

**Systemic risks and financial crises<sup>1</sup>**

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## Preface

This paper is the first output of a research project, funded by SIDA, and undertaken at the Institute of Development Studies, Sussex University; the subject is regulating global capital flows, with special reference to flows going to developing countries.

This paper is also an input into a book, to be published by Chatham House, that will cover the following aspects: a) the new context for regulation in the 1990's (globalisation, securitisation, liberalisation); b) new forms of systemic risk; c) international regulation of banks and international lender of last resort; d) international regulation of securities; e) Mexican crisis, to determine modalities of volatility and how different actors contribute to it; f) policy implications from study for recipient countries and g) policy implications from study for source countries and for international institutions.

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## I. Introduction

The purpose of this paper is to examine the main systemic risks posed by private capital flows in general, and especially those posed by private capital flows going to developing countries. Unfortunately for Mexico and its' people, the Mexican financial crisis, which started in December 1994, provides an important case study of the systemic risks that can be caused by such flows and of the high cost (both for the international system and the Mexican domestic economy) which can be incurred by volatility in such flows. What is noteworthy and new about the Mexican crisis is that the flows involved were not mainly bank credit flows, but portfolio flows. This has important implications for the nature of the flows and their volatility, the need for - and form of response - by the international financial authorities, etc.

To put this analysis in context, we will first examine the relevant theoretical literature (section II). Secondly,(in section III), in the new context of globalisation of capital flows, and their trend towards securitisation, we will examine the nature of the response by regulators to these recent trends. We will focus here on the main systemic risks posed by capital flows, and especially those to developing countries (and illustrate them where relevant by the Mexican crisis). Section IV concludes with some preliminary proposals, which relate both to measures that could reduce significantly the risk that major financial crisis occur as well as to measures that may need to be adopted, in particular, for example use of some implicit or explicit lender of last resort mechanism - if a major financial crisis does break out. The need to link both aspects - ex-ante crisis avoidance mechanisms as a pre-condition to any ex-post safety net - will be emphasised. So will be the new nature of actions required due to the fact that most flows are now portfolio ones.

## II. Theoretical background

There have been fairly important advances in the theory of finance, which are of relevance to our study.

Recent developments in the theory of finance have advanced understanding of the role of debt, especially in the national context. The key issues in an analysis of debt are raised by the uncertain possibility that the borrower will default, given cost of default, asymmetric information and incomplete contracts. Lending is thus problematic because there is a risk of default, because defaults by borrowers will obviously be costly to creditors, because information that lenders have about borrowers is imperfect (and asymmetrical - that is, less than that which the borrowers have), and because it is not possible in an uncertain world to charge or collateralise fully against the risk of default.<sup>2</sup>

Several aspects of debt contracts determine credit availability (called credit rationing in the literature). Changes in the stringency of such rationing are central in the theory that links financial fragility and systemic risk. These links are also relevant in the way financial crises unfold in practice. Before continuing, we should perhaps define systemic risk as the danger that disturbances in one financial institution, market or country will generalise across the whole financial system, whether within one country or - worse still - in several countries.

In a seminal article, Stiglitz and Weiss<sup>3</sup> showed that credit rationing can arise even if a credit market is in equilibrium and there are no sticky prices or government regulation; such credit rationing is more likely to occur if there is imperfect and asymmetric information (the borrower knows more about his characteristics than the lender) and there are incomplete contracts (that is, lenders cannot control all aspects of the borrower's behaviour). Almost by definition, these two features are particularly common in international lending. The analysis is based on the argument that, if the above conditions are met, the interest rate which maximises

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<sup>2</sup> For a good discussion of these issues, see E. P. Davis Debt, Financial Fragility and Systemic Risk, Oxford University Press. 1992.

<sup>3</sup> Stiglitz, J., and Weiss, A., 1981 "Credit rationing in markets with imperfect information", American Economic Review 72

returns to the lender may be at a level such that demand for funds exceed supply. This is because interest rates influence the riskiness of loans in two ways. Firstly, because there is imperfect and asymmetrical information, higher interest rates are seen to increase average risk (this is the problem of adverse selection, that is a reduction in the average quality of applicants for loans due to its' increased price). Secondly, as interest rates rise, borrowers may begin to undertake projects which are more profitable - so they can pay higher interest rates - but that are also riskier; this is because under the conditions described above, there may be an optimal interest rate on loans, beyond which the return to the bank falls despite excess demand for loans; at this rate, the bank - fearful of default and not knowing which new borrowers would imply a higher risk - becomes unwilling to make new loans. As a result, certain borrowers may become unable to obtain loans at any interest rate at a given supply of credit. In this context, an increase in interest rates arising from tighter monetary policy may lead to a collapse of quantity-rationed credit markets, as it becomes unprofitable to make any advances. Below, we shall relate the argument directly to the link between US monetary policy and capital flows to emerging markets, especially Latin American ones, as discussed in Calvo, Leiderman and Reinhart<sup>4</sup>. Now, we will continue with the more general discussion that relates credit rationing to financial fragility and - ultimately - to financial crisis.

Building on the work of previous economists ( such as Alfred Marshall and Irving Fisher and particularly Minsky<sup>5</sup>), Kindleberger<sup>6</sup> had developed an approach which considers financial crises as a response to previous excesses linked to "euphoria". Drawing both on theoretical analysis, and on historical evidence, Kindleberger perceives a pattern. This starts with some significant event that greatly improves the perceived and real economic outlook, which he calls displacement. New opportunities for profits are seized - and overdone - "in ways so closely

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<sup>4</sup> Clavo, G., Leiderman, E., and Reinhart, C., (1993), "Capital inflows and real exchange rate in Latin America: the role of external factors, IMF Staff Papers, Vol. 40, No 1, March.

<sup>5</sup> Fisher (1933), "The Debt Deflation Theory of Great Depressions" Econometrica, 1: 337-57; Minsky, H., P., (1977) "A Theory of Systemic Fragility" in E., Altman and A., Sametz (eds.). Financial Crises. Wiley, New York.

<sup>6</sup> C., Kindleberger (1978), Manias, Panics and Crashes: A History of Financial Crises. Basic Books. New York.

resembling irrationality as to constitute a mania". However, once the excessive character of the upswing is realised, the financial system may experience "distress", in the course of which the rush to reverse the previous process may be so precipitous as to resemble "panic".

In Kindleberger's analysis there is emphasis on the role played by bank credit, and the financial system in general, in these boom-bust patterns. He thus stresses that "speculative manias" gather speed through expansion of money and credit, or - in some cases - get started because of an initial expansion of money and credit. However, behaviour is not just conditioned by monetary policy, but by dramatic changes in perceptions. In the times of boom, speculation is seen to develop in two stages; in the first, sober stage of investment, households, firms or investors respond to a "displacement" in a limited and rational way; in the second, capital gains play a dominating role. Kindleberger links these two stages to two groups of "speculators", the insiders and outsiders. The insiders destabilise by driving the price up and up, selling out at the top to the outsiders, who buy at the top, and sell out at the bottom when the insiders are driving the market down<sup>7</sup>. This distinction seems very relevant for developments in Mexico leading to the December 1994 crisis, as initially it apparently was mainly Mexicans (insiders) who invested on a large scale, by returning capital that had previously fled; however, since mid-1992 it seems that these local investors-fearing a large devaluation - started to pull out, selling paper to more bullish investors (who were mainly foreigners) who were still confident<sup>8</sup>.

Emphasis is also placed by Kindleberger on the fact that in crisis or panic, credit - at any price - may become unavailable. He argues (and illustrates rather convincingly with many historical examples) that in those circumstances markets are cleared by rationing (and not by market-clearing prices); when panic is severe, borrowing (or obtaining funds via other mechanisms) becomes impossible. Here we have the phenomenon of credit rationing that Stiglitz and Weiss

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<sup>7</sup> See, also, H. Johnson (1976) "Destabilising Speculation: A General Equilibrium Approach" *Journal of Political Economy*, 84, February.

<sup>8</sup> See, J. Ros "Financial Markets, Productive Sectors, and the Mexican Exchange Rate", Jan 1995.

have emphasised, but determined not mainly by high interest rates, but by the financial panic itself.

Thus, though monetary aspects of manias and panics are important, and better monetary policies are seen to moderate manias and panics in all cases - as well as eliminate some - even "optimal policies" could leave a residual problem; this view is based on the perception that even though financial markets work well most of the time, they occasionally break down. When this occurs, Kindleberger argues there is a clear case for government intervention to provide the public good of stability; in a crisis of significant proportion, the additional liquidity required can best be provided by the central bank acting as lender of last resort<sup>9</sup>.

Finally, it is interesting to note that Kindleberger stresses the international dimensions and character of financial crisis; indeed - correctly - he emphasises that the model of financial crisis applies perhaps best to foreign exchange markets. For this and other reasons, he argues strongly for an international lender of last resort (ILOLR), that he believes will shorten the depressions that often follow financial crisis.

Even though there is the risk of moral hazard, national financial crisis appear as less frequent since central banks operate as domestic lenders of last resort. A similar role is required internationally, because - as flows become globalised - responsibility for stability becomes an important public good also internationally. Kindleberger points to the IMF as an institution, which obviously does and should play a pivotal role as an international lender of last resort, but emphasises the relative slowness of the IMF to respond, which is problematic as was shown by the recent Mexican crisis. Following Bagehot, Kindleberger emphasises also the need for the ILOLR to lend at "penalty rates"; in the case of international lending this is not referred to the cost of loans, but to the "policy conditionality" attached to them. Finally,

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<sup>9</sup> For the classic statement on this, see Bagehot, W., (1873) Lombard Street: A Description of the Money Market; see also S. Griffith-Jones and M. Lipton "International Lenders of Last Resort: Are Changes Required?" in Z. Ros and S. Motamen (eds.) International Debt and Central Banking in the 1980's. Macmillan. 1987.

Bagehot had placed as a condition for an effective lender of last resort that it lends without limits. The IMF does have formal limits on its' levels of lending to countries (linked to the size of their quotas), but interestingly these limits were completely lifted when the IMF acted as virtual lender of last resort to Mexico in January 1995.

It is noteworthy that though the approach of Kindleberger (and his followers in the so-called financial fragility school) is widely seen as a long-established alternative approach to interpretation of the history of financial crises to the monetarist approach, the policy prescriptions originating from the monetarist analysis are fairly similar to those of the financial fragility school<sup>10</sup>. Thus, monetarist economists not only unsurprisingly prescribe a stable and predictable money supply path, but also emphasise the need for deposit insurance and/or a credible and pre-committed lender of last resort as essential to avoid runs or panics.

Monetarists' policy advice, that a stable price level is the best way to avoid financial instability, seems less relevant for recent foreign exchange crisis. Thus, Mexico's very low inflation rate did not really help stabilise flows to that country, as investors started to focus on the country's large current account deficit.

Economic theory based on the analysis of uncertainty also contributes elements to our understanding of financial crises<sup>11</sup>. Situations of uncertainty are particularly great in a context of financial innovation, when behaviour of such new instruments/mechanisms is not well known, and competition may narrow margins. Furthermore, uncertainty tends to be greatest in those markets that are either not regulated or are very incompletely regulated. Again this is very relevant to recent developments, which have occurred in a context of rapid de-regulation and financial innovation.

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<sup>10</sup> See, E P Davis, *op. cit*; see, also, for example, A. J. Schwartz, (1987) "The Lender of Last Resort and the Federal Safety Net". Journal of Financial Services Research, 1.

<sup>11</sup> See, for example, Shafer, J. R., (1986) "Managing Crises in the Emerging Financial Landscape" OECD Economic Studies, 8.



An increased level of uncertainty can lead to loss of confidence, and therefore panics in financial or securities markets. It is interesting that, according to this theory, negative surprises - in a context of uncertainty - can cause shifts of confidence and therefore runs that affect markets more than appears warranted by the intrinsic significance of such events. Again this is highly relevant to the Mexican situation, where a fairly small devaluation and a small deterioration in the situation in Chiapas, sparked off such a massive stampede of outflows. (Clearly the current account deficit was very large, but it had been like that for some time, without the markets reacting too much to it.)

This analysis has several policy implications. Firstly, it shows the relative unreliability of new mechanisms of foreign inflows, and the somewhat low probability that these flows will be sustained. Secondly, it emphasises the need to reduce uncertainty by pursuing sustainable and stable macro-economic policy in recipient countries. Thirdly, it shows the need for adequate regulation and supervision to avoid excessively risky behaviour by financial intermediaries, especially when dealing in new products and/or focusing on new markets. The latter is a difficult challenge, as regulators and supervisors need to understand and respond in an agile way to very rapid financial market developments.

Integrating the work of credit rationing by Stiglitz and Weiss discussed above, with the financial fragility approach (as developed by Kindleberger) and drawing on uncertainty theory, Guttentag and Herring<sup>12</sup> further theoretical understanding of financial crisis by a better explanation of abrupt increases in rationing.

Guttentag and Herring's model follows Kindleberger in dividing their analysis in different periods. Initially, there is a period when rationing constraints are excessively loosened. They argue that during this initial phase market participants do not know the uncertain distribution of disastrous outcomes, and as a result lenders' perceptions of risk (subjective probabilities)

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<sup>12</sup> Guttentag and Herring (1984) "Credit Rationing and Financial Disorder" *Journal of Finance*, 39.

may deviate from reality. Competition may imply that, as prudent lenders or investor are driven from the market, they are replaced by those willing to accept what is seen as a low probability danger; this attitude is called "disaster myopia", and is explained by both psychological and institutional mechanisms.

The psychological elements include "cognitive dissonance", which appears when new information becomes available which suggests that, opposite to previous assumptions, there is serious risk. However, "cognitive dissonance" protects decision makers' self-esteem, and leads them to ignore or reject the information, in an attempt to justify previous decisions. This could help explain why lenders and investors in Mexico ignored for so long negative information about the country's deteriorating current account.

Psychological biases can be reinforced by institutional factors, such as the brief periods during which performance of loan officer or investment managers is evaluated and the speed with which staff change position. There is also a possible asymmetry between results for managers (who get salary bonuses in times of extraordinary profit) and shareholders, as well as investors (who have to shoulder possible losses).

Once a shock happens, a financial crisis may occur, provoked by severe credit rationing. In such a context, confidence becomes crucial, and shocks often have consequences exceeding their intrinsic significance.

Guttentag and Herring describe a financial crises as a condition in which borrowers - who previously could borrow freely - become unable to borrow at any rate, while others who were formerly considered extremely good borrowers also face heavy premiums. This seems to describe well the situation in early 1995, when Mexico became practically unable to borrow or raise private funds at any rate, and even the best borrowers in Latin America (and even in other emerging markets) had to pay fairly large premiums.

Furthermore, for newly quantity-rationed borrowers, outstanding loans or investments may suddenly be well above what lenders and/or investors find acceptable, so that these lenders and investors take steps to reduce outstanding loans and/or investments. To the extent that the loans are very short term or the investments are liquid (as are practically most portfolio flows), and the wish to reduce existing exposure becomes widespread, runs from debtors can occur. According to this analysis, in such a situation it is not helpful to dampen a serious run by offering to pay higher interest rates, because - for a quantity-rationed borrower - the loan rate is already at the point to maximise the lender's return; furthermore, the likelihood of insolvency may make an offer to pay higher interest rates unacceptable.

The Guttentag Herring approach not only has policy implications for regulators, such as the need for appropriate risk weights and avoidance of excessive concentration of risk; as Davies, op. cit., points out it also poses challenges for financial institutions, to ensure that they learn from experience, in spite of turnover of staff and changing staff to deal with new modalities of loans or investments to similar clients. Furthermore, what has not yet been stressed, this analysis, and the pervasiveness of financial crisis, also has important implications for borrowers and/or recipients of portfolio investment, who must define their strategies in a way that takes account of this rather persistent pattern of fickleness of financial markets.

Another fruitful approach to financial crises focuses specifically on asymmetric information. As Mankiw<sup>13</sup> discusses, a large exogenous increase in interest rates can lead to a collapse in credit. Mishkin<sup>14</sup> develops this approach by analysing the mechanisms through which these problems can cause financial instability. First, if interest rates rise due to monetary tightening, adverse selection may increase sharply, leading to a large decline in lending. Secondly, increased uncertainty - which implies that lenders (or investors) find it more difficult to screen borrowers - increases the "adverse selection" problems which Stiglitz and Weiss described.

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<sup>13</sup> Mankiw N. G., (1986) "The allocation of Credit and Financial Collapse" Quarterly Journal of Economics 101.

<sup>14</sup> Mishkin F., (1991) "Asymmetric Information and Financial Crises: A Historical Perspective" in G. Hubbard (ed.) Financial Markets and Financial Crises. University of Chicago Press.

Mishkin further suggests that the impact is greatest on borrowers whose quality is difficult to determine; this again is particularly relevant for emerging markets.

In the field of flows to developing countries - and particularly to Latin America - Calvo, Leiderman and Reinhart, *op. cit.*, made a valuable contribution to the analysis. They drew not so much on the previous literature (though their study was clearly consistent with it), but based their work more on the analysis of Diaz-Alejandro<sup>15</sup> of transmission of financial shocks from "developed" countries to the "peripheral" economies; Calvo et al hypothesised that very important factors in determining the surge in capital flows to Latin America in the early 1990's were external factors to the region, and in particular low and falling interest rates in the United States, increased differentials between yields in Latin American countries and in the US, and recession or slow growth in the US. Indeed, their econometric analysis showed that, for most Latin American countries, foreign factors accounted for a sizeable fraction (around 50 per cent) of variations in capital inflows during the early 1990's. The important - and unheeded - implication was that when those external factors were reversed, this could result in capital outflows from Latin America; unfortunately, these fears were shown to be correct, as the rise in US interest rates and rapid US economic growth were important factors in explaining the changes in US capital flows to Latin America, and especially to Mexico, during 1994.

Calvo et al also add an interesting insight into the mechanisms whereby such reversals can happen. In an environment characterised by asymmetric information, a sudden capital outflow can lead lenders to conclude that the country suffered a negative supply shock, even if no shock happened. Furthermore, sudden capital outflows may lead to discontinuation of efficient investment projects. If start up costs of these projects are high, their discontinuation causes a loss; this is equivalent to an exogenous supply shock. As a result, the expectations that give rise to the capital outflows (by provoking a self-fulfilling prophecy) may become rational ex-post.

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<sup>15</sup> Diaz-Alejandro, C., "Latin American Debt: I Don't Think We Are in Kansas Anymore" Brookings Papers on Economic Activity, Vol. 2 (1984).

We can conclude that there is much in the theoretical literature that can further our understanding of financial fragility and crises. Two big tasks remain. The first one is to attempt to apply the theoretical literature to the (mainly portfolio) flows characterising financial markets both globally and as regards flows to developing countries, in the 1990's, which are very different from flows in previous periods, which were the basis for most of this theoretical analysis. The second is to try to extract implications for financial crisis avoidance and management in the new circumstances. The need - or not - for an explicit international lender of last resort, as well as measures to reduce the moral hazard necessarily linked to it, will provide a basis for our discussion. We will distinguish also necessary actions by different actors. These will include international public institutions - like the IMF and/or the BIS - Central Banks and Ministries of Finance, including particularly their regulators - both in source and recipient countries - as well as the private financial institutions and fund managers themselves. The key issue is that, at different levels, the repeated history and the theory of financial fragility and crisis and their implications for future crisis avoidance, based on current mechanisms and trends, are understood as clearly as possible, so as to be able to avoid future financial crisis, that are so costly to all concerned!

### III The Regulatory Response to Globalisation of Financial Flows

#### 1 An Analytical Context

As has been discussed in more detail elsewhere<sup>16</sup>, during the last decade, the size and structure of financial markets has undergone profound changes. Firstly, financial markets have become increasingly globalised and integrated. Secondly, the size and influence of financial markets increased markedly throughout all countries. Thirdly, there has been an important trend for

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<sup>16</sup> See S. Griffith-Jones (1993) "Globalisation of financial markets: new challenges for regulation" in J. Williamson et al. (eds.) Managing the International Financial System, FONDAD, Holland and Bank for International Settlements (1992) 62nd Annual Report, Basle.

dissolution of functional boundaries, particularly between banking and securities activities, leading to the creation of increasingly complex institutions, which integrate traditional banking services with various types of securities and - more recently - with the provision of insurance. Fourthly, there has been a vast expansion of available financial instruments, facilitated by the explosion of information technology. Finally, there was a greater institutionalisation of savings, that provided a base for the expansion of securities' markets; their push towards internationalisation and integration of markets.

In what follows, we will start by examining the regulatory response to these major changes.

Regulation can be defined as any non-fiscal government intervention in the operation of private sector markets. Our focus here is mainly with "prudential" or "safety and soundness" regulation, which is a regulation that tries to avoid "market failure" in financial markets, leading to crisis, and/or to minimise the effects of any crisis that may occur on the rest of the economy.

A key problem in regulatory action is that it so often only fully addresses a particular problem, or sector, once a crisis - and usually a fairly major one - has occurred. This is not because regulators are incompetent or lazy; on the contrary, they tend to be extremely bright and hard-working. The problems rather, are two-fold. 1) First, the information asymmetries that we have described above for market actors, also operate, to a certain extent and in different ways, for regulators. When a new instrument or sector is developed, it is difficult also for regulators to determine precisely what the risks - and especially the systemic risks - posed are, even though previous experience, in related or similar markets, as well as theory can help to sketch the broad contours of the risks involved. (An important policy challenge is to improve the learning mechanisms whereby supervisors, and market actors, learn from their mistakes, given rapid turnover of staff, or from the mistakes of others - in other sectors or countries; the latter is made particularly difficult by the fact that there is too much readiness to assume that each domestic situation is unique.)

Regulators do, however, have several advantages over market-actors. Firstly their explicit aim is to look for different kinds of risk, and how to minimise it and its effects. Indeed, regulators must, to an important extent, be assessed by their ability to prevent crises, and - if these do occur - by their ability to limit their impact. This is in contrast with private market institutions, where promotions and bonuses of staff tend to be linked to large short-term profits, and far less weight is given to the high, especially medium or long-term, risks which the operations generating the profits may be creating. These differential incentives would seem to be important elements in differential behaviour towards risk. Secondly, regulators take a more long-term and a broader view, as they attempt to take account of external diseconomies, which do not interest individual market actors. Indeed, economic theory shows that, if as a consequence of a firm's production, there are direct effects on others, then the market outcome will not be efficient. Negative externalities can be found in financial services in a number of areas. For example, the failure of one bank may cause poorly informed depositors to run on a neighbouring bank. Another example is the fraudulent actions of one securities firm causing the public to believe that other firms could or would act fraudulently.<sup>17</sup> Thirdly, regulators may have access to information which institutions would prefer to keep secret from the market. Indeed, it has been argued<sup>18</sup> that without a central, non-commercial organisation (like regulatory and supervising agencies), there might be no mechanism whereby reliable judgements on the creditworthiness of many institutions could be made, as information crucial to form such judgements might not be disclosed to commercial institutions. However, regulators also have some disadvantage over market actors, in that they have a less detailed knowledge of certain aspects and details of transactions occurring in the market place.

2) Secondly, when new financial instruments and/or sectors are being developed, there is a sense of excitement in the markets, encouraged both by the novelty and the large profits normally being made. There is then a strong wave of "market knows best" sentiment, which is

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<sup>17</sup> L. White, "Competition versus Harmonisation: An Overview of International Regulation of Financial Services", CEPR London, paper presented to April 1994 Conference on Industrial Organisation and Finance.

<sup>18</sup> D. Miles, Some Economic Issues in the Regulation of Financial Markets, Special Paper 013, LSE Financial Markets Group, mimeo.

transmitted to governments and regulators; this sentiment is re-inforced by the enthusiasm of the users, who perceive only the advantages of new instruments or new sectors. The mixture of imperfect information and "market knows best" sentiment makes the task of regulators both difficult and unpopular.

Once an important failure - or crisis - has occurred, both information on the precise risks involved and awareness of the dangers involved increase substantially; as a result, regulatory action is usually taken. There may even be a risk of over-regulation of that particular instrument or sector, though this is not very likely.

In this context, it could be argued that - to a certain extent - regulation of the more traditional aspects of banking, including its international dimensions, has by now been relatively quite well addressed by the regulatory authorities, and that the outstanding issues, though some of them important, are mainly technical. However, these more traditional aspects of banking are precisely those which are growing less. The dynamic growth is in the securities activities of banks (including derivatives) and in securities more generally. Here there are many regulatory issues, which need tackling.

We will first examine briefly the progress already made in traditional banking regulation, focusing here - as well as in the analysis below - on regulators' efforts to co-ordinate their activities internationally.

## 2 International Co-ordination of More Traditional Banking

Until the mid-1970's, there was no formal machinery to co-ordinate national regulations of international banks. It was the disturbances following the Herstatt collapse in 1974 that centred attention in the interdependence of banking systems, leading to the creation of the Committee on Banking Regulation and Supervisory Practices (called "Cooke Committee"),



under the auspices of the BIS. This Committee's aim was to link different regulatory regimes to ensure that all banks were supervised according to certain broad principles.<sup>19</sup>

One of the first and most far-reaching Cooke Committee's initiatives was the development of broad guidelines for division of responsibilities among national supervisors. These guidelines, approved by the G-10 Central Bank Governors, became known as the "Basle Concordat". A key principle in it was that the supervision of solvency is essentially responsibility of the home authority in the case of foreign branches and primarily the responsibility of the host authority for foreign subsidiaries.

The controversy surrounding the management of Banco Ambrosiano's collapse in 1982 was an important factor catalysing the emergence of a revised version of the Concordat, that introduced more precise guidelines for the international supervision of holding companies. In this context, each national supervisory authority had to satisfy itself that its banks' foreign operations were being conducted in jurisdictions with proper supervisory practices and that foreign banks to which it was host were subject also to adequately supervised in their home jurisdiction. If this was not possible, such operations should be discouraged or prohibited.

In July 1988, the Basle Committee launched a major new regulatory initiative, called the Basle Accord, with its announcement that G-10 countries had established minimum capital adequacy standards for international banks. The accord specifically mandated a minimum 8 per cent ratio of "recognised" capital to "risk weighted" credit exposures by the end of 1992. The objectives of doing so were two-fold: 1) to strengthen the soundness and stability of the international banking system; and 2) to ensure competitive equality among banks, to avoid that banks operating on a low capital/assets ratio support a higher level of banking business.<sup>20</sup>

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<sup>19</sup> See, R. Dale, 1994, "Issues in International Banking Regulation: Global Policies for Global Markets", Discussion Paper, No 94-80, April, Department of Accounting and Management Science, University of Southampton; see also, P. Cooke, 1981, "Developments in Co-operation among Bank Supervisory Authorities", Bank of England Quarterly Bulletin, 21 (2), June.

<sup>20</sup> See, Dale, *op. cit.*

This Accord had two major implications. Firstly, it represented the first move towards industrial countries' regulatory harmonisation, going well beyond previous attempts, which were focused on co-ordination of their national regimes. Secondly, and perhaps more importantly, from this moment, capital adequacy was placed at the heart of banking regulators' harmonisation efforts, trend which has continued till the present. This implies that the Basle capital adequacy ratio has been rather widely accepted as an indicator of banks' strength.

Though basically this approach is broadly seen as very valuable, there is some disagreement, both with its emphasis and motivation. Thus, some observers<sup>21</sup> stress that though capital adequacy is important, other variables - such as good management and asset quality - are also important, and may not be sufficiently considered in the harmonisation efforts. Also, some analysts<sup>22</sup> query that harmonisation of national regulations is essential for the reasons given above arguing that, instead, the more indirect need to limit the implicit subsidy that most governments will provide to financial institutions in case of failure, is the main justification for harmonising capital adequacy internationally. Thus, uniform capital adequacy requirements offset the "moral hazard" that can result from either explicit or implicit insurance given to financial institutions by governments.

Furthermore, there are some technical limitations of the Basle concept of capital adequacy. These relate mainly to the risk weighting of assets. For example, for commercial lending to the private sector, in developed countries, there is a uniform 0% risk weighting applicable, independently of the type or creditworthiness of the firm borrowing. Also, for commercial lending to developing countries, there is a uniform 100% risk weighting, independently of the creditworthiness of the country. Indeed, it is an incredible absurdity that reportedly<sup>23</sup> the risk weighting for Mexico fell significantly in early 1995 because Mexico had become the previous year a member of the OECD! Both for developed and developing countries, there are no differential risk weightings for a range of entities with different creditworthiness.

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21 Interview material.

22 See, for example, White, op. cit.; see also M. King, "International Harmonisation of the Regulation of Capital Markets: An Introduction", LSE Financial Markets Group Special Paper No 19.

23 Financial Times, 5 April, 1995, "Mexico is now past the worst" by S. Fidler.

Furthermore, the simple aggregation of risk-weighted assets under the Accord gives no recognition to the potential benefits of portfolio diversification. As Dale, *op. cit.*, points out this is in sharp contrast with the approach of some securities' regulators who allow for non-covariant risk exposures. Finally, but very importantly, disparities in national regulations, accounting practices and fiscal regimes imply important differences in provisioning policies in different countries. This considerably dilutes the effectiveness of capital adequacy, as resulting definitions of capital vary across countries.

Indeed, in this latter point we can see how the effectiveness of harmonisation of only some aspects of banking regulation (equal capital/assets ratios in different countries) is constrained by the fact that this harmonisation does not cover other closely related aspects, such as regulations on provisioning against losses and their tax treatment.

A final critique of the Basle rules was that they focused exclusively on the credit risks borne by banks in building their loan portfolios. As discussed below, the Basle Committee has taken on board this critique, and has prepared a set of revisions to cover other risks, and especially market risks.

The collapse of BCCI in 1991 prompted again a reassessment of the Basle approach to banking regulation. As a result, a new set of "minimum standards" for international banking supervision was issued.<sup>24</sup> Key in this statement is the condition that all international banks should be supervised by a home-country authority "that capably performs consolidated supervision"; the requisites for this are made explicit: the authority concerned should monitor banks' global operations based on verifiable consolidated data, be able to forbid the creation of corporate structures that impede consolidated supervision and be able to prevent banks from establishing a presence in jurisdictions that are not properly regulated.

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<sup>24</sup> Committee on Banking Regulations and Supervisory Practices, 1992, *Minimum standards for the supervision of international banking groups and their cross-border establishments*, June.

Given that there are such large differences in the quality of supervision amongst different countries,<sup>25</sup> the effectiveness of the new guidelines depends on the ability of national authorities to monitor each others' quality of supervision. This has to be done on the basis of the other country's statutory powers, administrative practices and supervisory record. It is difficult to see how bilateral links can provide relevant information, and there is, at present, no multilateral instrument for the task. Reportedly, the Bank of England has proposed a system of peer review under which each country's supervisory arrangements would be assessed by a panel of supervisory authorities for other countries. It is very interesting, in the context of our study, that the US Comptroller of the Currency has suggested<sup>26</sup> that if the Basle approach proves inadequate to the task then there may eventually be pressure for the International Monetary Fund to conduct formal supervisory reviews as part of its country surveillance procedures. This would be an important step as it would imply that the Fund, which is a truly global institution, and the one most in charge of managing the global economy - thus de facto being a very embryonic world central bank - would start undertaking some regulatory functions. Important parallels emerge here with national central banks and their development of a regulatory function. Furthermore, it seems very appropriate for the IMF to assist and surveille strengthening of LDC's financial markets, as well as of their supervision, because particularly in LDC's, crises that affect financial markets can have dramatic effects on macro economic policy. However, careful attention would need to be devoted to co-ordinating the well-established tasks carried out by the Basle Committee with the new functions exercised by the IMF.

### 3 Attempts at Co-ordinating New Risks in Banks

In April 1993, the Basle Committee on Banking Supervision released a proposal for banks to make capital changes for market risk in open positions (including derivative positions) in bank debt and equity trading books and in foreign exchange, as well as for dealing with netting risk.

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25 Interview material.

26 Office of the Comptroller of the Currency, 1991, Evidence Submitted to the House of Commons Treasury and Civil Service Committee.

This proposal was based on an important distinction between banks' long-term investments, to which the original Basle credit risk weightings are applied, and banks' trading books, to which the new capital requirements for market risk would be applied. Market risk can be defined as the risk that the value of marketable securities will change while the bank is holding a position in them. More specifically, it related to the risk of losses in on-and-off balance sheet positions, stemming from movements in market prices, including interest rates, exchange rates and equity values. The growing importance of market risk for banks is due both to the rapid development of securities and derivative markets, as well as foreign exchange contracts, and the increasing integration between banking and other activities, such as securities. Indeed, large variations in the market price of assets (such as shares) are a very important source and channel of transmission of potential shocks. As positions are increasingly taken across a large number of markets, both within countries and internationally, problems in one part of the market or in one country can be quickly transmitted to others.

The April 1993 proposal had two main objectives: 1) develop a means of calculating how much capital should be required to support trading portfolios of debt and equities, and portfolios of foreign exchange; and 2) define how the capital requirements could be met - that is, what instruments qualify as capital.

The market risk proposals could result in higher or lower capital requirements, depending on the risk profile of the individual institution. This is because some of the requirements would substitute for existing credit risk requirements. Furthermore, banks may have reduced overall capital charges to the extent that they have legally valid netting arrangements.

As the Basle Committee's 1993 document on banking regulations and supervisory practices stressed, its proposals relate to parallel work in two other foras, which have interacted with - and influenced the development of - capital requirements for banks' market risks. One relates to the European Community's attempts to establish a single market in banking and finance; because of the need perceived in Europe to create a level playing-field between banks and non-banks operating in the same securities' markets, the Community enacted a Capital Adequacy

Directive (CAD). The methodology of the CAD is in general similar to the initial proposals made by the Basle Committee. Where there were differences, the Basle Committee favoured a stricter prudential standard for banks than the EU rules. The second forum where parallel work has been in progress is the Technical Committee of IOSCO (International Organisation of Securities Commissions), which began to discuss the possibility of common minimum standards for securities' firms in 1987. Even though joint work was undertaken between IOSCO and Basle with a view to developing common minimum charges for banks' and securities' firms positions in traded debt securities and equities and related derivative instruments, these discussions have not yet lead to a successful result because IOSCO was unable to reach agreement in its own group in 1992. However, the Basle Committee - in anticipation of broader based convergence - is designing its approach with a view to its final application to a wider spectrum of institutions, than just banks. Furthermore, though IOSCO and Basle have not yet agreed common minimum capital charges fro banks and securities' firms, they have taken joint initiatives of a more limited kind, such as similar risk management guidelines for derivatives and starting joint work on the supervision of financial conglomerates.

In the discussion that followed the April 1993 Basle proposal, two different reactions emerged. A first one, raised criticisms with a view mainly to improve the proposals. A second proposed an alternative methodology.

In the first approach, a central concern raised was the extent to which bank supervisors should adjust their capital adequacy standards as was proposed, so as to achieve competitive equality between banks and non-bank securities firms, with an aim towards further convergence with securities' regulators at some future date. The problem is that the proposed adjustment lowers the levels of capital standards bank supervisors would like to apply to banks. As a consequence, the goal of safety and soundness is subordinated to the objective of equality of conditions for all financial institutions (both banks and non-banks) that carry out securities.

Secondly, it was stressed that the distinction between a bank's trading book and its longer term investments is in practice not so sharp. Indeed, the very need for such a distinction is debatable. As a result, another option would be to mark to market all banks' securities' holdings and then apply appropriate capital requirements based on market risk.

A rather different approach to that developed by the Basle Committee was suggested for example by Mark Brickell, a Vice-President at J.P. Morgan.<sup>27</sup> To overcome the limitations that J.P. Morgan and other large banks saw in the Basle approach, he proposed that - as part of the supervisory process - periodically G-10 banking supervisors could ask each bank to estimate the market value of, and gains and losses in, portfolios covered by the Basle proposal, and to explain what factors had caused changes in value; firms would also be asked to project variations in profit and loss over the next period. These analysis would become an important step in assessing whether or not a bank was adequately capitalised. As a historical record of actual changes was developed, banking supervisors - and managers - could compare projected to actual results, which would throw light on what banks should improve their trading management systems or would require larger amounts of capital to support market risk. Though such a proposal has some positive features, it seems to rely excessively on banks themselves to assess their own risks, which may be problematic in situations of uncertainty and imperfect information, and where - as discussed above - regulators seem to have certain informational advantages over market participants.

In addition to suggesting capital requirements to market risk, the April 1993 proposals had suggested a methodology for measuring interest rate risk. The focus here was on the extent to which the economic value of a bank is exposed to future changes in interest rates.

It is interesting that the approach taken by the Basle Committee to interest rate risk is more limited than that taken both for credit risk and that suggested for market risk. For the latter two, the Basle Committee designed a measurement system and defined capital requirements. For interest rate risk, the Committee merely wished to design a measurement system for

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<sup>27</sup> M. Brickell, "New tools for new rules", Risk, Vol. 7, No 1, January 1994.

supervisors to use, leaving them free to decide how to respond to institutions which they perceive as having high risk. This raises the issue of the desirability of having a common international methodology for interest rate risk measurement while delegating completely to national regulators the use of this information for actual supervision.

The fact that the Committee itself identified several important problems in its proposal showed its tentative nature and the complexity of the task involved.

Indeed, in April 1995, after further analysis and extensive consultations with the private banks, the Basle Committee produced new proposals for assessing capital needs against potential losses from financial trading. They proposed that some banks (the big ones) should be allowed to use their own in-house value-at-risk computer models to assess how much of their capital was at risk from trading losses. Banks using such internal models will have to set aside three times the amount of capital they calculate to be at risk. This is intended to compensate for the chance of more unstable markets than over the previous year, which will be the observation period used by banks. Furthermore, supervisors will impose a penalty - known as a "plus factor" - if the banks model fails to predict accurately trading losses. The standards adopted (for example, for the probability that the amount of capital at risk will not be higher than the capital charge) will reportedly be higher than those currently used by some banks.<sup>28</sup>

The current Chairman of the Basle Committee, Mr Tommaso Padoa-Schioppa, said the endorsement of banks' own models was "an important novelty". It implies a sharp increase in the long-term shift towards supervisors monitoring banks' management and control mechanisms, that is "market-friendly supervision" rather than imposing direct and strict limits on their activities<sup>29</sup>. Padoa Schioppa, and other regulators, argue that the best way forward for supervision of market risks is to enhance the disciplinary effects of markets. This is based on the assumption that, "in a world of advanced technology, widespread information and free capital flows, well-informed investors, depositors and creditors can instil discipline". This

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<sup>28</sup> Financial Times, 13 April, 1995, J. Gapper, "Basle model for banning safeguards".

<sup>29</sup> T. Padoa Schioppa, President, Basle Committee "Globalisation of risks: co-operation between banking and market regulators". Mimeo. 1995. IOSCO Annual Conference, Paris.



philosophy has led to the view that defences against risk have to be developed within rather than outside the market. The clearest manifestation of this new philosophy are the April 1995 Basle proposals, discussed above, to base large banks' capital requirements in respect of market risks on the estimates of their own internal models, subject to a series of quantitative and qualitative parameters. Such an important step seems a particularly bold - and somewhat controversial - move, in the wake of Barings' collapse, and other big losses by banks provoked by their trading activity. It implies a further move towards a more decentralised - and market based - style of regulation, with regulators assuming that they are increasingly unable to exert detailed control over banks' activities because of the growing sophistication of financial markets. As pointed out above, this may be rather problematic given imperfect information in the hands of market actors and external diseconomies in financial markets.

Indeed, a specific problem that arises in this context with the new Basle proposal is that the internal model approach leads to a dispersion of results, as different models used by different banks will come up with different levels of market risk, for an identical portfolio, and therefore correspondingly for different levels of capital requirements. This dispersion will only be partly moderated by the quantitative parameters which the Basle proposals have introduced to reduce the level of dispersion.

Regulators, (see Padoa Schioppa, *op. cit.*) while accepting that too much dispersion is not desirable, argue that "in the present state of uncertainty as to the "right" way to measure market risk, "some" dispersion is a quality, not a fault" as different views of risk enable markets to perform efficiently. This argument seems rather unconvincing, as it implies accepting that risks cannot be precisely estimated, which would seem to undermine the very essence of supervision and regulation.

Another problem of the current proposals for large banks is their incompatibility with the European Capital Adequacy Directive mentioned above, which is due to come into force in January 1996. The Basle revised proposal diverges in two aspects from the CAD regime.

Firstly, it recognises the internal link models for the calculation of "value at risk"; secondly, it has a more cautious capital adequacy standard for equity position risk; the Basle proposes a four per cent minimum charge against specific risk for diversified portfolios compared with the CAD's two per cent minimum<sup>30</sup>. If harmonisation were not achieved, large European banks would face the possibility of having to calculate capital charges according to the CAD approach, as well as according to their internal models. This duplication of regulatory requirements implying a dual regulatory regime for European banks, seems very undesirable, even though it is likely to be temporary, most probably till the CAD is adapted to Basle. This will take some time as CAD regulations have been approved as primary legislation. It is, however, encouraging that recently steps are being taken to attempt to make the EU CAD consistent, for a transitional period, with the Basle proposal<sup>31</sup>.

As mentioned above, the new Basle proposals refer to large banks. Smaller banks and those with limited trading activities would probably calculate capital requirements using the formula proposed by Basle in 1993.

As seen above, the Basle proposals on market risk incorporate capital adequacy requirements to cover banks' debt and equity derivatives. However, regulators' worries about derivatives go far further than an appropriate capital adequacy framework. Firstly, there is concern about the explosive growth in trading of financial derivatives. Secondly, there are fears that, by promoting speculation, derivatives increase the volatility of financial markets, and that the market linkages created by derivatives increase the potential for generalised financial contagion. Also, there are serious concerns - confirmed most recently by the Barings' collapse caused by derivatives - that the complexity of derivatives inhibits effective risk control both by senior management and regulators.

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<sup>30</sup> See, Financial Regulation Report, April 1995, Financial Times, London.

<sup>31</sup> Interview material.

We will return to the issue of derivatives in a separate paper, analysing issues of regulation of securities.<sup>32</sup> However, two points need stressing here. Firstly, major losses due to derivatives, as well as existing studies and research, show the urgency of appropriate regulation of banks' derivatives activities, even though the task is very complex. Secondly, the legitimate and important concern by regulators of the risks posed by derivatives may have distracted somewhat their attention from important risks emerging in other fields, and in particular from the also new risks posed by the very rapid growth of portfolio flows to some developing countries in the early 1990's. In this context, it is noteworthy that several important reviews of major regulatory issues published in late 1992 (by the US Treasury<sup>33</sup> and the IMF) rightly focused heavily on derivatives, but either ignored totally or mentioned only very briefly, the new risks posed by portfolio flows to developing countries, and in particular to Latin America. The magnitude of the Mexican crisis and its heavy cost demonstrates that this lack of attention was clearly incorrect.

#### 4 Protective Regulation: The Role of an International Lender of Last Resort in the 1990's

Besides international preventive regulation in banking, we also need to examine protective regulation, both as regards deposit insurance and - particularly - lender of last resort. We shall also extend the concept of lender of last resort beyond banking, to new areas relevant in the 1990's.

Particularly if deposit insurance is seen to be needed as a safeguard against systemic risk, there seems to be an important case for harmonisation of deposit insurance. However, if - as seems to occur in many countries - national authorities protect depositors in other ways, mainly by recapitalising failing institutions through public or private support, the need for harmonisation of deposit insurance is far less clear.

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<sup>32</sup> For a good overview, see B. Steil, "International Securities Market Regulation" in B. Steil (ed.), op. cit.

<sup>33</sup> US Treasury Report of the Secretary of the Treasury. US President's Working Group on Financial Markets in Financial Market Co-ordination and Regulatory Activities to Reduce Risks in the Financial System in 1993 and 1994, October 1994, Washington, D.C.

In the case of the lender of last resort, there seems a far stronger case for international harmonisation, which implies having some type of international lender of last resort (IOLLR). Internationally, as well as nationally, there is a strong case for a lender of last resort. This is based on the fact that financial systems have "multiple equilibria", one of which is when everyone believes that "runs" (e.g. on deposits, but also on marketable assets) will not occur; the other equilibrium is when - rationally or irrationally - fears emerge of the underlying value of assets, leading to withdrawal of deposits or sales of marketable assets. The need to keep the financial system functioning efficiently by avoiding such runs justifies the lender of last resort, which provides the public good of financial stability, that will reduce costs to the real economy of financial crises.

As discussed above (section II), traditionally the function of the lender of last resort is to lend, without limits, at a penalty rate, against good collateral, to solvent institutions which are experiencing liquidity problems.

However, as can be seen in Table 1, there has been a tendency for central banks - or governments - to increasingly also back insolvent banks. This trend started in the eighties in developing countries, where very large funds - as proportion of GDP - were devoted by central banks to save private commercial banks (whose problems were provoked or accentuated by the external debt crisis of the 1980's); more recently, several developed countries governments - and in particular the Scandinavian ones - provided capital infusions to insolvent institutions on a fairly large scale. Most recently - and possibly most controversial - is public backing, mainly in the form of guarantees, given for the large bail-out of Credit Lyonnaise.

Another issue which has been opened in relation to the lender of last resort is what entities are eligible for such support. Firstly, this relates to the fusion of banking and securities in conglomerates. In this context, a lender of last resort cannot avoid supporting the securities' operations of banks. Even if banks' securities activities are carried out by separate subsidiaries, banks will - if the security is in trouble - be forced to support it; this,

**Table 1****Bank Support Operations in Selected, Developing and Developed Countries**

(Government support as % of GDP)

Year	Argentina	Chile	Philippines	Norway	Finland	Sweden
1980	-0.6		-0.1			
1981	1.0		-0.4			
1982	2.6		-2.3			
1983	3.4	-2.4	-3.8			
1984	5.5	average	-5.4			
1985	2.8	annually	-2.8			
1986	1.6		-3.1			
1987	0.9		-1.6			
1988	0.7		-2.1	0.03		
1989	5.9		-2.3	0.10		
1990	1.0	-2.1	-2.0	-		
1991	0.6	-1.3	-1.7	1.20	0.8	0.3
1992	n.a	n.a	-1.6	1.70	6.2	2.0
1993	n.a	n.a	n.a			2.4

Sources: Based on R. Vos "Financial Liberalisation, Growth and Adjustment: Some Lessons in Developing Countries" in S. Griffith-Jones and Z. Drabek, Financial Reform in Central and Eastern Europe, Macmillan, 1995, for developing countries, and BIS, 63rd Annual Report, June 1993, for developed countries.

Note: There may be some problems of comparability, as methods for rescue differ amongst different countries.

again, would bring in the lender of last resort to support securities activities. This issue will increase in importance as banks' continue to increase their securities' activities; already over 50% of profits of banks originate in securities' activities.<sup>34</sup> Secondly, and more generally, during the 1987 equity market crash, the US Fed acted de facto as lender of last resort to the securities' markets, as when the crisis became serious, it announced that "there will be enough liquidity to cover the surge in trading". This allowed for the massive settlements required to take place without problem.<sup>35</sup> De facto, the Fed was acting as a lender of last resort for securities. This fact shows that issues of systemic risk have also spread to securities' activities. Thirdly, and even more broadly, the IMF and the US Treasury acted internationally in early 1995, not only as a lender of last resort by lending to Mexico; also, these institutions acted as a lender of last resort to a recipient country, instead of to a creditor financial institution. Thus, the concept of lender of last resort was broadened, in two ways: an international dimension was added, and it was applied to a country rather than to a bank or a financial institution. As a result, the issues typically related to a lender of last resort - such as how to avoid moral hazard - both acquired an international dimension and became primarily - though not only - related to countries' economic conduct. Furthermore, an additional dimension of complexity was added to the issue of an international lender of last resort because in the 1990's, capital flows are mostly securitised, which seems to tend to make them far more volatile, as they can leave within a day; furthermore, the investors are more anonymous than in the past; as a consequence, negotiations with creditors are either far more difficult or impossible. This new situation is in sharp contrast with the previous Mexican debt crisis of the early 1980's, when as the crisis exploded in 1982 the stock of Mexican debt outstanding remained in the country, as the loans had been made on average for around seven years, and the banks could not withdraw there loans; furthermore, in the 1980's the stock of the debt could be rescheduled and "new money" (albeit involuntary one) arranged from the private banks to help service interest.

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34 Interview material.

35 Interview material.

The speed and the scale with which capital flows can leave countries in the 1990's, illustrated by the Mexican crisis, implies that any international lender of last resort must operate very quickly and on a very large scale. Indeed, the lending to Mexico done in early 1995 both by the IMF and the US Treasury surpassed several of the existing formal limits. For example, the loan by the IMF to Mexico, as a share of the country's quotas in the Fund, was well above the established limit. The latter point is consistent with Bagehot's principle that any lender of last resort must lend "freely", to be credible.

The Mexican package - and recent statements, for example by the IMF Managing Director, Mr Camdessus and US Treasury Secretary Rubin - argue - that the scale and volatility of today's cross-border flows may require some explicit global lender of last resort to compensate for such instability. Such a proposal requires careful study, first to determine if this is a desirable measure; if this were the case, it needs to be designed in ways that it maximises its benefits and minimises its' costs, both in financial terms and in reducing the risk of "moral hazard".

In this context, it is interesting that the justification given by the IMF and the US Government to act as a de facto lender of last resort was based on "the systemic risk posed by the Mexican situation".<sup>36</sup> It could perhaps more precisely be called systemic contagion risk, to differentiate it from more traditional systemic risk, which threatens banks, or more broadly financial institutions. Indeed, the two risks highlighted by the Managing Director of the IMF were: a) the crisis of confidence in Mexico could have raised doubts about the situation in other countries, even where these were not warranted by fundamentals. This was seen to seriously threaten the continued flow of international capital to developing countries, "undermining developing countries' growth prospects". In this context, the fear was expressed that if the IMF and the US Government had not acted, Mexico could have been forced to default, with very negative effects world wide. b) A second systemic contagion risk highlighted by Michael Camdessus - and also stressed by top US authorities like Treasury Secretary Rubin and Under-

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<sup>36</sup> See M. Camdessus, Press Conference of Managing Director IMF, 2 Feb., 1995, IMF, mimeo.

Secretary Summers - is that a perception of failure in Mexico (because this country was so widely seen as a shining example of the market approach recommended by the international community) could lead "to the view being spread that the market-based approach to development had failed". In this context, the IMF and the US Government felt they had to act on a major scale to safeguard "economic success of a country that had so resolutely followed economic reform".

If a lender of last resort facility were created - or further rescue packages à la Mexico were assembled in an ad-hoc fashion - two important issues need to be examined. Firstly, under what circumstances would such a global safety net be activated? What should be the specific criteria for it to act? On what scale? Would it apply to any country or just to "solvent" countries? (US Authorities have emphasised that in early 1995 Mexico is a fundamentally "sound" and "solvent" country, with its chief problem being one of illiquidity.<sup>37</sup>) If the criteria is "solvency", how should it be defined? Would the global safety net apply to small, as well as large developing countries? The latter point seems relevant as it has been argued that the safety net provided for Mexico was unique because "Mexico was so powerful an example for investors in many other nations".<sup>38</sup> This could be read to imply that more "low profile" countries could not aspire to such a safety net. On the other hand, this statement seems to be part of an effort of the US Authorities to signal that this is a "one-off" exercise, and that the US will not be "a general lender of last resort". This has historically been a standard attitude of lenders of last resort because they fear that any apparent generalisation from cases where their services were provided, may reduce prudence. This is the problem of moral hazard.

An alternative way of dealing with the crucial problem of moral hazard is to establish relatively explicit rules for an international lender of last resort, but accompany them with measures to contain - or ideally eliminate - such moral hazard. In the context of a facility to compensate for large and rapid outflows of private capital from emerging markets, the way to reduce or

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<sup>37</sup> See, for example, L. Summers, "Oral Testimony by the Under Secretary of the Treasury before the House Committee on International Relations", Treasury News, 7 March, 1995.

<sup>38</sup> L. Summers, "United States Support for Mexico", Brookings Institution, 3 March, 1995, US Treasury News.



eliminate moral hazard would be through one or more forms of indirect or direct constraints on cross border capital flows to emerging markets.

Perhaps the simplest (or the least difficult) option would be for the IMF to significantly enhance its surveillance - via Article 4 of its Articles of Agreement - precisely of those countries, which at the time do not require access to the IMF funding because they have so much access to private capital markets (as was the case of Mexico in the early 1990's). Indeed, the condition could be put that - for the IMF to be willing to act as lender of last resort in a future crisis involving major capital outflows - rigorous surveillance (on aspects such as exchange rate, monetary and fiscal policy, as well as possibly strengthening of the financial sector) would have had to have been previously accepted and implemented. This will not be easy to enforce, as countries are unwilling to accept conditions or even policy advice from institutions like the IMF, when they do not require loans from them at the time. It may therefore require some institutional changes.

It may be particularly effective and appropriate to minimise moral hazard via rigorous surveillance of emerging countries' policies because the lender of last resort facility would be made available to those countries. However, the benefits of the actions of the lender of last resort would spread also to other emerging markets and to the foreign investors and creditors.

As a consequence, it may also be appropriate - though clearly even more complex institutionally and less consistent with current fashions of liberalisation of international financial markets - to examine the option of home countries, where such flows originate, to impose some regulatory restrictions on their investors, to avoid excessive surges of easily reversible capital inflows to emerging countries. Such regulation could either be done by individual home countries, or by a group of them (e.g. via institutions like IOSCO, the BIS, or the IMF itself). It could refer to flows which look unsustainable, for example because the current account deficit they are contributing to fund in the emerging market is too large; as a result, such flows - if they were to be rapidly reversed - can generate large losses to the investors, costly adjustments to the recipient country, and may have global implications on

other emerging or even weak developed economies. Furthermore, as implied above, it may be appropriate to exercise some regulation of the flows by the source countries as a counter-part to an explicit lender of last resort, given that this facility - though made available to a developing country - will also benefit (and indeed may relatively benefit more) the foreign investors.

A final option that needs exploring is for recipient countries themselves to discourage easily reversible flows, in times of over-abundance. This has been done with some success by countries like Chile, which imposed reserve requirements and other disincentives on short term credit inflows, while successfully encouraging long-term foreign direct investment. If such measures were thought of in a context of reducing moral hazard for an international lender of last resort, they could be part of the policy suggestions relating to the IMF's more rigorous surveillance of countries at the time when they are not borrowing from it. Alternatively, developing countries could on their own initiative implement such disincentives for short-term flows, as Chile has to an important extent done, and as other countries, e.g. Malaysia, have also done<sup>39</sup>. One element that may make it easier to persuade recipient governments to control short-term inflows than to convince governments in source countries to discourage short-term outflows is that for the former, flows to emerging countries are still a fairly small proportion of their total flows, whilst for the latter, capital inflows from abroad have a major impact on their macro-economic variables and on their financial system.

#### IV Conclusions

Our survey of the theoretical literature seems to show that theory offers a number of useful insights for policy-makers and market actors. Most broadly, it provides a framework to understand financial fragility and crises, and therefore gives elements for how these can be

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<sup>39</sup> See, for example, R. Ffrench-Davis and S. Griffith-Jones, Surges in Capital Flows to Latin America, Lynne Rienner, 1995; see also M. Khan and C. Reinhart (eds.) 1995, Capital flows in the APEC region. IMF Occasional Paper 122, IMF, Washington, DC

avoided. For example, both financial institutions - and those who regulate them - need to design mechanisms to learn from both theory and from previous experience, even though they have fairly rapid turnover of staff and that often new staff deals with new modalities of loans or investments.

The theoretical analysis also throws some doubts on standard policy prescriptions to deal with financial crisis. For example, Guttentag and Herring's analysis concludes that when a large run occurs because outstanding loans or investments are well above what lenders and/or investors think are - in the new circumstances - unacceptable levels, it is not helpful to try to dampen the run by offering to pay higher interest rates. This matter may require further study.

Theoretical analysis and - above all - the recent experience with the Mexican crisis pose a number of very crucial issues for policy-makers, in industrial countries and market actors. For policy-makers in industrial countries, a central issue is whether a special facility should be created to compensate for the increased importance and apparently increased volatility of private capital flows to developing countries. Would the benefits of such a facility - greater financial stability, and smaller costs to the real economy of recessions after large financial crisis - outweigh the costs, of increasing moral hazard, which could significantly increase behaviour that makes crises more likely and more costly? If so, how could the benefits be maximised and costs minimised? We have attempted above to provide some initial elements for evaluating policy options, and in particular for examining ways in which moral hazard could be reduced both if an explicit lender of last resort were created or even if the international community only assumed implicitly that in future crises more "ad hoc" packages à la Mexico would again be adopted. Enhanced IMF surveillance of countries receiving large capital inflows may be the least difficult and the most appropriate option to reduce moral hazard. A somewhat more complex option could be complementary with IMF surveillance of countries; this would imply some additional regulatory restrictions on investors or some modification and harmonisation of existing regulations by home countries' governments to avoid excessive surges of easily reversible capital inflows to emerging markets. However, the fact that there is at present so little international harmonisation of non-bank securities would for example seem to pose a

fairly basic obstacle to any such attempt, even though progress made in harmonising regulation of bank securities would provide a partial basis.

Last but not least, it seems also essential for both private investors and borrowers from international markets, as well as recipient governments to benefit from the insights of theory and recent experience of financial crisis, and design self-regulation mechanisms to reduce - or diminish the impact of - volatility of flows.