the size of external obligations relative to reserves might have cooled capital inflows earlier and moderated the abrupt reversal of capital flows that occurred as the true weakness of financial positions was revealed. And finally, international lenders were willing to make loans on the scale they did in large part because of a perception that public sector safety nets would mitigate the risk. Most loans were made to domestic banks that were thought to be guaranteed by the domestic sovereign: thus there was no credit risk. Most loans were denominated in hard currencies and were very short-term: thus there was no market risk. And, after the experience of the Mexican bailout (and subsequent interventions in Asia), there was a perception that there was no liquidity risk either. This issue of safety nets, and the need to balance short-term exigencies against providing incentives to subsequent bad behaviour, needs to be revisited. Indeed, we may need to tighten supervision in the major creditor countries as well.

Managing the Asian crisis has proved difficult and no clear end is yet in sight. With respect to the domestic policy reaction, the principal difficulty has been the initial need (clearly recognised by the IMF in its advice) to reassure financial markets through more stringent monetary and fiscal policies. Unfortunately, many Asian countries hesitated to tighten monetary policy in particular (Table 3), whether because of concerns over the health of the banking system or owing to the political connections of those who had borrowed heavily in domestic markets. This reluctance to act promptly and vigorously contributed to cumulative exchange rate declines which then prevented the subsequent (and potentially rapid) reduction in interest rates that might have been expected had market confidence been quickly re-established.

As for the role of the international community in managing the Asian crisis, here too certain dilemmas have become more obvious. The liquidity support packages offered to Thailand, Indonesia and Korea became successively larger and, in total, constituted a significant drain on the short-term liquidity of the IMF. While in fact not all the money promised was delivered (reflecting issues of conditionality), the Fund could well have found itself inadequately prepared to confront crises elsewhere. On the one hand, this implies that the support promised was too large. Yet, on the other hand, none of the promised packages was anywhere near the size of the short-term liabilities owed to foreigners by the domestic banking system alone. In this sense, the packages were too small to stop the stampede when concerns about liquidity did finally arise. Taking into account the need to trade off short-term survival and the moral hazard problems raised above, these considerations also imply that the role of the international community in the management and resolution of crises merits further scrutiny.

Table 3

Interest rates and the exchange rate during the crisis

	Interest rates					Exchange rate	
	Overnight rate		Three-month rate			Low[1] between July 1997 and March 1998	
	Peak	Date	1st half 1997	Peak	Date	Depreciation[2]	Date
Hong Kong	100.0	23.10	5.8	25.0	23.10	0	–
Taiwan	11.5	7.10	6.1	9.8	7.10	-19.3	12.1.98
Indonesia	300.0	25.8	13.7	27.7	31.10	-84.3	23.1.98
Korea	27.2	30.12	12.7	25.0[3]	23.12	-54.6	23.12
Malaysia	50.0	10.7	7.2	8.8	20.11	-46.3	8.1.98
Philippines	102.6	6.10	14.0	85.0	8.10	-41.8	7.1.98
Singapore	50.0	23.10	3.6	10.3	19.12	-21.0	12.1.98
Thailand	27.4	5.9	13.1	26.0	25.12	-55.0	12.1.98

Note: Dates refer to 1997 unless otherwise indicated.
[1] Closing rate. [2] Percentage change in the US dollar/local currency exchange rate since June 1997. [3] Not unique.

Peter Wuffli

International Contagion: What is it and what can be done against it?

If I look at the nomenclature of this conference, I believe that I probably belong to the species of bankers, and among those more to the practical bankers than to the theoretical bankers. That is why I do not want to offer a very academic definition of what contagion is, but rather talk about why it happens and what can be done to prevent it.

Why does contagion happen? There are, in my opinion, two possible sources. The *first* is an «accident», as in the case of Barings, which could spill over and would have spilled over in that specific case had other big players been vulnerable to that kind of accident. In the end, I believe that this type of contagion should be viewed as settlement risk, since the only risk which can have a major contagion effect in such a case is basically settlement. On the Sunday evening following that particular Friday afternoon, we already knew at SBC to what extent we were exposed to Barings. We know that it took other banks about five to seven days to understand the extent of their exposure. If four to five major institutions have that lack of information in the systems in place, and of limit systems to manage settlement, then contagion could arise.

From that point of view, the regulatory attention should not focus on capital but rather on supporting real-time settlement systems and on establishing clear standards on how to manage settlement risk in terms of identifying, measuring, managing and controlling it with appropriate limit systems.

Second, the other basic source of contagion risk consists of fundamentally flawed systems. One example was just shown in the case of Asia. We had others – we had the US in the early 90s, we had Scandinavia and Switzerland recently, we have Japan and Asia now and if you look back and analyse the sources, it usually has to do with the fact that credit risk systems are fundamentally flawed. We do have serious shortcomings in controlling credit risk. I was very happy to hear Mr Zuberbühler say this morning that after having spent all his energy on dealing with derivatives and risk management, he will now dedicate his time to credit risk, which in Switzerland alone has cost us 30 or 40 billion Swiss francs – nobody knows exactly how much. Such an initiative is well worth the effort because we lack nationally and globally acceptable and reasonable standards for credit risks such as ratings, definitions of non-performing assets or standards for provisioning.

At present, we have three fundamental flaws in credit risk management: *first*, the allocation of capital from a regulatory point of view where we basically apply the same amount of capital to a shaky emerging market counterpart as for any European Triple A company. This is just not prudent management. A *second* fundamental flaw lies in our accrual accounting system which hinders an economic assessment of credit over its lifetime and therefore leads to wrong incentives. Recognizing all the difficulties, it would nevertheless be advisable to go to a «mark credit to market» approach overtime. The *third* fundamental flaw is that accounting standards unfortunately do not permit cycle-adjusted statistics-base provisioning mechanisms such as we introduced after a combined FBC and SBC effort which resulted in the ACRA approach. The lack of such systems will lead to the fact that in good times one tends to underprovide as there is no incentive to have statistical provisions, which basically would help to provide appropriate cushions for a bad cycle. Credit risk is indeed a huge arena in need of improvement in order to reduce the fundamental contagion risk coming from structural problems.

Now how to deal with this? I do not share Mr Zuberbühler's concern about the issue of overall capital because one tends to forget that there is one extremely powerful ally on capital – the rating agencies. The rating agencies would never allow us to go to a minimum in Tier 1 capital and as you know we have, for example, set ourselves a Tier 1 ratio target of 8½ – 9%. This is approximately twice the amount we theoretically would have if we exploited all the regulatory margins. We know that if we went down to a Tier 1 ratio of 4½ or 5% or so, the rating agencies would most probably downgrade us to a single A or so. Therefore, the rating agencies practically help the regulators play the role of balancing the shareholder interests for increased return on equity.

An extremely important part of how to address the issues is a very strong and intense partnership between regulators and the banks. Although not having witnessed the 60s or

the 70s, I am nevertheless sure that the contact and type of relationship we have had with Mr Zuberbühler and his team over the past 12 months has probably been more intense than over a whole decade in the 60s and 70s. That undoubtedly encourages mutual understanding.

In such a partnership it is, however, important that banks and regulators each focus on their roles. From the bank's point of view, we perceive our role as having three major components:

The *first*, and most important, one, is to run the bank professionally. This means having strategies which focus on the business we understand, having structures which allocate clear accountabilities for risks and results, and having processes that balance the difficult tensions in bank management between reward and risk management, between independence and involvement as well as between proximity to customers and to centralized functions. Our *second* major role is to be state of the art in risk management, risk identification, risk measurement and risk control. The *third* role is to help identify sources of systemic risks, to set up settlement systems, to incorporate payment systems and to establish emergency procedures for crisis management.

Being humble and modest, it is obviously not up to us to define the roles of the regulators. Neither is it up to us to assess the «fitness and properness» of regulators. There are just three things we would expect or wish concerning the regulators.

The *first* one would be a globally integrated organisation of supervision. The current situation where the credibility of a single regulator is not broadly accepted is simply not acceptable. I am not a mathematician, but if you just multiply the number of issues in a given location which are interesting from a regulatory perspective by the number of locations and the number of regulators worldwide, you can easily calculate the number of relationships resulting in unmanageable complexity. So if New York starts to investigate not only New York but also Singapore, if Berne starts to investigate not only Switzerland but also Singapore and New York, and London starts to question what is happening in Switzerland, this will lead to an unacceptable situation. We sincerely hope that the regulators globalise their organisation in the same way as the banks had to globalise and basically accept the leading role of Switzerland as homeland regulator. Having seen the transformation of the FBC under Daniel Zuberbühler's leadership over the past five years, I can ascertain that today's high degree of professionalism should provide comfort to the other regulators that this role is being taken seriously. A good example is the initiative the FBC took together with us a couple of weeks ago in organising an international regulators' day in Zurich. Under the FBC's leadership we provided roughly 30 regulators with first hand information about where we stood in the merger process. This is the kind of organisational mechanisms that should take place to ensure a globally integrated supervisory approach.

A *second* expectation we have in our bank results from a principle which is internally called «value added leadership» whereupon each hierarchical level, in order to justify itself, should add some value to the whole. Drawing an analogy, one could propose a «value added supervisory approach», in that each layer of control starting from decen-

tralized internal control systems to group compliance, to internal audit, to external audit and finally to the supervisor should be justified by an incremental value added. Value added, as I see it, would come primarily in helping us to identify new risks, because once a risk is defined, it is usually easier to measure it, to manage it and to control it.

A good example of this is the year 2000 problem. Here it helped us to feel the pressure from the regulator early on in order to have a basic notion about the dimension of the year 2000 risk. This is but one example of how regulators could help us identify risks early on. It would have helped my predecessors enormously if one had received a hint 20 years ago about the issues related to unclaimed assets resulting from the Holocaust. It is this kind of value added to which I refer: not in the sense of just controlling what is there and whether it fits, but anticipating future risks and how we should prepare for them.

Third, we would emphasise that it is up to the banks and not to the regulators to run the banks. If regulators start to interfere in day-to-day management, not only will accountability be eroded, but inefficiency and ineffectiveness will grow. This is certainly not in the interest of the regulator either. For that I still lack good examples from my experience of the past six months, but I am sure they will come now that we are finally able to operate as a new bank. I am convinced that we will continue to have a good partnership in the future in order to help prevent contagion.

3. GENERAL DISCUSSION

BALTENSPERGER thanks the speakers and summarizes their views as follows:

(i) Contagion is a two-way phenomenon in the sense that it can happen not only in a downwards way, but also in an upwards way, and not only in bust time, but also in boom time.

(ii) It is generally difficult to reduce and regulate systemic risk.

He then opens the floor for general discussion.

KRAYER stresses the importance of HELLWIG's statement about the significance of not only the downside nature of contagion, but also contagion with respect to upside movements. He emphasizes that today many investors stay in the market although they clearly know stocks to be overvalued relative to fundamentals. He asks how we can look more seriously at these developments and how the building-up of bubbles can be counteracted.

Later on, SHEPHEARD-WALWYN comments on the problem of financial bubbles and points out that the financial market cannot get out of the real economy. He emphasizes that the focus on index-tracking in modern financial management increases the possibility of a bubble, and that research on fundamental variables is largely considered as contributing little in terms of value added.

ZUBERBÜHLER asks what recipes panelists have for Japanese banks. He argues that the interbank and systemic risks are related to how regulators have treated claims on banks.

He stresses that the exposure of western banks to the Japanese banking system is generally huge (also relative to South East Asia) and wonders how long government guarantees will hold.

BLATTNER comments that the Basle Accord had something to do with the Japanese from the beginning. When the international community of regulators talked itself into 8%, their objective was to increase the stability of the Japanese system. He asks how Zuberbühler explains that this obviously did not work.

EICHBERGER comes back to the conflict between regulators and banks and asks why it is not possible to privatize regulation and to have private firms supervising banks.

TERBERGER asks why, if one of the problems is competition, you do not «forbid» competition.

ZUBERBÜHLER comes back to BLATTNER's question of why the capital accord did not work in the case of Japanese banks and suggests that this was a valuation problem. Referring to Eichberger's question of why we do not have private supervision, he indicates the role of rating agencies and points out that in Switzerland we already have a high degree of private supervision under a public law regulatory umbrella. According to him, self-regulation has the same problems as public regulation. In the supervisory process, extensive use is made of private external audit firms to do the examination. ZUBERBÜHLER points to conflicts of interest faced by rating agencies and to the conflict of loyalty faced by external audit firms between the supervisor on the one hand and the client on the other hand who pays to get a rating or audit.

WHITE comes back to the Japanese banking system and emphasizes that a lot of people have suspected for a decade how bad the situation really was. What has recently changed is people's perception of the willingness of the Japanese government and the Japanese taxpayers to deal with the problem.

He is worried – concerning both Japan and Korea – about the way in which people seem to be saying that the minimum capital requirement is 8%, and this must be vigorously enforced regardless of circumstances. Thus, the banks currently feel the need to cut loans which is basically forcing them to do what capital ratios were originally designed to prevent.

It is of course possible that more rigorous accounting standards might reveal that an apparent 8% capital ratio was in fact significantly less. In this case, the preferred answer is still not credit rationing but rather a determined effort to restructure and recapitalise the banking system. Such a restructuring would in any event be desirable in many Asian countries, including Japan. When uncertainty about the solvency of clients is added to uncertainty about the solvency of the banks themselves, we have a recipe for harmful credit rationing. Restructuring and recapitalisation of banks addresses an important part of this problem.

On the point of competition, WHITE first stresses that competition is basically driven by technology and that there is no way to turn it back. Secondly, he thinks it is going to intensify and that supervisors should prepare themselves. He refers to Glass-Steagall which is disappearing in the United States, to a possible «Big Bang» in Japan, to dereg-

ulation in many emerging markets and to the introduction of the Euro. If life is already becoming tougher with respect to competition, it is going to become tougher still.

HELLWIG comments on the issue of valuations: If you cheat on values and you cheat on the accounting and this occurs on a large scale, that puts into question the way in which capital requirements or any other mechanical rule tied to accounting figures are practiced. From this HELLWIG draws two lessons: First, there should be less reliance on formulae that require trust in accounting figures which are easy to manipulate. Secondly, on the regulatory side, there should be a more comprehensive approach to risk management. He refers to the issue of looking at risk management and risk containment on a transactions-by-transactions basis without considering correlations. In the past, in a situation where the banking sector at least in many countries was not very competitive and therefore not very difficult to handle, one used simplicity of formulae in order to save on resources spent on regulation. He raises the question of how regulators can get staff from the market, given the increasing complexity of their task and given the salaries that are paid in the private sector.

BALTENSPERGER concludes the discussion, thanks all contributors and participants and hands over to KRAYER for the closing.