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Precautionary credit lines: A means to contain contagion in financial markets?

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Precautionary Credit Lines: A Means to Contain Contagion in Financial Markets?

by **Stefan M. Golder**

CONTENTS

- The liberalization of capital accounts and the integration of financial markets in recent years have helped to spur growth in many emerging markets and have allowed global investors to diversify risks internationally. Furthermore, increased capital mobility has helped to tame governments in their fiscal and monetary policies. Nevertheless, the Asian currency and financial crisis and its aftermath have revealed structural problems on the national as well as on the international level and have imposed significant costs on emerging markets as well as on the world economy.
- Triggered by these developments, a broad international consensus has emerged to support reforms to strengthen the international financial system. The aim of these reforms will be to create an international financial system that captures the benefits of open and integrated financial markets, and at the same time minimizes the risk of financial crises to emerge and spread to other countries. While the former refers to the need for greater transparency, accountability and prudential regulation, the latter is concerned with the improvement of existing and the creation of new mechanisms for the prevention and resolution of financial crises.
- International institutions such as the IMF can contribute to the stability of the international financial system. A prominent proposal initially raised by the Clinton administration in fall 1998 designs the creation of a new crisis facility of the IMF to prevent contagion in financial markets. On its recent meeting of April 23, the IMF's Executive Board agreed to provide Contingent Credit Lines for its member countries. The goal of such a facility is to provide preventive credit lines to countries whose economies are fundamentally sound, but which are threatened by financial market contagion and which may lose access to capital markets. In the absence of contagion, these countries should therefore be able to rely on a sustained flow of capital from abroad.
- The new facility gives rise to a number of questions. First, the distinction between countries in need of ex ante policy adjustments and countries that follow sound economic policies, i.e., the eligibility for the new facility, must be resolved in advance. Second, projections about the likely financial requirements of such a facility and the consequences for the Fund's liquidity position are needed. Another issue relates to the question whether and how private and bilateral creditors should be involved in this new facility. Finally, there is a need for clear guidelines about the terms and conditions that would apply to this new facility. However, as shown in the paper, it will prove difficult to fulfill these criteria and to avoid additional problems related to a precautionary credit line.
- Based on this skeptical judgment, the paper explores a number of alternative means to foster the stability of the international financial system through a better involvement of private sector creditors. This could be achieved through the introduction of option-type mechanisms that would allow debtors to trigger liquidity support in the case of a crisis. A more radical approach would involve limits to creditors in cases when they would like to reduce their short-term exposure. Another avenue would comprise a reorganization of private claims, either by modifying bond contracts or by adapting bankruptcy procedures. The main task for policy makers, however, remains to increase transparency and improve supervision in financial markets and to pursue sound economic policies.

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1. Introduction

The turbulence on world financial markets since the eruption of the financial crisis in Asia has raised questions about the stability of the international financial system and has contributed to uncertainties about global economic prospects. Against this background, much research has been done to study the causes of this crisis and to provide answers on how to foster the stability of the international financial system and to prevent or at least contain the spreading of future financial crises, thereby reducing the risk of contagion.¹ The volatility of short-term capital flows to emerging markets and the associated costs have raised questions about the desirability of unrestrained capital movements.²

While the benefits of free capital mobility are generally accepted, the importance of well-functioning domestic financial markets and of macroeconomic stability as prerequisites for a successful liberalization of capital account transactions has long been recognized.³ To the extent that the volatility of capital flows in Latin America in the mid-1990s and in Asia and in other emerging markets since mid-1997 reflected the absence of these fundamental conditions, the prime reason for the turbulence would be a failure of the sequencing of reforms. However, it cannot be excluded that volatility has been driven by factors not related to economic fundamentals, such as some forms of contagion. This, in turn, has prompted debates about the efficacy of restrictions on capital movements in certain circumstances and the need to reform the international financial system.⁴

Policy makers are increasingly concerned about the effects of the rapidly changing financial environment on monetary as well as financial stability. Financial liberalization and deregulation, the abolition of exchange controls, financial innovation, institutionalization and the growth of euro-markets constitute major elements of recent financial change. An important issue to be resolved concerns the role of international institutions, such as the IMF, in contributing to the stability of the international financial system. Against the background of the harsh public criticism of the IMF and the increased uncertainty on financial markets, political leaders of the G-7 announced a number of initiatives to reform the global financial system as well as the IMF preceding the 1998 annual meetings of the Bretton Woods institutions.⁵ President Clinton suggested the creation of a new crisis facility of the IMF to prevent the contagion of financial crises. This proposal was subsequently taken up by the G-7 in their declaration of October 30 where it was suggested that the IMF should become involved in the establishment of a precautionary credit line. Finally, on April 23, 1999, the IMF's Executive Board agreed to create a Contingent Credit Line for its members countries.⁶

The concept of a precautionary credit line is envisaged as a means by which the Fund will provide preventive credit lines to threatened countries whose economies are fundamentally sound, but which are concerned with the potential effects of contagion on their access to capi-

¹ An overview on research related to the Asian crisis and its aftermath can be found at Nouriel Roubini's Asian Crisis Homepage (see <http://www.stern.nyu.edu/~nroubini/asia/AsiaHomepage.html>). A concise analysis of the main problems ailing today's international financial system and a number of modest, but useful suggestions for reform can be found in Eichengreen (1999).

² A critical appraisal of the benefits of capital account liberalization can be found in Bhagwati (1998) and Rodrik (1998).

³ For an overview see Eichengreen et al. (1998c).

⁴ Arguments in favor of short-term capital controls can be found in Krugman (1998b, 1999a, 1999b).

⁵ Among these initiatives were the reactivation of the G-22 as a forum for discussion, as proposed by President Clinton. Furthermore, and also based on claims by the Clinton Administration, the World Bank created a new credit facility, so called "Emergency Structural Adjustment Loans". The goal of this new facility is to provide a stronger involvement of the World Bank in the resolution of financial crises. A proposal put forward by the French President Chirac concerned the activation of the IMF Council, as provided in the IMF's Articles of Agreement already since 1978, to gain more political control over the IMF. The Council would be equivalent to today's Interim Committee, with the exception that it would meet more frequently and be vested with more power.

⁶ IMF (1999c). See also Camdessus (1999) and Fischer (1999).

tal markets. Accordingly, these countries would not face an immediate balance of payments need and should not have a pressing need for adjustments or reforms, at least not in advance of the timetable they have set for themselves. In the normal course of events, these countries should therefore be able to rely on a continued flow of capital from abroad.

This paper provides an assessment of the likely merits and drawbacks of such an instrument to enhance the stability of the international financial system. The paper is divided in four parts. In the second section, we sketch the causes and characteristics of the recent crisis that started in Asia, then spread to Russia, and currently harms Brazil. We then turn to the discussion of financial market dynamics and contagion effects. In the third section, we analyze the impact of a precautionary credit line on the stability of the international financial system. As a result of the difficulties involved, we reject the creation of a precautionary credit line and instead discuss a number of alternative means to foster the stability of the international financial system. Problems associated with a precautionary credit line relate to the likely increase in moral hazard, difficulties in identifying pure contagion, the potentially large resource requirements, and problems in securing adequate conditionality. Alternative means to foster stability in international financial markets and to bail-in private sector creditors could involve option-type mechanisms as well as a reorganization of these claims through modifications in bond contracts or adaptations in bankruptcy procedures. In the fourth section, we provide some concluding remarks.

2. The Asian Crisis and Its Aftermath

The globalization and integration of international capital markets has contributed to higher investment, faster growth and rising living standards in many countries. Open capital markets have fueled growth by improving the allocation of capital to those countries whose domestic in-

vestment opportunities exceed domestic savings. Furthermore, the liberalization of capital accounts has allowed global investors to diversify the risk in their portfolios. The increasing mobility of capital has also helped to discipline governments in their monetary and fiscal policies. Despite these (long-term) benefits arising from open capital markets, recent developments have shown that increased capital mobility and financial market integration also pose difficult challenges for policy makers. The still unfolding Asian crisis, the more recent turmoil in Russia and the current turbulence in Brazil, as well as their spillovers to other markets, have imposed significant costs on individual countries and on the world economy.⁷ These considerations both underscore the need to address policy weaknesses at the national level as well as the importance of efforts towards a strengthening of the international financial architecture.

In what follows, we will first summarize the causes and characteristics of the Asian crisis and then turn to the discussion of financial market dynamics and contagion effects. These considerations will provide the basis for our discussion of measures to strengthen the stability of the international financial system, namely the proposal of a precautionary credit line.

2.1 Causes and Characteristics

The Asian currency and financial crisis that has spread to Russia and more recently to Latin America, was triggered by the devaluation of the Thai bath in July 1997. Although each of these crises had distinct characteristics and causes, several common elements which factor significantly into current debates surrounding the reform of the international financial architecture can be identified.⁸

⁷ There are a number of studies that are concerned with the estimation of the costs of financial crises (see World Bank 1997; IMF 1998a; Caprio and Klingebiel 1996; Lindgren et al. 1996; Rojas-Suárez and Weisbrod 1996; Alexander et al. 1997).

⁸ See Corsetti et al. (1998a, 1998b), Reisen (1998, 1999), Wyplosz (1998a, 1998b), IMF (1998b), World Bank (1998) as well as the links on Nouriel Roubini's Asian Crisis Homepage.

Common Characteristics. *First*, in most crises countries, significant liberalization of international capital transactions and the progressive elimination of capital controls preceded the crisis. In the years leading up to each of these crises, capital inflows to these emerging markets surged. Especially the Asian emerging economies were able to attract large amounts of capital in international markets (see Table 1). As a result, they built up massive sovereign and private debt denominated in foreign currencies. Factors that contributed to this development were the fixed or pegged exchange rate regimes prevailing in these countries coupled with higher domestic compared to foreign interest rates. Accordingly, many firms financed their operations through the issue of securities and loans in foreign currency. These large exposures were often not hedged, on the one hand because domestic derivative markets were underdeveloped and purchasing hedging products would have raised the costs of borrowing. On the other hand, and equally important, the governments in these countries seemed to be credibly committed to stick to their exchange rate peg or preannounced crawl.

Second, all three crisis episodes occurred under semi-fixed exchange rate regimes. Each country that was hit had attempted to stabilize the value of its currency with respect to those of its key trading partners. Although these arrangements may have helped to speed up integration into the world economy and curb inflation in

some episodes, they have also hindered the adjustment of real exchange rates in the face of large trade deficits, as in the Asian and Brazilian cases, or led to a declining surplus, as in the Russian case. The sudden withdrawal from relatively fixed exchange rates in times of crisis reinforced negative market expectations, and thereby intensified financial market pressures and produced severe recessions in the presence of large debts denominated in foreign currency.

Third, while the crisis started in one country, it quickly spread beyond its borders. In some cases the next victims were neighbors and trade partners, in others the crisis hit countries that followed similar economic policies or suffered common economic shocks. Furthermore, following the Russian crisis in summer 1998, there was a marked and overall change in investor sentiment and increased risk aversion contributed to contagion within and across regions.

Finally, the currency crises of the 1990s have often been associated with banking and financial sector crises, as the affected countries' financial systems and regulatory regimes were deemed to be weak. The Asian crisis and its aftermath therefore provide a striking example of the link between currency and banking crises, and underscore the profound vulnerability to which fragile financial and banking sectors subject an economy. In what follows, we give a brief overview on the causes of the financial crises in Asia, Russia and Brazil.

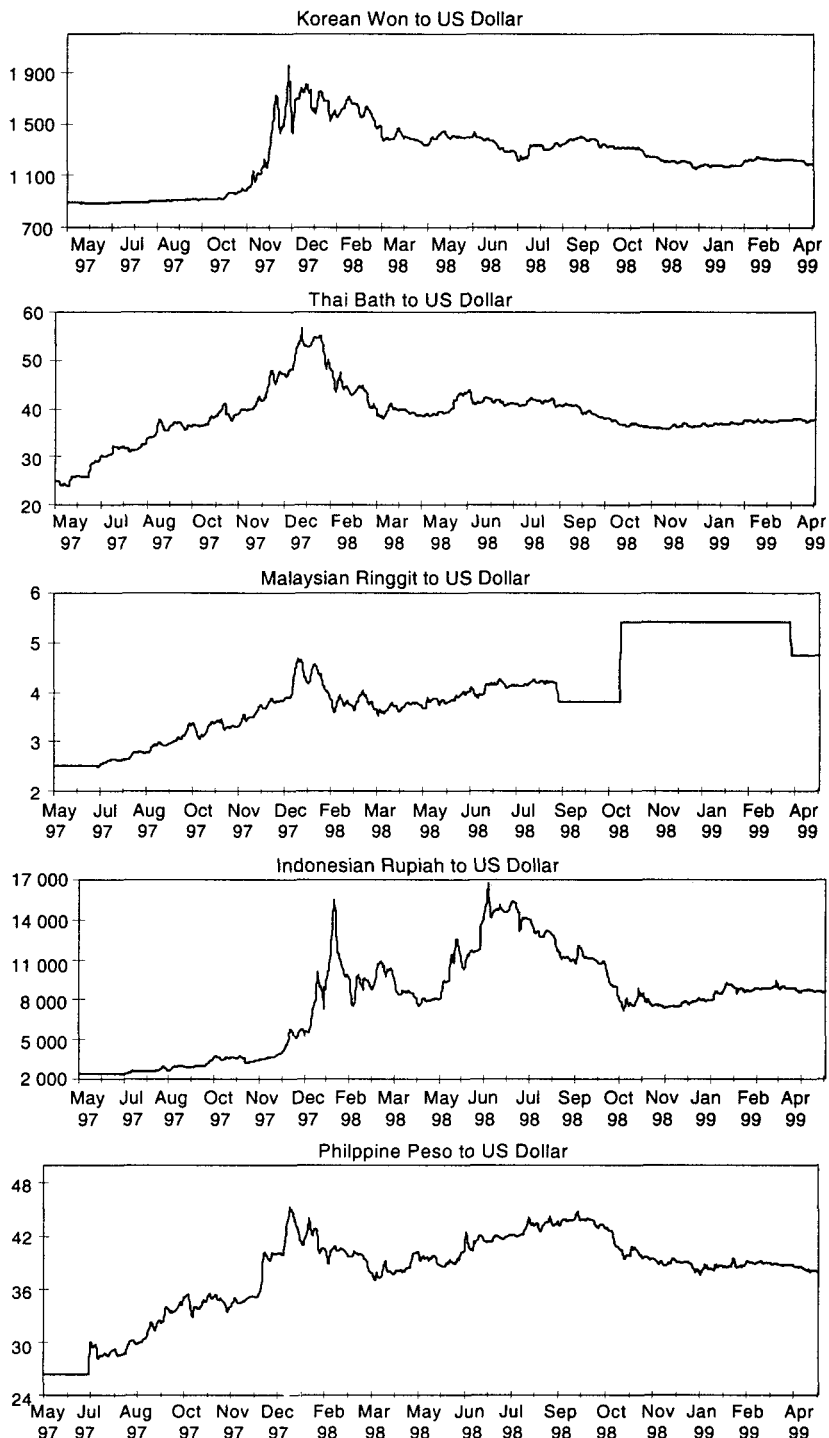
Table 1: Net Private Capital Flows to Asian Crises Countries (\$ billion)

	1995	1996	1997	1998e	1999f
Net private capital flows	79.0	103.2	-1.1	-28.3	-4.8
Net equity investment	15.9	19.7	3.6	8.5	18.7
Direct equity	4.9	5.8	6.8	6.4	14.2
Portfolio equity	11.0	13.9	-3.2	2.1	4.5
Net private creditors	63.1	83.5	-4.7	-36.8	-23.4
Commercial banks	53.2	65.3	-25.6	-35.0	-18.8
Nonbanks	9.9	18.2	21.0	-1.7	-4.6
Net official flows	2.5	-2.6	29.9	27.8	3.5
International financial institutions	-0.3	-2.0	22.1	21.6	-2.0
Bilateral creditors	2.9	-0.6	7.9	6.1	5.5

Note: e = estimate, f = forecast. Countries include Indonesia, Malaysia, South Korea, Thailand and the Philippines.

Source: Institute of International Finance (1999b).

Figure 1: Exchange Rates for the Asian Crisis Countries, 1997–1999



Source: Datastream.

Asia. Over the period 1995–1996, the five countries most adversely hit by the Asian crisis, i.e. Indonesia, Korea, Malaysia, the Philippines and Thailand, received net private capital in-

flows worth 6.6 percent of their combined GDP. In contrast, they suffered net outflows in the second half of 1997. Accordingly, the reversal from 1996 to 1997 constituted a swing of 11

percent of their combined GDP. As can be seen from Table 1, the major driving force behind this large swing came from commercial banks that had extended loans well into 1997, despite earlier warnings on overexposure from the Bank for International Settlements (BIS) and the Institute of International Finance (IIF). While portfolio investment decreased also substantially, foreign direct investment flows remained stable. As a result of these developments, the Thai bath and the Korean won lost half of their value against the US dollar, the Indonesian rupiah 80 percent in the first months of the crisis (see Figure 1). This led to a strong rise in nonperforming loans in the local banking systems and in turn to a downgrading of Asian borrowers to “junk” status.⁹

Radelet and Sachs (1998) have argued that the reversal in net capital flows, exchange rates and sovereign ratings over such a short period cannot be attributed to changes in the affected countries’ fundamentals. In this line of reasoning, the herd behavior of commercial banks and portfolio investors seems to be the Achilles’ heel of the global financial system. Nevertheless, for international financial investors to panic, fundamentals in the affected countries have to be weak in the first place (see Wyplosz 1998a). Current account deficits, overvalued exchange rates, overinvestment in real estate and declining capital productivity are among the main culprits for the Asian crisis (Corsetti et al. 1998a, 1998b; Diehl and Schweickert 1998). It has to be borne in mind, however, as pointed out by Reisen (1999), that this view ignores the endogeneity of such variables. As a result, the root cause for the currency crisis should be seen in the interaction of boom “distortions,” with excessively optimistic expectations by market participants, reinforced by exchange rate pegs in the presence of sustained interest differentials, with the loosening of portfolio discipline in weak domestic banking systems as a result of heavy capital inflows and disorderly financial liberalization.

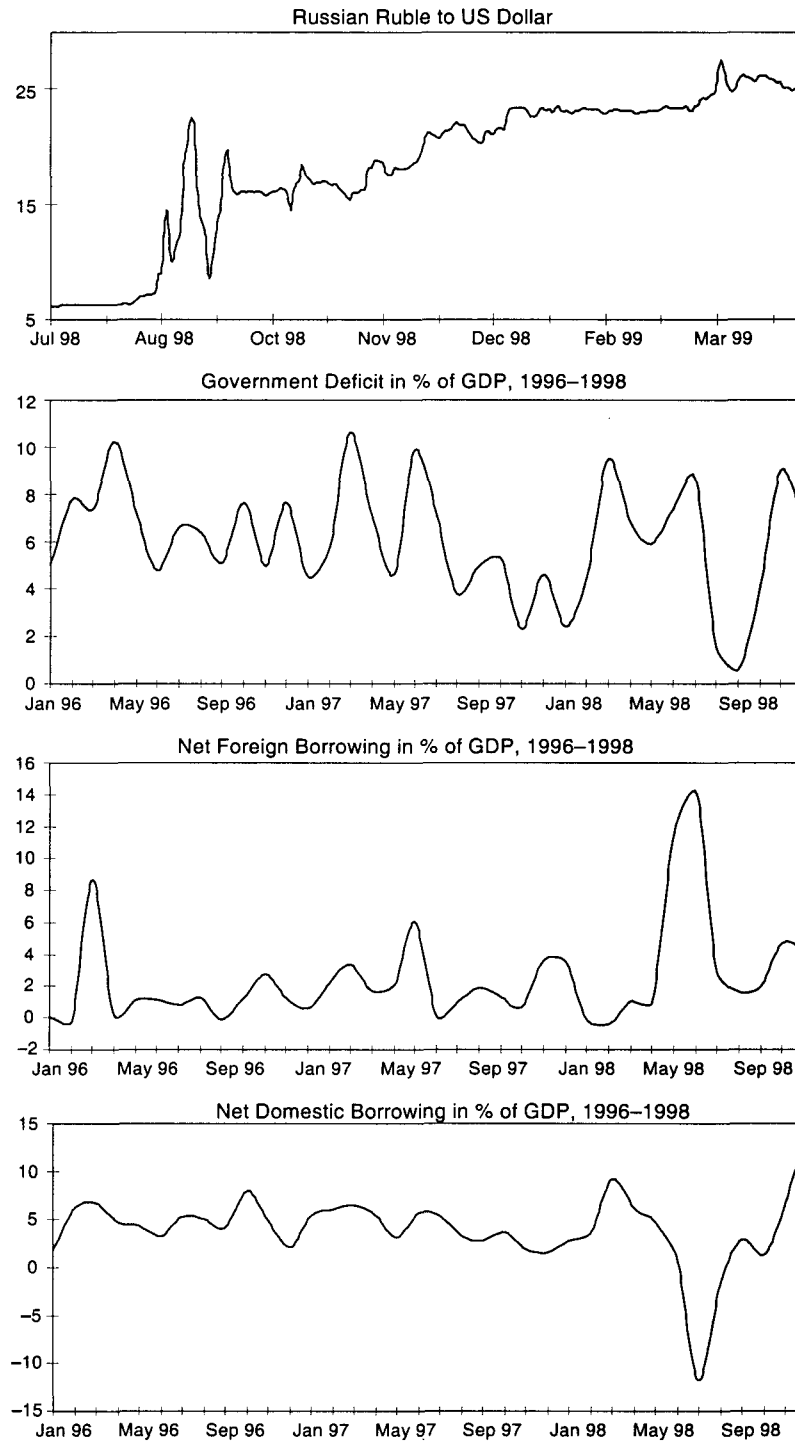
In Asia — as in Chile (1982) and Mexico (1994–1995) — domestic financial reform together with low levels of international interest rates and excellent growth prospects contributed to a large surge in the supply of foreign capital throughout the 1990s. Coupled with market and policy failures, such a mix can easily lead to a vicious circle of overborrowing, banking crises and finally currency crises.¹⁰ Overborrowing and overlending was exacerbated by moral hazard effects of implicit or explicit government bail-out guarantees (see Krugman 1998a). Domestic banks in Asian countries perceived their operations as “insured” against adverse contingencies by implicit or explicit government promises of bail-out as well as by a public commitment to keep the exchange rates fixed against the dollar. Several factors contributed to the unsustainability of this situation. First, there was a lack of prudential regulation and supervision of financial institutions. Second, bank capital requirements were low or not met in practice. Third, there was a general lack of transparency of public and private financial institutions coupled with inadequate bankruptcy laws. Fourth, financial and industrial policy was closely interwoven with a widespread network of personal and political favoritism in the business sector (“crony capitalism”). Fifth, the moral hazard problem was increased on the international level by the possibility of a bail-out by the IMF.

Russia. The financial market turmoil first evident in Asia in the summer of 1997 intensified sharply following Russia’s decision on August 17 to devalue the ruble and to impose a forced restructuring of domestic government debt. This development and to a lesser extent Malaysia’s

⁹ An analysis of the reactive approach of the sovereign rating industry to the Asian crisis can be found in Reisen and von Maltzan (1999).

¹⁰ Reisen (1998) emphasizes three main driving forces in this process: First, private borrowers fail to internalize the rising marginal costs of their borrowing decisions that are reflected in increased vulnerability to speculative attacks and the associated costs of fending them off. Second, based on excessively optimistic expectations about “permanent” income levels overborrowing has emerged as financial market institutions fail to disseminate information efficiently between depositors and borrowers. Third, the prevalence of exchange rate pegs coupled with sustained interest rate differentials tend to reinforce bank lending and spending booms.

Figure 2: Exchange Rate, Deficit and Borrowing for Russia, 1996–1999



Source: Datastream; IMF *International Financial Statistics*; Russian Economic Trends.

decision to impose capital controls, which followed shortly thereafter, were defining events that led both to a dramatic reassessment of the credit, market and transfer risks associated with

holding emerging market financial instruments, and to a general decline in risk tolerance among investors from developed countries.

The Russian crisis had its origins in the large fiscal deficit and the associated increase in holdings of public debt by domestic and foreign investors (Figure 2). Until late 1997, the Russian government had been quite successful in selling GKO and OFZs, with nonresident investors holding about one-third of domestic treasury securities (with a value of about \$20 billion at the prevailing exchange rate) by May 1998.¹¹ Starting in the first half of 1998, a series of domestic political events as well as external shocks (in particular the weak oil prices) increased the difficulties in selling ruble-denominated debt. As a result of the rising yields on ruble-denominated securities, the Russian authorities expanded the emission of dollar-denominated eurobonds, albeit at successively higher interest rates. By mid-1998 it was obvious that the government faced large-scale amortization in the treasury bill market during the second half of 1998. In July 1998, an attempt to stretch the maturity structure of the debt in the context of an IMF program and a voluntary domestic debt restructuring failed to restore market confidence. These developments led to a drying up in the interbank market as fears of bank failures led to deposit withdrawals from banks. Furthermore, pressures on the ruble intensified as Russian banks had to meet margin calls on their foreign currency debt-repurchase operations.

On August 17, the Russian authorities introduced a package of measures designed to deal with the currency, debt, and banking crisis. The main elements of this package were the devaluation (and later abandonment) of the exchange rate band, a 90-day moratorium on principal payments on private external debt obligations, and the announcement of a compulsory restructuring of the domestic government debt. The freezing of the GKO/OFZ market and the ruble's subsequent depreciation (by more than 60 percent during the last two weeks of August) caused severe liquidity problems for the domestic banking system and paralyzed the payment system. At the time of the moratorium, Russian

banks held \$27 billion of government securities, and many of them had borrowed abroad to finance the purchases. Total on-balance sheet external liabilities of commercial banks amounted to \$19 billion (of which \$16 billion had maturities of less than one year) and off-balance liabilities — mostly dollar forward and non-deliverable forward contracts with nonresidents — were estimated to be at least \$10 billion (IMF 1998b).

These developments triggered a series of sharp market corrections, as many international investors and banks suffered substantial losses, especially on highly leveraged investment positions, that indicated a generalized increase in risk perception and risk aversion. The widespread shift to quality and liquidity led to a severe tightening of credit conditions, not only for emerging markets but also for nonprime corporate borrowers in a number of industrial countries. Among the countries in transition, Russia continues to lack a coherent macroeconomic policy framework that would help to restore confidence of investors and establish the preconditions for sustainable growth. The main areas of concern remain the large underlying fiscal imbalances and the distortions arising from associated arrears as well as the broader culture of nonpayment in the economy, which refers to the unwillingness to implement institutional reforms.

Brazil. Over the period of almost four years since the introduction of the Plano Real until mid-January 1999, Brazil managed to bring down inflation from rates in excess of 2 700 percent a year to under 3 percent and at the same time to achieve annual growth of GDP of around 4 percent. Despite these positive developments, the Plano Real has not been successful in bringing down public sector debt (Table 2). After an initial period of substantial fiscal adjustments, the fiscal stance was loosened again. Public sector borrowing requirements reached 6.3 percent of GDP in 1997 and 8.5 percent in 1998. The economic and financial problems are emphasized by the fact that 70 percent of the public sector domestic debt was of short-term nature in March 1999 (Rojas-Suárez and Cañonero 1999). The impact of de-

¹¹ See IMF (1998b). GKOs are ruble-denominated discount instruments, and OFZs are ruble-denominated coupon bonds, both issued by the Russian Ministry of Finance.

Table 2: Fiscal and Monetary Indicators for Brazil

	1995	1996	1997	1998
Nominal fiscal balance	-7.40	-5.90	-6.10	-8.20
Primary fiscal balance	0.40	-0.10	-0.90	0.30
Total gross public debt	31.17	41.48	40.85	47.09
Long- and medium-term external debt	12.22	11.40	9.94	10.43
Short-term external debt	0.61	0.68	0.71	0.54
Long- and medium-term domestic debt	4.58	6.76	4.53	5.42
Short-term domestic debt	13.75	22.64	25.67	30.70
Total net public debt	23.82	33.73	34.37	41.38
Base money (end of period)	3.36	2.54	3.67	4.43
M1 (end of period)	4.41	3.83	5.46	5.71
Time deposits	11.10	8.90	10.90	11.60
Current account balance	-2.50	-3.20	-4.16	-4.48
Net international reserves (U.S. \$)	51.80	60.10	52.10	44.50
<i>Memorandum items</i>				
Average interest rate (Selic) (%)	38.90	23.90	25.01	30.16
Average inflation rate (FIPE-CPI) (%)	67.34	16.48	6.44	-0.15
Average exchange rate (R\$/ U.S. \$)	0.92	1.04	1.11	1.17
GDP in U.S. \$ billion	705.4	775.4	804.2	779.3
GDP in R\$ billion	646.2	778.8	866.8	885.1

Source: Rojas-Suárez and Cañonero (1999).

clining inflation on real expenditures, which had been subdued by the lack of rapid and full indexation of nominal expenditures, coupled with a number of structural weaknesses, such as an excessively generous pension system, the inflexibility of civil service employment rules, the lack of hard budget constraint on subnational governments, and a distorted system of indirect taxation, have been among the main driving forces that contributed to the weakness of public finances. In addition, monetary policy was accommodative, aiming at a reduction of interest rates and limiting the slowdown of the economy in advance of elections coupled with an unsustainable use of the exchange rate to anchor prices. These developments led to a massive loss of foreign exchange reserves of 45 billions of US dollars from their June peak (excluding the official package) (Institute of International Finance 1999c).

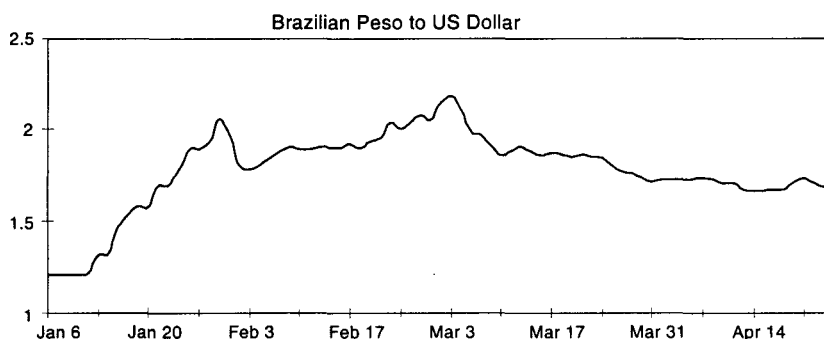
As a result of increased concerns about the fiscal situation and external competitiveness of the Brazilian economy, its currency came under pressure starting in July last year. Sharply higher domestic interest rates slowed the pace of capital outflows from mid-September, but a sustainable resolution of the difficulties, given the government's debt-service obligations, re-

quired action to reduce the fiscal deficit. Anticipation of such action, the implementation of some early measures, and expectations of large-scale financial support by the IMF and other multilateral and bilateral creditors led to a further easing of pressures in October and early November. Lack of political consensus on the adjustment program of November 13 prevented fast congressional approval and failed to restore investors' confidence. Following strong pressures on foreign exchange reserves, the central bank widened the exchange rate fluctuation band on January 13, and increased its interventions in the spot and futures markets. As pressures did not abate, the real was allowed to float on January 15, 1999.

While the real averaged 1.52 per US-dollar in January, it averaged 1.91 in February, compared with 1.21 prior to the change in regime. Restoration of the program's credibility and return of investors' confidence will depend on the full implementation of a new program agreed upon with the IMF on March 8 (Figure 3).¹² Aside from the fiscal package, control of inflation will be critical, since the benefits of a nominal devaluation would be eroded by a surge in inflation. Given the large amortization payments

¹² For details on the program see IMF (1999a).

Figure 3: Exchange Rate for Brazil, 01/1999–04/1999



Source: Datastream.

due on the country's external debt, a further erosion of creditor exposure to Brazil would have detrimental effects by reducing the availability of foreign exchange. By April 1999, the prospects of the Brazilian economy had improved significantly, as indicated by lowered inflation projections, declining interest rates, and a strengthening of the real.

2.2 Financial Market Dynamics and Contagion

Financial market dynamics. While there is a general agreement about the (long-term) benefits of open capital markets, there is substantial controversy about capital markets' ability to generate sustainable capital flows and guarantee accurate evaluation and pricing of the risks involved in financial market transactions. Based on the above considerations, there are a number of interrelated factors that can help to explain the surge in capital flows and the associated mispricing of risks that have taken place in the recent financial crises. These include (1) the opening of capital accounts, (2) a substantial strengthening in economic fundamentals and improvements in sovereign credit ratings, (3) changes in global macroeconomic conditions, (4) an increased involvement of institutional investors in emerging markets, (5) herding activities by financial market participants, and (6) moral hazard due to implicit and explicit guarantees that led to an underpricing of emerging market security risks.

As shown in Table 1, the surge in capital flows to emerging markets during the 1990s ended abruptly with the loss of market access and sharp adjustments in the prices of claims on these countries. In contrast to efficient and smoothly operating financial markets, where a gradual deterioration of a country's fundamentals would lead to a gradual increase in the risk premium implicit in the cost of borrowing in international markets, the abrupt reversal of investors' confidence that underlies a sudden loss of market access and a sharp adjustment in asset prices suggests that some aspects of the behavior in asset prices cannot be fully explained by rational pricing models. There is a growing body of literature concerned with price reversals in financial economics. As shown by Cutler et al. (1991), short-term momentum, i.e. positive autocorrelation, and long-term reversals in financial markets seem to be pervasive as well as market participants' behavior that is not completely compatible with full market efficiency. It has long been argued by authors such as Graham (1959), Shiller (1981), Arrow (1982), De Bondt and Thaler (1985), and Lakonishok et al. (1994) that stock prices do not only mirror rationally discounted expected cash flows, but instead also reflect irrational investor sentiment or systematic errors in expectation formation.¹³

¹³ There are a number of possible explanations of such a behavior. First, as pointed out by Kahneman and Tversky (1982) in the context of individual decision making, individuals may systematically overweight recent information, thus reinforcing recent price movements. Second, Sherrin and Statman (1995) have pointed to the possibility of judgement errors in that investors might balance good companies with

Among the key factors that left the crises countries ex ante vulnerable to a shift in market sentiment were the (1) high leverage, reflecting excessive risk taking, (2) undercapitalized banking systems, overly generous lending, and weak supervision and regulation, (3) reliance on short-term cross-border interbank funding, (4) moral hazard that led to excessive risk taking and additionally obscured the distinction between private and public sector liabilities, (5) vulnerable central banks subject to political interference, and (6) excessive reliance on banks as principal source of financial intermediation (IMF 1998d, 1999b). The interaction of these factors contributed to the emergence of a vicious circle, where a domestic or external shock was sufficient to trigger an abrupt revision of expectations of future performance and an associated sharp contraction of financial markets.

While these considerations indicate that there are numerous arguments for an abrupt loss in investors' confidence and market access, the question remains as to the timing of the crisis. For countries with pegged exchange rates, the loss of market access usually occurs through a speculative attack on their exchange rates. Based on experiences with exchange rate and financial crises over the past decades, different conclusions as regards the predictability of such attacks have emerged. In so-called "first generation" models, a speculative attack reflects an attempt by market participants to realize profits through the money market from discarding inconsistent policies (see Krugman 1979; Flood and Garber 1984). In this framework, it is assumed that a government finances its budget deficit through money creation, thereby fueling balance of payments deficits. The authorities' foreign assets are, thus, gradually run down until they are completely depleted in a final attack. These first generation models are judged to be successful in explaining developments during the debt crisis at the beginning of the 1980s in Latin America.

The difficulties to account for some key aspects of more recent crises led to the development of "second generation" models (see Obstfeld 1986, 1994). This was particularly apparent during the ERM crisis of 1992, where policies were not overly expansionary in all countries involved and, thus, need not have led to a crisis. Accordingly, in second generation models, economic fundamentals do not necessarily require a change in the exchange rate. Instead, what triggers a crisis are private sector expectations about government reactions. This can be illustrated by a government that is willing to maintain a fixed exchange rate in the absence of a speculative attack, although it may not be willing to incur the costs of high interest rates that would be needed to defend the peg. In contrast to first generation models, where an abandonment of the peg is anticipated as a result of inconsistent fundamentals, speculative attacks in second generation models actually provoke the change in fundamentals.

As regards the Asian crisis countries, neither of these stories seems to be applicable. Krugman (1999b) therefore emphasizes the need for a "third generation" crisis model, centering around banking system problems associated with moral hazard. In this line of reasoning, one could also think of a renaissance of first generation models, driven by new fundamentals, namely moral hazard considerations that trigger excessive risk taking and subsequently financial collapse (Corsetti et al. 1998a, 1998b; Dooley 1997; McKinnon 1998; McKinnon and Pill 1998). An alternative line of research is followed by Chang and Velasco (1998a, 1998b), who model currency crises as the byproduct of a bank run, in the tradition of Diamond and Dybvig (1983) as a self-fulfilling loss in confidence that forces financial intermediaries to liquidate their investments prematurely.

Contagion. Aside from the causes and timing of recent crises, another key feature of recent is related to contagion and spillover effects, i.e., the spread of market disturbances from one country to another. While these terms have been used extensively in the wake of the Mexican and Asian crisis, there is a controversy as to whether contagion effects are evidence of irrational investor behavior or rather the result of

good investments, regardless of their price. Third, De Long et al. (1990) have argued that so-called "noise traders" are able to move prices away from fundamental values without necessarily inducing an arbitrage process that would cause them to lose money.

fundamental causes. Although correlations between stock markets and currency returns across some emerging markets were high during the Mexican and Asian crisis, this is not necessarily an indication of irrational spillovers (IMF 1998d). According to Wolf (1997), who tried to disentangle stock market correlations, industry effects, and fundamental factors, it is difficult to find compelling evidence for irrational contagion effects. In contrast, Eichengreen et al. (1996) have shown that macroeconomic factors can explain only part of the countries' experiences with currency crises.

There are a number of channels to explain the correlation between crises in emerging markets. Authors such as Eichengreen et al. (1996), Fratzscher (1998), Gerlach and Smets (1994), Glick and Rose (1998), and Goldstein (1998) emphasize the importance of trade flows and competitiveness effects as channels of contagion. As a result of a devaluation in one country, its competitive position improves relative to that of its trading partners. As a result, the currencies of major trading partner countries or direct competitors in third markets become susceptible to speculative attacks.¹⁴ In this line of reasoning, contagion may also arise from common economic shocks, i.e., falling commodity prices may hurt commodity-exporting countries. Additionally, as in the case of Japan, an economic downturn can lead to a decline in imports from neighboring trading partners through the income effect.

A second channel of contagion, labeled as the "wake-up call" phenomenon (Goldstein 1998), refers to the reasoning that once a crisis has occurred in one country, investors might reassess their view of other countries. If there are common weaknesses in other countries, their credit ratings are likely to decline and the crisis spreads. Additionally, changes in investors' perceptions of the odds of official bail-outs might contribute to contagion. This can be illustrated

by the case of Russia, which was by and large believed to be too big to fail and where the interruption of official assistance led to a sharp deterioration in investors' confidence and increased their concern that other emerging markets might follow similar policies or might not be bailed out.

A third channel of contagion arises from financial linkages between countries. Changes in asset returns that are due to shocks will contribute to changes in portfolio allocation to all other emerging markets. This can again be illustrated by the Russian case, where the default resulted in substantial losses for (highly leveraged) financial institutions that were in turn forced by margin calls to liquidate their positions in other markets. The pattern of financial holdings can thus trigger a transmission of shocks from one country to other countries, regardless of their fundamentals (see Buckberg 1996; Fratzscher 1998; Kaminsky and Schmuckler 1998).

While some degree of contagion through these channels may be inevitable at times of crisis, it may be exacerbated by herding behavior, which is usually attributed to asymmetric information. Economists such as Eichengreen et al. (1996) have argued that in situations of increased volatility of financial markets, investors do not discriminate between different fundamentals across markets and regard emerging markets as one asset class. Decisions based on such imperfect information may thus become self-fulfilling and lead to herd behavior. While herding is usually assumed to result from irrational behavior, recent research suggests that herding can rationally be explained by payoff externalities, principal-agent issues, or informational learning.¹⁵ Studies by Lakonishok et al. (1992), Aitken (1998), and Calvo and Reinhart (1995) have shown, however, that it is difficult to prove herd behavior empirically.

¹⁴ Eichengreen et al. (1996) conclude that competitiveness effects were important determinants of contagion in the period from 1959 to 1993. These results are reconfirmed for the Asian crisis by Goldstein (1998), who argues that there are significant direct and third-country effects to warrant sequential devaluations. The results by Goldstein are, however, questioned by Alba et al. (1998).

¹⁵ Payoff externalities imply that the payoff to an agent adopting an action is positively related to the number of other agents adopting the same action. Principal-agent considerations imply that, in case of imperfect information, managers may prefer to "hide in the herd" to avoid evaluation, or to "ride the herd" to show their talent. In the context of informational learning, the latter agents infer information from the former, while at the same time ignoring their own information. For a survey see Devenow and Welch (1996).

3. Precautionary Credit Line as a Means to Enhance the Stability of the Financial System

The globalization and integration of international capital markets has contributed to higher investment, faster growth and rising living standards in many countries. Open capital markets have fueled growth by improving the allocation of capital to those countries whose domestic investment opportunities exceed domestic savings. Furthermore, the liberalization of capital accounts has allowed global investors to diversify the risk in their portfolios. The increasing mobility of capital has also helped to discipline governments in their monetary and fiscal policies. Despite these (long-term) benefits arising from open capital markets, the above considerations have shown that increased capital mobility and financial market integration also pose difficult challenges for policy makers. The still unfolding Asian crisis, the more recent turmoil in Russia and the turbulence in Brazil, as well as their spillovers to other markets, have imposed significant costs on individual countries and on the world economy.¹⁶ These considerations both underscore the need to address policy weaknesses at the national level as well as the importance of efforts towards a strengthening of the international financial architecture.

3.1 The Issue of a Precautionary Credit Line

A broad international consensus has emerged to support reforms to strengthen the international financial system. These reforms, designed to reduce the incidence of future crises, are usually referred to as the “new international financial architecture.” Their aim is to create an international financial system that captures the full benefits of global markets and capital flows,

while minimizing the risk of disruption and spreading of future financial crises, thereby reducing the risk of contagion. While the former refers to the need for greater transparency, accountability and prudential regulation, the latter refers to the improvement of existing and the creation of new mechanisms for the resolution and prevention of financial crises.

A prominent proposal for such a new mechanism first raised by President Clinton in fall 1998 concerns the creation of a precautionary credit line to fundamentally sound economies under the auspices of the IMF. At the 1998 annual meetings of the Bretton Woods institutions, the G-7 and the interim committee agreed to explore this proposal. In their declaration from October 30, the G-7 agreed that strengthened arrangements to deal with contagion would be beneficial. Furthermore, it adopted the Clinton proposal and called for the establishment of an enhanced IMF facility that would provide a contingent short-term credit line for countries that follow policies in line with IMF guidelines, i.e., in cases where problems stem from contagion rather than from poor policies.¹⁷ On its meeting of April 23, 1999, the Executive Board of the IMF agreed to provide member countries with Contingent Credit Lines as an instrument of crisis prevention. Under this facility, the Fund will “... commit resources — on a contingency and conditional basis — to countries that are in jeopardy of contagion from crises in other emerging markets.”¹⁸ A precautionary credit line can therefore help to avoid such attacks by way of an IMF approval of its economic policy as well as the signalling of readily available financial resources. The essence of a precautionary credit line therefore is to protect “innocent bystanders” from an indis-

¹⁶ A number of studies have tried to estimate the costs of financial crises (see World Bank 1997; IMF 1998a; Caprio and Klingebiel 1996; Lindgren et al. 1996; Rojas-Suárez and Weisbrod 1996; and Alexander et al. 1997).

¹⁷ One of the reasons for the G-7 support of this proposal was the aim to bolster confidence sentiment ahead of the announcement of the Brazilian package, which was finally agreed upon in December 1998 after lengthy negotiations.

¹⁸ Camdessus (1999: 4). See also Fischer (1999). It should be mentioned, however, that the idea of creating a short-term facility to counter capital flows deemed to be speculative and destabilizing is not new. As pointed out by Williamson (1998), the IMF already made tentative proposals on this issue in fall 1994, in a paper entitled “Short-Term Financing Facility”.

criminate loss of investors' confidence. Based on these considerations, it is reasonable to expect that such countries should regain market access and be able to repay the credit relatively quickly after a speculative attack, unless loss in market access itself would constitute a move towards an unsustainable equilibrium.

3.2 Mechanisms of a Precautionary Credit Line

Despite these arguments in favor of a precautionary credit line, there are a number of issues that need to be addressed before its implementation. First, although such a credit line might help to prevent the spread of contagion, it seems difficult to distinguish between countries in need of policy adjustment *ex ante* and countries that follow sound economic policies, *i.e.*, the issue of eligibility to the new facility has to be resolved in advance. Second, there is a need for an assessment of the likely resource requirements of such a new facility and its implications for the Fund's liquidity position. Third, the creation of a new credit facility raises the question of whether and how bilateral and private creditors should be involved. Fourth, before establishing a precautionary credit line, there should be clear guidelines about the terms and conditions that would apply to this new facility. In what follows we will provide some arguments on these issues.¹⁹

With respect to the issue of eligibility, a country should provide evidence of the soundness of its economy and policy stance. As the precautionary credit line aims at preventing contagion and insulating countries from adverse effects once contagion has occurred, it will be important to avoid adverse selection. This implies that countries with a need for policy corrections would continue to apply for Fund support based on substantive adjustment programs. One could therefore think of a catalogue of indicators, in the sense of a "health check," that would form the basis for the judgement on eli-

gibility to the new facility. Relevant indicators could be (i) the absence of a need for financial assistance under the prevailing circumstances, (ii) a positive overall assessment of the country's economic policy in the last Article IV consultation, and (iii) the continuation of private creditor relations in combination with debt management that limits external vulnerability.

These indicators could be augmented by a set of standards a country would have to adhere to qualify for financial assistance under a precautionary credit line. As suggested by the experience of recent crises, standards for the financial system and for fiscal and monetary policy would be needed to enhance data disclosure and dissemination. Much work has already been done by a number of international organizations such as the BIS or the IMF to establish standards in these areas. Nevertheless, the current crises have revealed that these efforts must be reinforced to guarantee full adherence to these standards by all countries involved.

The issue of resource requirements associated with a precautionary credit line is difficult to be resolved. First, resource requirements cannot be pinned down exclusively to hard facts, such as a country's external debt position, as the amount of funding is also related to soft facts such as investors' psychology, *i.e.*, the issue of funds necessary to maintain investors' confidence. Furthermore, the size of the precautionary credit line also hinges on the respective country's ability to maintain or to obtain financing from bilateral and private creditors.

As a result of the difficulties involved in the determination of the Fund's resource requirements, it is also difficult to evaluate the consequences for the Fund's liquidity position. This argument remains valid despite the recent quota increase under the eleventh quota review and the creation of the New Arrangements to Borrow (NAB) that supplement the General Arrangements to Borrow (GAB) and the associated improvements in the Fund's liquidity position as measured by the liquidity ratio. While the liquidity ratio declined to a low of 30 percent in 1998, from a level slightly above 100 percent in 1996, it reached again 95 percent by February 1999 as a result of the quota increase.

¹⁹ A brief description of the criteria for access to the newly established Contingent Credit Lines can be found in IMF (1999c).

Finally, we turn to the terms and conditions that should apply to the use of resources under a precautionary credit line. One important feature of IMF arrangements concerns conditionality, by which the Fund seeks to ensure the sustainability of the country's economic policies and thereby fosters the country's ability to meet its repayment obligations on time. In terms of a precautionary credit line, we have to distinguish between two stages. In a first stage there will only be a need for policy supervision of the threatened country by means of a number of benchmarks, as outlined above. In the absence of contagion, the country will remain in this first stage. Stage two refers to a situation when contagion has occurred in the threatened country. As a result of the likelihood that corrective policy adjustments will be necessary following contagion, it seems to be appropriate to link the release of installments to the implementation of a reform program, which could thereby help to foster investors' confidence. These considerations imply that IMF lending under a precautionary credit line will exhibit some form of phasing. Nevertheless, it seems likely that there would be a need for substantial front-loading once contagion has occurred to regain investors' confidence.

3.3 Drawbacks of a Precautionary Credit Line

Prima facie, the proposal of a precautionary credit line seems plausible. The idea behind the precautionary facility is that it would constitute a large facility readily available at short notice for countries that follow sound economic policies and have prequalified for access to this facility. The aim would be to calm markets and avoid capital flight. Optimally, this would be achieved by the mere existence of such a facility without actually having to use it. There are, however, a number of drawbacks involved in the concept of a precautionary credit line that render it less appealing. This view is reinforced by the fact that the information released on the Executive Board's decision concerning the establishment of Contingent Credit Lines (IMF

1999c) does not provide comprehensive answers to these issues.

We will start with some general remarks. Judging from recent experiences we doubt the existence of "innocent bystanders" and pure contagion. As the remarks on the causes of the recent crises in the Asian countries, Russia and Brazil have shown, they all had weak fundamentals — be they fiscal, financial, institutional or structural — that justified the withdrawal of funds based on a confidence loss. The crucial issue to be resolved in the attempt to enhance the stability of financial markets is to strike a balance between coping with financial distress after it has started, on the one hand, and to improve incentives in a way that borrowers and lenders will not get into troubles in the first place.

A second general concern is related to the fact that the provision of a new credit facility may exacerbate moral hazard, as lenders could be tempted to take greater risks, and thereby increase rather than decrease the stability of the international financial system. At the same time, recent experiences, mainly the Russian case, have fostered suspicion as to whether a precautionary credit facility would not be subject to even larger political discretion compared to existing Fund facilities. This issue refers to the difficulty of defining a benchmark for qualification to a precautionary credit facility.²⁰

After these general remarks we now turn to some more specific comments related to the proposal of a precautionary credit line. A first comment relates to the fact that the IMF already disposes of a precautionary credit line with the Supplemental Reserve Facility (SRF) that was established in December 1997. This short-term credit mechanism was explicitly introduced by the Executive Board for countries "... experiencing exceptional balance of payments problems owing to a large short-term financing need resulting from a sudden and disruptive loss of market confidence reflected in the pressure on

²⁰ In the context of defining a benchmark, it will turn out to be difficult to distinguish between temporary and more fundamental balance of payments problems as well as between exchange rate pressures beyond the control of a country and those arising from domestic policy decisions.

the capital account and the member's reserves" (IMF 1998c). In its press release on the establishment of Contingent Credit Lines of April 23, the IMF (1999c) clarified that while Contingent Credit Lines are a preventive measure "... intended solely for members that are concerned with potential vulnerability to contagion, but are not facing a crisis at the time of commitment," SRF is intended for use by member countries that are already in the throes of a crisis. These considerations not only give rise to the more fundamental question whether there is a need for a second precautionary credit line, but also where a dividing line can be drawn between these two credit facilities. Furthermore, the experiences with SRF loans to Korea, Russia and Brazil reinforce doubts about the overall viability of a precautionary credit line, as these countries were by no means "innocent bystanders," but rather exhibited weak fundamentals. Under such circumstances, it is very likely that political pressure will arise in the decision making process.

A second issue refers to the fact that if a country falls victim to contagion, there would presumably be a necessity for substantial upfront commitments by the Fund in order to reverse capital flows and to restore investors' confidence. As demonstrated most recently by the Russian and the Brazilian cases, the IMF has not been very successful in alleviating market pressures by providing large financial packages. Compared to existing facilities, the establishment of a precautionary credit line will increase the loss in control over economic policies in the case of adverse economic developments. Related to this issue are concerns regarding the resource requirements for a precautionary credit facility. As already pointed out, it will prove difficult to determine the amount of financing that will be needed. This is especially true as more and more countries take steps to liberalize their capital accounts as well as because there always seems scope to improve market confidence.

To provide an appropriate assessment of the impact of a precautionary credit line on the Fund's liquidity position, it seems necessary not to rely on existing practices. Under the current

methodology, only 50 percent of the amounts committed under precautionary arrangements are deducted from the total of usable resources.²¹ This procedure could therefore disguise total resource requirements. At the same time, full credibility must prevail as concerns the provision of committed financing in the case of an activation of the precautionary credit line, as this is the only way to restore investors' confidence and calm markets.

Related to these considerations is the concern that the Fund's credibility could seriously be undermined if the precautionary credit facility would be used without adequate conditionality. This concern would be reinforced if capital outflows did not cease, even though the IMF endorsed the appropriateness of the country's economic policy and disbursed financial resources to restore investors' confidence. In case that the precautionary credit line would fail to achieve this objective, the effects of the speculative attack are likely not to be only transitory and thus require adjustment. This clearly raises the question as to what leverage would be left to the IMF in such a situation. It will therefore be very much in the interest of the Fund to attach strict conditionality to a precautionary credit line to preclude countries from deviating from optimal policies.

The application of ex ante conditionality, by means of standards as outlined above, to "prequalify" for the precautionary credit line, however, raises a number of concerns. These concerns center around the question whether the Fund should assume the role of a rating agency, by deciding about which countries would qualify for access to this facility. Despite their merits, standards also entail the danger of creating an illusory security that could lead to overlending by financial markets. Recent experiences with private rating agencies in the wake of the Asian crisis provide ample evidence on their failure to provide an appropriate risk assessment (see Reisen and von Maltzan 1999). Furthermore, if the Fund would take a country

²¹ Together with the deduction of all other amounts committed under arrangements, this allows the calculation of net uncommitted usable resources and accordingly the liquidity ratio.

from its preapproved list, it would precipitate capital flight and, thus, oblige the country to seek assistance through one of the Fund's existing facilities. Based on these considerations, doubts about the effectiveness of the Fund's role as a rating agency are therefore reinforced.²²

Finally, as concerns the establishment of a comprehensive list of standards, questions arise as to the scope of Fund activities and its areas of comparative advantage. Based on these considerations we would plead for a decreasing involvement of the IMF in areas of less direct operational concern such as accounting, auditing, bankruptcy, banking regulations as well as corporate governance. To establish a comprehensive list of standards, effective cooperation between the different international bodies involved in standard setting in these areas would be required. The question remains as to which body would be the most appropriate to take on the coordinating role in the standard setting process.

3.4 Alternative Means to Enhance the Stability of the Financial System

Based on the concerns about the potentially large amount of resources necessary for a precautionary credit line and the problems associated with moral hazard, there is a necessity to create structures and instruments that will help to ensure the participation of the private sector in providing liquidity support in times of crisis. A general merit of an adequate involvement of the private sector will arise from the likely improvement in risk assessment by market participants that will in turn contribute to prevention. A number of proposals have been put forward as to how the private sector could be "bailed-

in," and, thus, have investors bear the consequences of their lending decisions.²³

One possible way would consist of an option-type mechanism by which the debtor could purchase an option that would allow him to trigger liquidity support in times of crisis. The option would accordingly provide a market-based insurance instrument, with the writer of the option being compensated for the risks undertaken. Argentina and Mexico provide two examples where the authorities have entered into financing agreements with foreign commercial banks to provide liquidity in times of crises. While under the Argentine agreement peso-denominated government securities can be swapped for US dollars, the Mexican scheme constitutes a pure credit facility. These types of arrangements are desirable from a burden sharing perspective as they involve only private sector creditors and provide at least partial assurance that new funds will be available in the case of a crisis. There is a danger, however, that large amounts of unconditional funds could hamper structural adjustments.

A more radical measure would consist of mechanisms to lock in creditors, i.e., to introduce limits for creditors to reduce short-term exposures in the course of financial market turbulence. A drawback of such mechanisms arises from the threat of activation that could lead investors to withdraw earlier than otherwise. Such a rush to the exit could not only accelerate the eruption of the crisis, but might generally entail the risk of causing a crisis that would otherwise not have come about.²⁴

A second way to foster private sector involvement entails the reorganization of claims of private creditors. While the debt crisis of the 1980s was characterized by the dominant role of commercial banks that were lending through syndications, the picture has changed substantially over the past decade. Today a larger num-

²² Fischer (1999) has recently pointed out the trade-off between constructive ambiguity and clear rules in the context of the potential role of the IMF as a lender of last resort. While he conceded that the main benefit of spelling out rules would be a reduction in the frequency of panics, this has to be compared with the reduced risks that are likely to be taken by investors as well as the possibly greater frequency of crises under constructive ambiguity.

²³ For a recent survey see *The Economist* (1999). A critical appraisal of these issues from the private sector perspective can be found in Institute of International Finance (1999a).

²⁴ These considerations are based on findings from the research on models of currency crises and speculative attacks (see Krugman 1979; Flood and Garber 1984; Grilli 1986; Obstfeld 1986).

ber and diversity of investors coupled with a vast amount of debt issued in the form of foreign bonds has increased the potential for information failures and collective action problems in times of crises. While existing mechanisms provide for a restructuring of interbank debt, there are no such devices for a renegotiation of other forms of private claims. There are mainly two instruments to achieve this, namely modifications of bond contracts and adapted bankruptcy procedures.

Modifications of bond contracts would aim at speeding negotiation processes and reducing risks that individual creditors could prevent broad consensual agreements. As proposed by a report of the Group of Ten, modifications could entail the establishment of sharing and majority clauses (see Group of Ten 1996). Under a sharing clause, lenders agree to share disproportionate payments with other lenders on a proportional basis. These sharing clauses can therefore provide an effective means to avoid creditor litigation in the case of a default. Majority clauses would allow changes to be made in the terms of bond contracts without the unanimous consent of holders. While experience is very scarce as regards the effects of sharing clauses when the group of creditors is large and dispersed, there are some eurobonds with qualified majority voting clauses under British law. As pointed out by the Group of Ten report, there does not seem to be evidence that bonds with such clauses are priced significantly different by the market.²⁵

Turning to the issue of bankruptcy procedures, the Asian crisis revealed that many countries hit by the crisis were far from having effective bankruptcy systems. Like sharing and majority clauses, collective bankruptcy procedures could provide means to bail-in creditors that would otherwise have blocked negotiations supported by a majority of creditors. While effective national bankruptcy laws are crucial for an efficient functioning of domestic financial

markets, proposals for an international bankruptcy court, as suggested by Sachs (1995), seem plausible although unlikely to be implemented. As recently pointed out in a survey by *The Economist* (1999), there would be an uneven scope between a bankruptcy court at the national and one at an international level. While a domestic court can dismiss the management of bankrupt firms, an international bankruptcy court would be unlikely to be empowered to dismiss a country's government. On a more general level, it would prove difficult to achieve an agreement on an international bankruptcy code because the types of national bankruptcy codes differ vastly. While the case for improved bankruptcy procedures at the national level is strong, it seems unlikely that such procedures will be installed at the international level.

4. Conclusions

Against the background of the financial crisis in Asia, a number of proposals to foster the stability of the international financial system have been put forward. The present paper analyzed one of these proposals, namely that of a precautionary credit line which the IMF's Executive Board agreed to establish in April 1999. This facility is envisaged as a means by which preventive credit lines will be provided under the auspices of the IMF to countries whose economies are fundamentally sound, but which are concerned with the potential effects of contagion on their access to capital markets. At first glance the idea to protect "innocent bystanders" from an indiscriminate loss of investors' confidence is appealing. Nevertheless, a closer look reveals that the creation of such a credit line is associated with severe difficulties.

First, it will prove difficult to distinguish between countries deemed "innocent bystanders" and countries in need of ex ante policy adjustment. Based on the experiences with recent financial crises, countries that have fallen victim to contagion all had weak fundamentals that justified a reversal of capital flows due to a loss in investors' confidence. Second, it is likely that

²⁵ Nevertheless, British-style bonds could suffer from the drawback that they would be subordinated to American-style bonds, with associated consequences for the pricing and composition of new bond placements.

there will be a need for large up-front financial resources to contain contagion. Based on these considerations, it is questionable whether the Fund's resources will be sufficient to meet the financing requirements. Furthermore, the IMF's credibility could be seriously undermined in the absence of conditionality attached to the provision of funds. The idea of establishing *ex ante* conditionality through a set of standards is, however, not unproblematic either, as standards entail a danger of creating an illusory security that could lead to a misallocation of funds by financial markets. Furthermore, by assuming the role of a rating agency the Fund might actually trigger capital flight if it were to downgrade a country. Overall, we therefore do not find convincing arguments in favor of a precautionary credit line.

We have discussed a number of alternative instruments to foster the stability of the financial system through a better involvement of the private sector. One possibility consists of the introduction of option-type mechanisms by which debtors would be able to trigger liquidity support in case of a crisis. A more radical approach is to introduce limits for creditors to reduce their short-term exposures in the course of financial market turbulence. A second avenue to provide for a bail-in of the private sector involves the reorganization of private claims. This can either be done by modifying bond contracts or adapting bankruptcy procedures.

Aside from these issues directly related to the introduction of a precautionary credit line, there is a more fundamental concern arising from this discussion which is related to the future role of the IMF.²⁶ The introduction of a precautionary credit line would clearly constitute a step towards an international lender of last resort role of the IMF. The function of a lender of last resort in the national context is usually defined as lending to distressed but solvent banks against a collateral and at a penal rate of interest. As a result, only sound but illiquid banks should be helped to mitigate moral hazard implicit in bank rescues. In contrast to central banks acting as

lenders of last resort at the national level, the IMF would not be in an analogous position unless it would be transformed into a global central bank commanding over a global currency, which is highly unlikely to come about. Fischer (1999) has recently pointed out, however, that an international lender of last resort does not necessarily need a global currency. Rather, Fischer argued that historically lenders of last resort have assumed two different roles, namely that of crisis managers and that of crisis lenders. Neither of these functions would require a global central bank. Provided that the IMF would dispose of sufficient resources as a lender of last resort, panic in financial markets could be stemmed without having to resort to money creation. As pointed out in this paper, however good the supervision might be, it is doubtful whether the moral hazard problems created by an IMF endowed with large financial resources could be contained.²⁷

As a result of the unlikeliness of overcoming the moral hazard dilemma, we reject the idea of a vastly greater IMF which could finally lead to a lender of last resort. Instead we advocate better designed IMF lending by means of stricter conditionality, associated with means to allow for a better bail-in of the private sector, such as option-type mechanisms and bankruptcy procedures described above. Overall, however, the main focus of policy makers in enhancing the stability of the international financial system must be to increase transparency and supervision especially as regards the financial sector and to implement sound economic policies to prevent future crises.

²⁶ For a recent discussion of this issue, see Feldstein (1998) and Siebert (1998).

²⁷ For a discussion of these issues, see Nunnenkamp (1999).

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