



**XXVII ANNUAL CONFERENCE
OF MONETARY STUDIES**

**RECENT TURBULENCE IN EMERGING CAPITAL
MARKETS: LESSONS FOR FINANCIAL POLICY**

**John Montgomery
International Monetary Fund**

JACK TAR VILLAGE
FRIGATE BAY
ST KITTS



NOVEMBER 8 - 11, 1995

Recent Turbulence in Emerging Capital Markets: Lessons for Financial Policy

Presentation for the XXVII Annual Conference of Monetary Studies
Eastern Caribbean Central Bank, St. Kitts and Nevis
November 8, 1995

John D. Montgomery 1/
Research Department
International Monetary Fund
Washington, D.C. 20431, U.S.A.

One of the two topics of the IMF's 1995 International Capital Markets report was the turbulence in emerging markets in early 1995. 2/ The report took an in-depth look at the events surrounding Mexico's devaluation and subsequent floating of the peso in December 1994 and the ensuing turbulence in Mexican and other markets. This investigation allowed the report to extract various policy lessons from these events.

My discussion provides an overview of the conclusions of the report. I will first briefly recount the events of this episode. This description will be brief because these events are undoubtedly familiar to most readers. Then the policy lessons will be discussed in some more detail. The focus here will be on policy toward financial markets issues rather than macroeconomic policy. My discussion draws heavily from the text of the report.

An Overview of the Crisis

The precursors to the crisis can be found in the sizeable capital flows that headed toward "emerging markets" in the 1990-93 period. The reasons for these flows can be traced to three factors: First, many of the recipient countries had undertaken structural economic reforms. Some of the highly indebted countries had in addition restructured their foreign debt, some through packages involving the creation of Brady bonds. These measures made these markets more attractive both to foreign investors and to domestic investors considering repatriation of capital. Second, as recession hit the United States and other industrialized countries in the early 1990s, low interest rates and low credit demand in those countries left investors searching for higher yields, which they found in the emerging markets. Third, institutional investors in industrialized countries embraced the notion of international diversification. One of the markets into which they diversified was the "emerging market" class. As shown in table 1, capital

1/ This presentation is based on the IMF's 1995 Capital Markets report. However, the opinions expressed are mine alone, and do not necessarily reflect those of the International Monetary Fund, nor of other members of its staff, including the other authors of the report.

2/ See David Folkerts-Landau, Takatoshi Ito, and others, International Capital Markets: Developments, Prospects, and Policy Issues, Washington, International Monetary Fund, August 1995.

inflows to developing countries in aggregate grew from \$40 billion in 1990 to \$155 billion in 1993.

These inflows represented a marked turnaround from the low capital inflows and even net outflows of the preceding seven years, 1983-89. This turnaround was most pronounced for the developing countries of the Western Hemisphere, which as a group had experienced a cumulative net capital outflow of \$116 billion during 1983-89, received a cumulative net inflow of \$200 billion during 1990-94. Perhaps, the most surprising turnaround was in Mexico, where capital flows changed from a cumulative net outflow of about \$15 billion during 1983-89 to a cumulative net inflow of \$106 billion during 1990-94. In 1993, Mexico received \$34 billion of capital inflows, which amounted to 9 percent of Mexican GDP. That year, Mexico received 22 percent of total net capital flows to all developing countries, although its share of GDP in total GDP of these countries was only 8 percent. Capital flows into Mexico surged in late 1993 and early 1994 after the ratification of the North American Free Trade Agreement treaty by the U.S. Congress. In contrast, the change in flows was less pronounced for Asian countries, where flows increased from a cumulative net inflow of \$117 billion during 1983-89 to a cumulative inflow of \$261 billion during 1990-94.

These increased inflows were accompanied by a decline in interest rate spreads over comparable U.S. Treasury securities to historically low levels. Average spreads for developing country borrowers declined from 346 basis points in 1991 to 243 basis points in the fourth quarter of 1993. The decline was most pronounced for private sector borrowers: average spreads fell from 650 basis points in 1990 to 315 basis points in late 1993. Yields on five-year Mexican government bonds came down from 800 basis points over the comparable yield on U.S. Treasury bonds in late 1989 to less than 150 basis points in late 1993.

There was a change in one of the factors behind the surge in capital inflows, when the U.S. Federal Reserve raised interest rates in early 1994 in response to evidence of a continued economic expansion in the United States. The initial 25 basis point increase in the Federal funds rate in February 1994 was the first of six increases in that rate over the course of 1994, bringing the target rate up from 3 percent at the beginning of February to 5 1/2 percent at year end.

The initial Federal Reserve tightening in February, combined with signs of economic recovery in Europe as well, had a disproportionate effect on international bond markets in February and March 1994. Last year's Capital Markets report discussed this effect in detail. Emerging markets felt a sizeable increase in rates too, with spreads on these countries' bonds over U.S. Treasuries widening. Over February and March alone, spreads on Brady bonds issued by Argentina, Brazil, Mexico and the Philippines widened by amounts ranging between 132 and 575 basis points. Over the course of the year, emerging equity markets were also hard hit: share prices declined by more than 10 percent in Argentina, Venezuela, China, Hong Kong, Indonesia, Malaysia, the Philippines, and Thailand during the period from January to November 1994. Net portfolio investment in developing countries fell from \$88 billion in 1993 to \$62 billion in 1994, mostly due to a decline in

investment in the Western Hemisphere from \$54 billion in 1993 to \$29 billion in 1994.

It was against this background that particular shocks hit Mexico. On top of the general tightening of international capital market conditions in 1994, Mexico was hit by several political events that affected its financial markets. The first event was the disturbance in the state of Chiapas in January. Then in late March presidential candidate Colosio was assassinated. These events, along with the tightening of international interest rates, caused the spread of Mexican Brady bond yields over comparable U.S. Treasury securities widened to more than 400 basis points in April 1994. The Mexican Bolsa fell 9 percent in February, and by a further 14 percent in March. By April 1994, the inflow of capital into Mexico was no longer sufficient to finance the outflow of funds and the current account deficit, which exceeded 8 percent of GDP, and the Mexican authorities had to intervene to prevent the peso from breaking through its lower intervention limit.

The authorities sought to slow the sale of peso-denominated debt through an increased issue of a dollar-indexed, short-term security (the Tesobono). In this way, the foreign exchange risk associated with holding peso-denominated instruments was effectively transferred to the Mexican government. Domestic and foreign investors took the opportunity to exchange large amounts of their Cetes holdings--short-term, peso-denominated government obligations--for Tesobonos. From February to November 1994, Tesobonos outstanding expanded nearly tenfold to MexN\$82 billion, while Cetes fell by 53 percent to MexN\$42 billion. The Tesobonos, which sold at an average spread of 237 basis points above U.S. Treasury bills between January 29 and December 2, 1994, were popular with foreign bond funds which looked upon them as dollar securities that could be used to enhance the yield on their U.S. fixed-income portfolio.

Although reserves stood at \$28 billion before the assassination of presidential candidate Colosio on March 23, they fell by more than \$8 billion in April. Reserve levels improved slightly during the summer, but then an expansionary monetary policy contributed to further declines of \$4.8 billion and \$6.6 billion in November and December, respectively. By December 20, international reserves had fallen to \$10.5 billion, and the Mexican authorities devalued the peso by 15 percent, but they were forced to let the peso float on December 22, after losing another \$4 billion of reserves in two days. The peso fell from its postdevaluation level of 4.0 pesos per dollar to a 1994 low of 5.7 on December 27, when a Tesobono refinancing auction had to be canceled because investors were no longer willing to carry the sovereign risk of these obligations at rates acceptable to the Mexican authorities.

The devaluation and the decision to allow the peso to float--after repeated pronouncements to the contrary--took international investors by surprise, despite warnings from several noted economists and market commentators. Mexico had made available only limited economic data during 1994 and now had difficulties preventing market participants from expecting the worst. This translated in early January into doubts about Mexico's economic reform package and ultimately led to questions about Mexico's

ability to continue servicing its short-term debt. As a result, the quantities of bids at the Tesobono refinancing auctions in early January fell far short of the amounts offered.

The positive impact of the announcement of the U.S. support package on January 12 quickly dissipated with growing uncertainty about its approval in the U.S. Congress. Between January 13 and 30, the Bolsa fell 29 percent in dollar terms and the peso lost 17 percent of its value against the dollar. The international support package announced on January 31 temporarily calmed the waters, but uncertainty soon again continued to roil markets until the announcement of the new Mexican economic plan on March 9, when the peso hit a low of 7.45. The peso subsequently settled back to below 6 pesos to the dollar by the end of April, although it has depreciated again since last spring, particularly in recent weeks.

Doubts about Mexico's ability to service its international debt obligations forced domestic interest rates beyond what was justified by expectations of a further depreciation of the peso. A contractionary monetary policy added to the upward pressure. Short-term interest rates soared from below 40 percent in early February to a high of 80 percent in mid-March. Rates fell gradually after that, to below 40 percent by July. The combined impact of the devaluation and the high interest rates produced a trade surplus of \$240 million in February 1995 after a deficit of \$530 million in January.

Immediately after the devaluation, most of the larger Western Hemisphere developing countries experienced varying degrees of turbulence in their foreign exchange markets and registered marked declines in their equity markets. In the financial centers in Asia, however, there was no significant reaction to the events in Mexico in December. The announcement of the U.S. support package on January 11, and the beginning of negotiations between the International Monetary Fund and Mexican authorities, calmed markets and forestalled greater spillovers; however, as the Mexican crisis had deepened in early January and as growing doubts about the successful completion of the support package for Mexico once again raised the possibility that Mexico might not be able to service its short-term debt spillovers extended to Asia as well. Most Asian developing country currencies came under attack in mid-January, requiring intervention and defensive interest rate increases. Securities markets in some Asian countries also dropped sharply in mid-January 1995. For instance, stock markets in Hong Kong and Singapore fell by about 9 percent between January 18 and 24, and equity prices in Indonesia, Malaysia, and the Philippines fell by roughly 10 percent in January. Hong Kong's currency board exchange rate arrangement also experienced strong speculative pressure, forcing the Hong Kong Monetary Authority (HKMA) to tighten liquidity to force overnight interest rates to rise by 5 percentage points on January 13. However, exchange rates, interest rates, and stock prices quickly stabilized in most Asian countries, but at discounted values from their earlier levels. The successful conclusion of negotiations with the IMF and the announcement of an international support package of nearly \$50 billion (including \$17.8 billion from the IMF) was instrumental in containing further spillovers into emerging markets in the Western Hemisphere and Asia.

Apart from Mexico, one of the hardest hit countries was Argentina, which like Mexico had had a fixed exchange regime and large capital inflows. Stock and bond prices in Argentina fell by as much as 50 percent from December 20, 1994 until they reached bottom in early March 1995. Yield spreads on Brady bonds (over U.S. Treasury bonds) for Argentina widened along with those of Mexico from December 1994 through the end of February 1995. Commercial bank deposits in Argentina fell by 16 percent (more than \$7.5 billion) from mid-December 1994 to the end of March 1995. Because of the currency board system in Argentina, foreign currency withdrawals translated into contractions of the monetary base and, via the money multiplier, into a contraction of domestic credit and a rise in interest rates. Argentina's foreign reserves declined by almost \$5 billion over the same period and prime interest rates rose by 33 percentage points to nearly 50 percent in mid-March. The pressures subsided after a number of financial measures were implemented, including the relaxation of reserve requirements and the announcement of the creation of a bank support fund, and, most significantly, a revised economic program with support from the IMF was announced in March.

Lessons for Financial Policy

Why did this turbulence happen? What policy actions may have contributed to the episode, and what measures alleviated it or could have alleviated it? The Capital Markets report consider a variety of aspects of policy related to the reversal of capital inflows. The focus is on policy toward financial markets, rather than macroeconomic policy.

Debt and reserve management

The events in Mexico illustrate how reliance on short-term debt finance indexed on foreign currency can make a country vulnerable to liquidity crises. As mentioned above, Mexican Tesobono liabilities had expanded rapidly since April 1994. By the end of November 1994, they totaled \$24 billion (about 6 percent of 1994 GDP) and comprised 50 percent of Mexico's domestic government debt. The depreciation of the peso in December and January caused the peso value of these dollar-indexed liabilities to skyrocket, reaching MexN\$149 billion, or 66 percent of total domestic debt. Investors' concern that Mexico might not be able to service its Tesobono obligations made them reluctant to roll over these bonds as they fell due in the early part of 1995, forcing significant increases in yields, as well as the outright cancellation of some Tesobono refinancing auctions. This in turn meant that scarce foreign exchange reserves had to be used to redeem the issues that were falling due. Domestic rates had to be raised to prevent a further capital outflow to halt the drain of reserves. The knowledge that, of the \$28.7 billion in Tesobono debt outstanding at the end of December, \$9.9 billion was scheduled to mature in the first quarter of 1995 put significant pressure on interest rates and on the exchange rate. The lesson here is that a longer maturity structure could have provided more breathing space for an orderly resolution of the crisis after the decision to float the peso in December. The exchange rate crisis may not have turned into a debt-service crisis had the maturity of the foreign currency indexed debt been longer.

The need to refinance a substantial volume of short-term debt at a turbulent time in exchange markets creates significant additional market pressure. Investors' doubts about the ability of the authorities to service their external debt is quickly translated into higher debt-servicing costs for the fraction of debt that is being rolled over during the turbulent period, and the larger the share of short-term debt, the more debt will have to be rolled over during that time, and the larger will be the increase in the debt-service burden. The increase in debt-servicing costs itself will also contribute to doubts about the countries' ability to service debt. At some point, further increases in yields will lead investors to avoid the market altogether, and refinancing will become impossible.

The events in Mexico and the rest of the emerging markets during 1994 demonstrated that the existing market mechanisms can absorb significant losses owing to declines in the value of equity and longer-term bonds. Major additional challenges arise, however, when, during periods of extreme turbulence--such as in the wake of a devaluation--a large volume of short-term debt must be refinanced. In the case of Mexico, the postdevaluation financial stress would have been easier to resolve without the necessity to refinance a large volume--relative to the existing stock of foreign exchange reserves--of maturing Tesobonos.

Mexico's experience with short-term debt demonstrates that emerging markets will need to manage the maturity structure of their foreign-currency linked debt in such a way as to minimize the risks of a liquidity crisis. The longer is the maturity of debt, the less likely it will be that major refinancing operations will coincide with periods of market turbulence, and the smaller will be the volume of debt that will need to be refinanced during a turbulent period. The need to refinance a significant volume of Tesobonos greatly contributed to the financial stress in the wake of the devaluation of the Mexican peso. With this in mind, emerging market countries should favor direct foreign investment over long-term portfolio investment, and long-term portfolio investment over short-term debt. If short-term exposures are necessary, then the rollover risk will need to be reduced through sufficient reserves and access to liquidity facilities, either official or private.

The importance of the banking system

The difficulties of Mexico and other countries with their banking systems demonstrate that banks can pose a considerable constraint on the defense of an exchange rate. As capital flows surge into a country, much of these flows are likely to pass through the banking system. Banks may find that their foreign currency liabilities exceed their foreign currency assets, so that as the currency is devalued, banks incur a loss. Prudential regulations limiting open foreign exchange positions can alleviate this problem. Banks can also feel the pinch as a country attempts to raise interest rates to defend its currency. For many banks, the duration of assets exceeds that of liabilities, more of which tend to be floating rate, so that interest rate hikes can reduce interest rate margins in the banking book and cause capital losses in a bank's trading book. A less direct effect, but as event have shown also very important, is that as monetary and

perhaps fiscal policy tightens and the domestic economy slows, banks' nonperforming loan balances mount.

All of these effects reduce the net worth of banks and can threaten their solvency. As is well known, it is crucial that the authorities have mechanisms in place to deal with this reduction in bank capital. First, adequate bank reporting and examination procedures are vital in order to insure that supervisors receive clear and accurate information about banks' financial positions. This includes adequate mechanisms for assessing asset quality, likely including on-site examinations. Second, supervisors must have the will and the authority either to close banks with low or negative capital or to effect their prompt recapitalization. If weak capitalization is not addressed, familiar moral hazard problems arise, as bank managers are induced to take excessively risky positions when faced with the "heads I win tails you lose" environment that low capital ratios imply.

The classical policy option for a central bank facing an attack on its pegged exchange rate is to use its foreign exchange reserves to buy its own currency and let domestic interest rates rise with the shrinking monetary base. The increase in short-term money market rates squeezes speculators by making them pay more for the funds they will need to deliver to make good on their short sales of the currency. The problem, however, is that the financial position of the banking system in many countries is such that authorities are frequently unable to let interest rates rise sufficiently to beat back the attack. It is common practice in most countries for banks to hold assets with longer maturities than their liabilities. To carry and manage such interest rate risk is, indeed, one of the main functions of the banking system. In practice, banks in developing countries may not be able to completely hedge such interest rate positions, and when short-term interest rates suddenly rise for a sustained period of time, the need to roll over the short-dated liabilities can seriously harm the income position of the banking system. In addition, other financial firms such as investment banks also tend to rely heavily on short-term borrowing to finance their trading positions.

A second and more indirect effect of a sudden increase in short-term rates is the increase in nonperforming loan assets on banks' balance sheets. Because bank debt is a key source of funding for industry in developing countries, any sustained increase in rates is likely to have a strong contractionary effect, which will bring with it an increase in the volume of nonperforming loans. Real estate and other asset prices often weaken with interest rate increases; thus, interest rate increases also reduce the value of the collateral against which loans were made. Similarly, household debt, for example, mortgages and credit cards, tends to be indexed to short-term rates, and, depending on its size and duration, an increase in rates will increase the rate of default on such debt. In Mexico, for example, most mortgage loans and consumer credit carry interest charges that are tied to the banks' short-term cost of funds. The growth in nonperforming assets and the decline in interest margins are all the more painful when the banking system is already struggling with poor asset quality, such as when the economy is in recession. Under such circumstances, the central bank's hands may be tied by the political unpopularity and economic effects of interest rate increases.

The recent Mexican experience is a case in point. The Mexican banking system began experiencing an increase in nonperforming loans well before the crisis. From 4.6 percent at the end of 1991, the ratio of past-due loans to total loans increased steadily, peaking at 8.5 percent in mid-1994. In response to the weakening of the banking sector following the devaluation, the Mexican authorities introduced in early 1995 a measure to strengthen the capital position of the banking system. At the time of the exchange rate crisis at the turn of the year, the banking system had already been sufficiently weakened by a growing stock of nonperforming loans that the authorities were reluctant to let the contractionary impact of its foreign exchange intervention be reflected fully in short-term interest rates. The need to stabilize the exchange market, however, as well as to achieve a contraction in domestic absorption, forced the Mexican authorities to let short-term interest rates rise to unprecedented levels. As the share of nonperforming loans continued to worsen in February and March 1995, and the risk of large-scale insolvencies increased, a plan to remove and restructure nonperforming loans totaling about MexN\$148 billion was introduced. A bank restructuring of such a magnitude also has fiscal and monetary implications that go beyond the immediate concern of how to recapitalize the banking system.

Where necessary, as in Mexico, a recapitalization of banking systems can be accomplished in three ways. First, loan losses can be monetized; inflation will reduce the real value of the bad loans relative to assets. In this case, the bank's creditors, mostly its depositors, would bear most of the losses. But the adjustment in inflationary expectations is likely to increase the pressure on the exchange rate, and further increases in real interest rates might be necessary. If loan losses are large, this solution might not produce a stable outcome. Second, the banking system can be recapitalized by exchanging nonperforming claims with explicit or implicit government claims in sufficient quantities to allow the bank to meet regulatory capital requirements. For this scheme to work, depositors must be persuaded that the economy will be able to generate sufficient real tax revenues to service the debt held by the banking system. Recapitalization of this form is usually accompanied by restrictions on banks: downsizing of balance sheets, streamlining of operations, reduced operating costs, possibly new management, and write-downs of equity positions. Third, a country can borrow from abroad to recapitalize its banking system. For example, in March 1995, Argentina and Mexico borrowed \$2.5 billion and \$2.25 billion, respectively, from the Inter-American Development Bank and the World Bank to finance bank recapitalization.^{1/}

An additional challenge exists under a currency board arrangement, such as in Argentina, Estonia, and Hong Kong. In these cases, the central bank cannot easily act as the lender of last resort. Because, at a minimum, central bank liabilities in domestic currency have to be backed one-for-one by foreign exchange reserves, the central bank is restricted in the amount

^{1/} It is also possible to recapitalize a banking system that is still solvent by borrowing in private capital markets. Argentina borrowed \$1 billion from foreign, and \$1 billion from domestic, private capital markets.

of liquidity it can provide to the banking system by the amount of reserves it holds over and above what is necessary to back the currency.^{1/} Hence, for a currency board arrangement to work effectively, the banking system has to be able to tolerate significant movements in domestic interest rates. Indeed, a weak banking system in a currency board arrangement may well carry the seed of destruction: it will induce a conversion of deposits into foreign exchange, shrink the monetary base further, and cause interest rates to rise higher, and thereby making the banking problem worse.

The Argentine banking system came under pressure immediately after the Mexican crisis, as investors fled the currency by converting their peso-denominated bank deposits into dollar-denominated bank deposits in Argentina. The currency board in Argentina converted commercial bank reserves into foreign currency so that capital outflows (increased demand for foreign currency) quickly led to pressure on the interbank interest rate, as banks tried to replenish their reserves by borrowing in the interbank market. As demand for domestic currency increased, banks replenished their liquid reserves with sales of domestic assets. Interest rates rose automatically, initiating all of the negative effects on the financial system discussed above. Moreover, concerns about the ability of banks to meet cash demands led depositors to reduce their exposure to domestic banks by converting peso and dollar deposits held in Argentina into foreign currency deposits abroad, thereby producing further pressure on interest rates. Following increases in interest rates in the early months of 1995, 33 small financial institutions requested credit assistance from the central bank in Argentina.

Contagion

As international diversification by investors continues, so has the risk that capital market disturbances in one country will affect investment in others. This happened after the Mexican exchange rate crisis in December 1994, as first Latin American countries were hit by falling stock market prices and foreign exchange pressure, and then other countries, including Asian emerging markets, experienced similar pressures. In general these pressures were greater in countries that financial market participants perceived as having weaker fundamentals, such as current account or fiscal deficits, greater reliance on foreign capital, lower domestic savings, and an appreciated real exchange rate. To the extent that a lesson can be drawn from this, it is that countries should keep their economic policy houses in as best order as possible, lest they be hurt by external capital market shocks.

Apart from these price and capital flow reaction, broader contagion does not seem to have occurred after the Mexican crisis. In part, this is due to the changing nature of capital flows since the early 1980s. A larger portion of capital flows into emerging markets recently has been in the form

^{1/} Foreign exchange reserves of the Hong Kong Exchange Fund are more than five times the amount of currency in circulation, which provides the Hong Kong Monetary Authority with greater latitude in providing liquidity assistance to banks.

of portfolio flows rather than bank loans. This meant that the global banking system was never seriously at risk from the turbulence in emerging markets, in contrast, at least possibly, to the debt crisis of the 1980s.

The progressive integration of the major developing countries into the global financial system has also meant that disturbances in any other market, industrial or emerging, are transmitted more rapidly to developing country markets. Empirical evidence confirms that the growth of gross cross-border capital flows over the past ten years has bound national equity and bond markets more closely together and that the transmission of disturbances occurs at a greater speed. This was amply demonstrated by events in the aftermath of the Mexican crisis: almost all of the major markets experienced major price adjustments and an increase in volatility as well as in trading volume. Even countries with sound fundamentals, for example, Singapore and Hong Kong, experienced significant, albeit temporary, exchange market turbulence in January, and in some countries this turbulence lasted for the better part of January. However, although the spillover from the Mexican exchange rate crisis was global in nature, and severe in many instances, the changed nature of capital flows to emerging markets implied that, unlike the 1982 debt crisis, the stability of the global banking and payments system in the major international financial centers was not as much at risk as it had been during the 1982 crisis.

The large exposure of the international banking system to developing countries in 1982 meant that Mexico's moratorium on debt-service payments in September 1982 posed a serious threat to the stability of the system. It became necessary for the major central banks to reassure markets and to press for an orderly resolution of the crisis. The stress was vividly apparent in the international interbank markets.

Today, a large volume of claims on developing countries takes the form of securitized lending by institutional investors, while the international banking system has a relatively small exposure in the form of syndicated loans to emerging market countries, and much of that tends to be in the form of short-term trade credits and project financing. Losses in mutual funds, however large, take time to work their way through the system, and they are likely to be only a small part of the end-investors' portfolios, and in any event such widely dispersed losses would not have any systemic implications for the global banking and payment systems.^{1/}

Furthermore, the equity and bond markets in the developing countries worked well. Although market liquidity became impaired in some countries, there was no evidence of a freezing up, despite the fact that a number of

^{1/} Nevertheless, market participants told of a significant volume, estimated in excess of \$20 billion of notional value, of options-like contracts with payoffs related to the future value of the peso that had been written by U.S. investment houses. These contracts are dollar bets on the peso/dollar exchange rate and are cash-settled in dollars without any immediate impact on the peso/dollar exchange rate, and again, the losses on these contracts are fairly widely dispersed.

equity markets were confronted with historically large price declines and large volumes. Many of the major emerging market countries have undertaken significant reforms to strengthen operational capabilities (for example, settlement and clearance systems, trading mechanisms) of their capital markets, and these reforms are now paying dividends. Finally, the international support packages for Mexico, assembled during January, forestalled further price declines and thus limited the potential risk of a breakdown in one of the major emerging markets.

Capital controls

Considerable controversy has surrounded the issue of capital controls. Mexico's experience showed the stress that a reversal of capital inflows can put on a country. Some have drawn the conclusion from this that countries can benefit from restricting inflows. The conclusion of the Capital Markets report is milder than this, however. The report notes that in some instances controls on inflows can be effective in actually restricting inflows. However, countries with well functioning financial regulatory infrastructure and consistent macroeconomic policies are better off with free capital movements. In countries without these prerequisites, carefully targeted capital controls might temporarily be useful as the country improves its financial regulation infrastructure, especially regarding the supervision of banks, and corrects macroeconomic imbalances, especially those related to capital inflows. In some cases, measures aimed at limiting bank exposures may be justified on a permanent basis as prudential measures.

The measures often generically referred to as "capital controls," in fact range from prudential controls on the banking system, to market-based measures, all the way to quantitative controls on inflows and outflows. In particular, these measures have included imposing or tightening prudential limits on banks' offshore borrowing and foreign exchange transactions (Indonesia, Malaysia, and the Philippines), as well as taxing some types of inflows by requiring non-interest-bearing reserves deposits against foreign currency borrowing by firms (Brazil, Chile, and Colombia). For example, in Chile, the measures have taken the form of non-interest-bearing 30 percent reserve deposits placed at the Central Bank for a period of one year on direct foreign currency borrowing by firms.

In some instances, measures have taken the form of quantitative restrictions. For example, Colombia restricts foreigners from investing in the domestic bond market. Malaysia responded to the inflow of speculative short-term bank deposits with the imposition of several quantitative measures. The most successful of these measures was the prohibition on domestic residents selling short-term money-market instruments to foreigners. In this case, abandoning the sterilization of foreign exchange intervention and imposing capital controls appear to have been successful in reducing domestic interest rates and short-term inflows. A number of countries, particularly Asian developing countries, have restrictions on foreign borrowing by domestic companies, and some have maintained prudential restrictions on financial institutions, such as restrictions on the open foreign exchange positions of banks.

It is dangerous to draw general conclusions about the consequences of "capital controls" without reference to the nature of such measures and the circumstances under which they were employed. On the one hand, comprehensive and detailed restrictions on capital inflows and outflows can have highly distorting effects, and such restrictions tend to erode over time. As the effectiveness of controls becomes weaker, authorities may be tempted to intensify them, increasing their distortionary effect. On the other hand, measures to discourage excess short-term, foreign currency denominated borrowing by banks, such as increased reserve requirements, can be justified on prudential grounds--bank failures can have significant real effects, as well as fiscal consequences, when deposits are de facto guaranteed. Such measures also tend to have a more permanent effect. Some strong measures, such as taxes on short-term capital flows and bans on the purchase of particular types of securities, may be justified only as temporary measures until domestic financial markets and institutions become well established and resilient, while some other types of prudential measures and reserve requirements can be justified as more permanent features of the regulatory framework.

For example, a review of the Chilean and Malaysian experiences reveals that, in the short run, the volume of inflows was reduced by capital controls during episodes of higher exchange rate volatility and little or no sterilization, in 1991 and 1994, respectively. Furthermore, capital controls were undoubtedly less important than sound fundamentals in explaining the long-run success of several countries cited above in dealing with capital inflows.

In this regard, it should be noted that both Hong Kong and Singapore have managed large capital inflows without recourse to capital controls. Therefore, although capital controls may be helpful at times, they are not the distinguishing feature characterizing countries that have dealt successfully with capital inflows and outflows. Imposing capital controls on outflows during a crisis is interpreted as a measure of despair and hence is counterproductive. Furthermore, market participants tend to view the control of capital outflows as a confiscatory measure, which can be expected to increase future borrowing costs, whereas preannounced taxes on short-term inflows avoid this stigma.

Transparency and the role of domestic investors

As emerging markets have become more liquid and open, the ability of domestic investors to reduce their exposure quickly has grown. This ability can be coupled with an asymmetry of information between domestic and foreign investors, as domestic investors are likely to be the first to find out about new developments affecting a country's attractiveness to investors. In this situation, transparency to international investors becomes important.

Domestic residents in emerging markets tend to be closer to sources of information about domestic economic events and prospects than foreign investors. They generally tend to be first in redenominating their domestic financial assets into foreign currency. They also often are the first class of investors back into the market: flight capital, for example, returned to

many emerging markets long before foreign investors saw the investment opportunities.

Another reason why resident investors in emerging market countries, tend to be the front-runners in a currency crisis is that the class of international investors that in the past five years has assumed this role in major markets--the hedge funds and the proprietary traders for international financial institutions--tend not to be able to participate, on a large scale, in developing-country currency crises. The primary mechanism of leveraged speculative position-taking (borrowing the currency from domestic banks, against a small margin, and selling the proceeds forward) is not generally available to them. First, central banks in developing countries typically impose constraints on the ability of banks to make a large liquid forward market, or they use moral suasion to inhibit the banking sector from lending for speculative position-taking against the currency. Second, even when such forward markets exist, speculative position-taking by institutions such as hedge funds is frequently curtailed by concerns about the ability of the banking system to deliver on the forward contract after the devaluation. In contrast, during the ERM crisis in 1992, most of the initial speculative position-taking against currencies perceived to be weak came from hedge funds and other international institutional investors.

The available data show that the pressure on Mexico's foreign exchange reserves during 1994, and in particular just prior to the devaluation, came not from foreign investors or from speculative position-taking by these investors, but from Mexican residents. Furthermore, during the two weeks preceding the Mexican devaluation in December 1994, there was little or no traditional speculative position-taking in the peso forward market. Mexican banks could not make credit available to speculators to sell pesos forward, as the Mexican central bank prohibits banks from selling long-term contracts for forward delivery of pesos.

One of the implications of this change in the financial environment is that the adequacy of a given stock of foreign exchange reserves under a regime of pegged rates cannot be gauged simply by tallying up external exposure: the authorities also need to consider the possibility that domestic investors can now readily redenominate their holdings of domestic financial assets into foreign currency. In addition, the general message emerging from these developments is that the room for policy slippage has been significantly reduced, because the disciplining mechanism of capital flight can be expected to be applied sooner, and to be more potent in the future.

Conclusion

The Mexican crisis and its aftermath showed the vulnerability of developing countries to shifts in capital flows. Some of the lessons to be drawn from the experience of Mexico and other countries relate to macroeconomic policy, and these have been addressed by other studies. The Capital Markets report this year focused more on implications for policy toward financial markets. It has been the goal of this presentation to summarize some of those lessons.

Both debt management and banking policy determine a country's vulnerability to capital flow and exchange rate disturbance. In order to defend an exchange rate, the authorities may have to tighten short-term interest rates, but their ability to do so may be severely constrained by the health of the banking system. Once a devaluation occurs, short-term foreign-currency linked debt may pose a problem, as exposure can quickly mount in domestic currency terms. In order to prevent a refinancing squeeze, debt maturities should not be bunched, and debt maturities should be lengthened as much as possible. Foreign exchange exposures of the banking system should be monitored, in order to prevent large banking losses in the event of a devaluation.

Capital controls may prove tempting, but these measures should generally only be considered as temporary measures to cope with a capital inflow. The exception is prudential measures for banks, including foreign exchange exposure limits. As markets become more integrated, shocks will spread from one country to another through adjustments by institutional investors. This increases the vulnerability of countries to shocks from elsewhere, but also creates an incentive for sound economic and financial policies. Another consequence of market integration is the ability of domestic investors to exit quickly from a market. This increases the benefits of transparency to reduce asymmetric information between domestic and foreign investors. Because bad economic news can more quickly be transmitted into capital outflows, it also increases the importance of sound economic policies.

Table 1. Capital Flows to Developing Countries^{1/}

(In billions of U.S. dollars)

	1977-82	1983-89	1990	1991	1992	1993	1994
	Annual average						
All developing countries ^{2/}							
Total net capital inflows	30.5	8.8	39.8	92.9	111.6	154.7	125.2
Foreign direct investment							
plus portfolio investment (net)	0.7	19.8	25.7	51.3	77.2	141.1	118.0
Net foreign direct investment	11.2	13.3	19.5	28.8	38.0	52.8	56.3
Net portfolio investment	-10.5	6.5	6.2	22.5	39.1	88.3	61.7
Other	29.8	-11.0	14.2	41.7	34.5	13.6	7.2
Asia							
Total net capital inflows	15.8	16.7	25.6	50.7	39.2	72.0	73.4
Foreign direct investment							
plus portfolio investment (net)	3.3	6.6	9.4	18.0	27.3	59.5	65.0
Net foreign direct investment	2.7	5.2	9.8	14.9	19.9	35.6	36.9
Net portfolio investment	0.6	1.4	-0.4	3.1	7.4	23.9	28.1
Other	12.5	10.1	16.2	32.7	11.9	12.5	8.4
Western Hemisphere							
Total net capital inflows	26.3	-16.6	17.9	28.6	52.6	62.3	38.6
Foreign direct investment							
plus portfolio investment (net)	6.9	3.2	12.4	27.9	40.2	67.6	44.2
Net foreign direct investment	5.3	4.4	6.8	11.2	12.9	13.8	14.8
Net portfolio investment	1.6	-1.2	5.6	16.7	27.3	53.8	29.4
Other	19.4	-19.8	5.5	0.7	12.4	-5.3	-5.6
Other ^{2/}							
Total net capital inflows	-11.6	8.7	-3.7	13.6	19.9	20.3	13.2
Foreign direct investment							
plus portfolio investment (net)	-9.5	10.0	3.9	5.4	9.7	13.9	8.8
Net foreign direct investment	3.2	3.7	2.9	2.7	5.3	3.3	4.6
Net portfolio investment	-12.7	6.3	1.0	2.7	4.4	10.6	4.2
Other	-2.1	-1.3	-7.6	8.3	10.2	6.4	4.4

Source: International Monetary Fund, World Economic Outlook database.

^{1/} Flows exclude exceptional financing. A number of countries do not report assets and liabilities separately. For these countries, it is assumed that there are no outflows, so that liabilities are set equal to the net value. To the extent that this assumption is not valid, the data underestimate the gross value. Adjustments are also made to the WEO data to net out the effects of bonds exchanged for commercial bank loans in debt and debt service reduction operations and to provide additional detail on selected private capital flows.

^{2/} Excludes capital exporting countries such as Kuwait and Saudi Arabia.