



WP/00/185

IMF Working Paper

ARCHIVES
ROOM IS11-400

0441

How Can Fiscal Policy Help Avert Currency Crises?

George Kopits

IMF Working Paper

Fiscal Affairs Department

How Can Fiscal Policy Help Avert Currency Crises? ¹

Prepared by George Kopits

November 2000

Abstract

The views expressed in this Working Paper are those of the author(s) and do not necessarily represent those of the IMF or IMF policy. Working Papers describe research in progress by the author(s) and are published to elicit comments and to further debate.

An overview of crisis episodes in emerging-market economies with a pegged exchange rate regime in the 1990s suggests that sizable explicit or implicit government deficits, or market perceptions of lack of fiscal sustainability, render these economies vulnerable to currency crises under high capital mobility. It is argued in the paper that vulnerability to crisis can be mitigated by signaling a phased fiscal adjustment that involves credible implementation of key structural measures. In particular, fiscal policy rules, such as the ones being adopted in a number of emerging-market economies, constitute a potentially useful tool of crisis prevention.

JEL Classification Numbers: E62, F32, F41, H6

Keywords: balance of payments crises, fiscal policy

Author's e-mail address: gkopits@imf.org

¹ Revised version of a paper presented at the Conference on Financial Crises organized by the Oesterreichische Nationalbank, November 21-23, 1999, in Vienna. The author is grateful to Stanley Fischer, G.A. Mackenzie, Steven Symansky, Istvan Szekely, and Vito Tanzi for useful comments.

Contents	Page
I. Introduction.....	3
II. Crisis Episodes.....	3
III. Conceptual Framework	7
IV. The Role of Signaling	9
V. Summary and Conclusion	13
Table	
1. Selected Indicators of Vulnerability Prior to the Crisis	5
Box	
1. Fiscal Policy Rules in Argentina, Brazil and Peru	12
References.....	14

I. INTRODUCTION

Considerable attention has been directed at regulating the domestic financial system, tightening the monetary stance, imposing various forms of capital controls, or simply relaxing the exchange rate rule, as a possible means to prevent balance-of-payments crises. Although often regarded as a root cause of external disequilibria, fiscal policy has received mixed treatment as an instrument for arresting an impending crisis. The fiscal solution is usually approached from two different angles. From an orthodox perspective, the misalignment in fundamentals calls for a tough front-loaded fiscal adjustment. The alternative approach, when considering the magnitude of the necessary adjustment and the likely sacrifice in terms of the ensuing output loss, is to delay—either tacitly or openly—the fiscal correction and to rely on short-term financial measures, including an aggressive interest rate policy, until the turbulence in capital markets subsides. As a departure from these contrasting views, this paper explores the effective use of fiscal tools, at the least output cost, in an open emerging-market economy that maintains a pegged exchange rate arrangement, with the purpose of reducing or eliminating its vulnerability to currency crises.

As background for our discussion, an attempt is made at identifying the role of fiscal policy in major currency crises in emerging markets in the 1990s in an environment increasingly characterized by high capital mobility. This is followed by a brief survey of the existing theoretical literature in explaining the fiscal contribution to a crisis. In this context, the paper assesses the scope for policy signaling to turn around market sentiment toward a favorable outcome, and thus mitigate the economy's vulnerability to a speculative attack. In particular, it focuses on the potential usefulness of fiscal policy rules for preventing crises at a relatively low sacrifice in terms of activity foregone.

II. CRISIS EPISODES

It is fitting to begin an overview of crisis episodes with the currency crisis that hit Austria in the early 1930s not only because of the venue of this conference, but more important, because of its striking resemblance to the recent experience in emerging markets. In the run-up to the crisis, with a fixed exchange rate system, openness in the capital account and a poorly regulated financial system, Austria was exposed to considerable capital volatility. Although the fiscal accounts had been in balance since the mid-1920s, the emergence of a small unanticipated deficit in the course of 1931, in combination with the granting of full state guarantee on all liabilities of the Credit-Anstalt, set the stage for the crisis. Fearful of mounting public sector liabilities and of future monetization of budget deficits—given the authorities' likely response to rising unemployment—economic agents launched a speculative attack forcing the central bank to abandon the exchange rate parity.²

² These expectations were fed in part by the memory of high inflation in the post-war period. See the comprehensive documentation of the crisis in Schubert (1991).

It is interesting to note that—reminiscent of the Austrian episode—not all of the recent crises (unlike those in the 1960s through the 1980s) exhibited a large fiscal imbalance and in none was the imbalance directly monetized in the pre-crisis period (Table 1).³ Russia, Brazil, and Ecuador stood out with government deficits of 6 to 8 percent of GDP (which partly reflects the interest bill attributable to defending the currency) and gross public indebtedness of 46 to 83 percent of GDP, concentrated heavily in short-term maturities. In comparison, other countries *recorded* close to a balance, or surplus, and significantly lower debt ratios—except for Mexico's large, mainly short-term, *net* debt.⁴

Failure to look at the evidence beyond the official narrowly-defined government accounts prompted a number of observers of the Mexican, Czech, and Asian crises to declare *ipso facto* that fiscal policy played at most a peripheral role in the onset of the crisis.⁵ This assertion, however, is questionable in light of a cross-country comparison of a broader range of vulnerability indicators—notwithstanding a host of measurement caveats.⁶ The indicators presented here attempt to capture, albeit imperfectly, the extent of quasi-fiscal activities of public financial institutions and contingent liabilities assumed implicitly or explicitly by the government before the crisis.

In Mexico, the Czech Republic, and Russia, weak financial institutions, under government control, had become vehicles of covert subsidization. A sizable *unrecorded* public sector imbalance and indebtedness, especially in short-term obligations, associated with these quasi-fiscal activities enhanced significantly the vulnerability to the collapse

³ A currency crisis is defined herein in terms of the collapse of the exchange rate peg, consisting of a fixed or preannounced crawling peg, with or without margins. In principle, such a regime can include a tightly managed float as well. All countries shown in the table display considerable openness, as measured by the index of exchange and capital controls; for an explanation, see Tamirisa (1999).

⁴ It should be noted that the actual fiscal deficit reflects the effect of the strong above-trend growth in most of these countries prior to the crisis. At the time, the cyclically-adjusted or structural deficit was probably significantly larger than the actual deficit.

⁵ See, for example, Sachs, Tornell and Velasco (1996) on the Mexican crisis; also, the fiscal balance was excluded from their cross-country investigation because of data limitations. Begg (1998) dismissed fiscal policy as a cause of the Czech crisis. Similarly, Radelet and Sachs (1998) ignored the possible fiscal factors underlying the Asian crisis. On the other hand, Lane and others (1999) and Berg (1999) acknowledged the likely role of implicit government liabilities arising from guarantees to financial institutions in the Asian crisis.

⁶ Unrecorded public sector debt is for the most part understated; likewise, the share of nonperforming loans was grossly understated before the crisis in Mexico, Russia, and Ecuador.

Table 1. Selected Indicators of Vulnerability Prior to the Crisis ^{1/}
(Percent of GDP, unless otherwise indicated)

	Exchange rate regime		Exchange and capital controls (Index) ^{2/}	Recorded fiscal balance ^{3/}	Gross public debt		Nonperforming bank loans (Percent of total)	Introduction of guarantees on bank liabilities
	Type of peg	End date			Recorded	Other ^{4/}		
Mexico	crawling	Dec. 1994	0.21	--	38 ^{5/}	2 ^{5/ 6/}	9 ^{6/}	7/
Czech Republic	fixed	May 1997	0.19	- 2	11	16	29	7/
Thailand	fixed	July 1997	0.40	- 1	4	30 ^{8/}	19	yes
Indonesia	fixed	July 1997	0.34	2	24	17 ^{8/}	17	yes
Korea	fixed	Oct. 1997	0.40	- 1	11	32 ^{8/}	16	yes
Russia	crawling	Aug. 1998	0.56	- 8	46	...	4 ^{6/}	7/
Brazil	crawling	Jan. 1999	0.47	- 8	56	...	11	
Ecuador	crawling	Feb. 1999	0.13	- 6	83	...	9 ^{6/}	yes ^{9/}

Sources: EBRD, IBRD, and IMF.

1/ Indicators refer to period immediately prior to (or including) the date of abandonment of the fixed or preannounced crawling peg.

2/ Index values range from 0 (lowest) for most liberal to 1 (highest) for most restrictive regime.

3/ General government, unless otherwise noted.

4/ Nonrecognized liabilities, including contingent liabilities, except for those of social security institutions.

5/ Net debt.

6/ Significantly underestimated.

7/ Significant share of banking sector (including development banks) under state ownership.

8/ Estimated on the basis of recapitalization of the banking sector.

9/ Including off-shore deposits.

of the exchange rate regime. As the crisis approached, investors had become increasingly aware of the proliferation of such activities, even when they escaped measurement.⁷

Admittedly, in some cases, especially in Asia, the paucity of reliable pre-crisis data on quasi-fiscal imbalances and contingent liabilities—that cannot be adequately quantified with *ex post* estimates of the fiscal costs of bank restructuring—does not permit an unambiguous assessment of the fiscal contribution to the crisis. At a minimum, it can be argued that fiscal policy ratified an excessive level of (mostly short-term) private sector indebtedness. Even without conclusive evidence, it appears that many investors believed—following certain assurances—that an eventual government bailout would be forthcoming.⁸

In all the crisis-hit countries under scrutiny, with the possible exception of Brazil, a largely unregulated banking system intermediated, first, large-scale capital inflows, and later, a significant domestic credit expansion that sterilized the subsequent capital outflows. As external reserves fell, the government's ability to defend the overvalued currency was challenged and a vicious cycle ensued. Although perhaps not apparent at a first glance, the resulting buildup of nonperforming loans was viewed as implicitly guaranteed by the government, fueling expectations of a future bailout of the banking system. In this sense, while weaknesses in the banking system did not by themselves constitute a fiscal determinant of the crisis, they were perceived as reflecting an unsustainable fiscal position by virtue of the underlying implicit government guarantees.

Eventually, expectations about future government deficits became self-fulfilling when the authorities announced the extension of blanket guarantees to bank depositors and creditors. As the government assumed the role of lender of last resort,⁹ with liquidity injections and extension of explicit guarantees on bank liabilities, the near-term solvency of the public sector became open to question, contributing to the speculative attack. Under the circumstances, formalization of implicit guarantees in the Asian countries and Ecuador can be regarded as an event that triggered or aggravated the crisis.

⁷ In Mexico, as discussed in Gil-Díaz and Carstens (1997), government-controlled development banks occupied a central role in financial intermediation and contributed to the crisis. See Polackova (1999) for estimates of contingent liabilities accumulated in connection with state-owned banks in the Czech Republic. Rough estimates for Mexico and the Czech Republic suggest that quasi-fiscal deficits associated with the banking system may have totaled at least 4-5 percent of GDP prior to the crisis. In Russia, the banking system had been dominated by the state-owned Sberbank which was instrumental in carrying out quasi-fiscal activities.

⁸ See, for example, Krugman (1998).

⁹ This role, of course, was a misinterpretation of the classical principle of lender of last resort that calls for central bank lending anonymously against good collateral at penalty rates. None of these conditions prevailed when the government stepped in to rescue the weakest banks. Nonetheless, it is understandable that, when facing bank runs, the authorities feel compelled to provide full protection to depositors and creditors. In the event, every effort should be made to limit moral hazard and the fiscal costs; see Baliño and others (1999).

By and large, given the perceived policy inconsistency and lack of fiscal sustainability—whether evident in the recorded fiscal imbalance and indebtedness, or hidden in quasi-fiscal activities and contingent liabilities—accompanied by a decline in reserves, the crisis can be precipitated by unfavorable signaling of a weak government. Ambiguous or contradictory pronouncements by the authorities—including an adverse legislative action or judicial decision—may be interpreted as signaling lack of commitment to correct the inconsistency. This was the situation in Brazil in late 1998 and early 1999, when legislative rejection of a key measure of the stabilization program and confrontation between federal and state authorities triggered the abandonment of the peg.¹⁰

More generally, in most of these countries, a major cause of the crisis has been the lack of fiscal transparency. Public sector finances were rather opaque not only in the treatment bank rescue operations, but also in the institutional coverage of the public sector, including a plethora of quasi-fiscal activities and implicit guarantees, as well as in public accounting practices. In some countries, the accumulation of wage and pension arrears to contain cash deficits simply camouflaged the actual accrual-based imbalances. In these circumstances, sudden disclosure of previously concealed information about the magnitude of the loss of official foreign exchange reserves and the buildup of government liabilities, without a commitment to correct the underlying policy inconsistency, must have contributed to the crisis.

III. CONCEPTUAL FRAMEWORK

Much of the existing literature evolved—largely motivated by the need to forecast and prevent crises—following two waves of crises: first, those experienced in the 1960s through 1980s in developing countries, and second, those in the 1990s within the EMS and in emerging markets. Overall, considerable progress has been made toward a robust theoretical explanation of the evolution of balance-of-payments crises. The literature provides a useful framework of analysis for tracing fiscal causes or for suggesting fiscal solutions, though with limited insights as to political economy and institutional aspects.

First-generation models highlight the inconsistency between fiscal policy fundamentals and the exchange rate peg that leads to abandonment of the peg. In simple terms, a large monetized budget deficit is accompanied by a gradual fall in reserves that collapse to zero at the time of the attack on the currency.¹¹ The basic model is open to a number of qualifications as to the sterilization of the decline in reserves, the behavior of money demand, and the debt-financing of budget deficits.¹² Thus, on the whole, this approach

¹⁰ Specifically, Congress refused to enact planned increments in the payroll tax rate and its extension to retirees under the civil servants' pension system. This was followed by the refusal by some state governors to comply with debt service obligations to the federal government.

¹¹ See the seminal analysis in Krugman (1979).

¹² See the discussion in Calvo (1997).

seems to fit not only the earlier wave of crises, but also the recent one involving Russia, Brazil and Ecuador.

Furthermore, the basic model can be extended to encompass not only recorded fiscal imbalances, but also those associated with quasi-fiscal activities or prospective imbalances stemming from the accumulation of contingent government liabilities, especially insofar as such imbalances are expected to be monetized in the future. Thus, the net financial assets—including contingent assets less contingent liabilities—of the public sector can be regarded as a key determinant of speculative attacks. When the net asset position of the government declines becomes highly negative, the process results in abandonment of the peg in a deterministic way, much like in other first-generation models.¹³

In second-generation models, large-scale capital inflows (often attracted by a speculative bubble) turn into pre-crisis outflows that may be (but are not necessarily) predicated on a policy inconsistency. The actual attack on the currency is prompted by a shift in investor sentiment, that is, in market expectations, from a good to a bad equilibrium.¹⁴ In contrast to the linear behavior assumed in first-generation models, which leads to the inevitability of the crisis, these multiple-equilibrium models allow for policy nonlinearities.¹⁵ The unfavorable shift in sentiment can be triggered by new perceptions about prospective policy inconsistencies reflecting future budget deficits in connection with quasi-fiscal activities or contingent liabilities associated, for instance, with a likely bailout of failing banks.¹⁶ This explanation is relevant for most of the episodes examined, and in particular for the Asian crisis, that seem to lie outside the scope of the first-generation models.

In general terms, vulnerability to a currency crisis is enhanced not only by a large explicit or recorded fiscal imbalance, but equally by a perceived implicit lack of fiscal sustainability. Thus, the attack can take place when investors obtain new information that the government's net liabilities exceed a certain threshold, or when the government decides to extract seigniorage, instead of embarking on a fiscal adjustment, to meet the intertemporal budget constraint. In the event, the immediate cause of the crisis is the signal that the government will resolve the policy inconsistency by abandoning the exchange rate rule rather than by attempting to contain the public sector imbalance.

¹³ For this purpose, net assets are defined as incorporating reserves plus some contingent assets less public debt and insured private bank liabilities. In developing this model, Dooley (1998) further identified the appropriation of the profit from deposits by unregulated banking institutions, for investment offshore, as an added incentive to risky financial intermediation. For a similar approach, see Corsetti, Pesenti and Roubini (1999).

¹⁴ See, for example, Obstfeld (1994).

¹⁵ For an analysis of various types of state contingent policies and a reconciliation between first- and second-generation models, see Flood and Marion (1998).

¹⁶ See an application to the Asian crisis in Burnside, Eichenbaum and Rebelo (1999).

IV. THE ROLE OF SIGNALING

In the spirit of first-generation models, the orthodox prescription for preventing a currency crisis is a tough front-loaded fiscal adjustment that encompasses the entire public sector (including extrabudgetary and quasi-fiscal operations) and is sufficiently large to correct the underlying policy inconsistency.¹⁷ However, it has become increasingly difficult to implement a fiscal adjustment program in the short term under a democratic, representative system of government. Even if it was feasible on political grounds, such an approach could be counterproductive. For one thing, rapid adjustment often requires excessive reliance on quick-yielding distortionary taxes or cuts in productive investment expenditures—especially in the presence of rigidities in the fiscal structure.¹⁸ Even worse, reduction of the cash deficit through buildup in payment arrears or across-the-board wage cuts can just as easily be reversed in a subsequent period; meanwhile, this type of measures may preempt much-needed structural reforms. In any event, the composition and speed of such an adjustment is likely to result in a procyclical stance that aggravates the adverse real impact of pre-crisis capital outflows.¹⁹

In a multiple-equilibrium context, investor sentiment toward fundamentals can shift as a result of new information, shocks (including through contagion), or an announcement about changes in policy course.²⁰ Accordingly, if credible, signaling about a future fiscal adjustment can influence favorably present expectations. Perception of a future correction in fundamentals can elicit favorable investor response which will be sustained as long as the signaling is followed up with sufficiently wide-ranging and tangible structural reform measures over the medium term.

Broadly speaking, it is useful to distinguish between two types of signaling according to the time consistency of the adopted policy stance. In the first type, the initial toughness (followed by laxity) lacks credibility; by contrast, the second type, albeit perhaps not so tough, involves persistence and credibility.²¹ Although formal grafting of policy signaling

¹⁷ For example, Begg (1998) argued that the Czech crisis could have been prevented with a substantial budget surplus.

¹⁸ This has been the case of countries with a very high proportion of earmarked tax revenue (Ecuador) or with a substantial devolution of taxing authority to subnational governments (Brazil).

¹⁹ In a sense, this approach can be compared to slamming on the brakes to avoid a collision which may cause as much damage to the occupants of the vehicle as the crash itself.

²⁰ In a recent extension of a balance-sheet constrained multiple-equilibrium model, Krugman (2000) found that a fiscal expansion—particularly if undertaken by a large creditor country—can lead to a good equilibrium; on the other hand, a fiscal contraction can result in a crisis, unless it is accompanied by confidence-building pronouncements by the authorities.

²¹ See an application of this approach to monetary policy in Drazen and Masson (1994).

onto a second-generation model is beyond the scope of this paper, the upshot of this reasoning is that policymakers should strive for persistence and credibility, rather than initial toughness, in formulating the fiscal stance in the face of a possible currency crisis.

Brazil provides two recent examples of fiscal policy signaling which are seen as having prevented a currency crisis, followed by a reversal that ultimately led to the crisis. In July 1997, a package of corrective measures was adopted to fend off a possible contagion from the Asian crisis. In October 1998, at an even more critical juncture in the wake of the Russian crisis, the authorities launched a three-year fiscal adjustment program. In both instances, the announced measures were greeted favorably by financial markets. However, the erosion of credibility that followed the announcement of the second package was due to the failure to deliver on a key policy commitment, absent sufficient support from certain interest groups, thus precipitating the January 1999 crisis. The latter is a clear illustration of the need to match policy announcements with action.

A major benefit from relying on credible fiscal signaling to prevent currency crises is that, in part because of the breathing room afforded, it tends to embody a higher quality adjustment over a medium-term horizon, with a likely countercyclical outcome.²² With greater potential for creating a broad consensus for structural reforms, the adjustment can in fact be expansionary. In other words, instead of relying on a wage freeze, investment reduction, or other temporary demand-restraining measures, the adjustment should consist of durable reform measures, such as layoffs of redundant government employees, substitution of targeted transfers for price subsidies, or broadening of tax bases. If necessary, of course, the adjustment should include upfront the restructuring of the banking system.²³ Such reform steps have been conducive to stability and growth in a number of developing and industrial countries.²⁴

These reform measures can be implemented in the context of a medium-term adjustment program. Nevertheless, the potential not only for preventing a currency crisis, but more generally, for ensuring price and exchange rate stability, is even greater with the adoption of permanent macro-fiscal policy rules.²⁵ Indeed, a balanced-budget requirement or limits

²² Such an approach, however, does not preclude one-off or transitory measures, such as the use of privatization receipts to ease the public sector borrowing requirement in the short run.

²³ Considerable caution should be exercised, however, in providing liquidity and extending guarantees to banks in distress without adequate risk-pricing and tangible corrective steps—so as to avoid feeding moral hazard and expectations of a costly bailout. Only under certain circumstances are such bailouts justifiable as an optimal application of the “too big to fail” doctrine; see Freixas (1999).

²⁴ See, for example, the analysis of fiscal consolidations in Denmark and Ireland in Giavazzi and Pagano (1990), and Bertola and Drazen (1993). For a larger group of industrial countries, see Alesina and Perotti (1997). A similar experience can be found among developing and transition economies: Ghana and Turkey in the early 1980s, Chile since the mid-1980s, and Poland in the early 1990s.

²⁵ This is consistent, as a counterpoint, with the view in Mishkin and Savastano (2000) that fiscal discipline and a sound banking system are crucial for viable inflation targeting or adherence to a hard peg, as practiced for example in several countries in Latin America.

on public debt, binding successive governments, if credibly implemented, can confer considerable benefits. Notably, these benefits include a decline in risk premia, reflected in falling interest rates, and a boost in growth, as experienced, for example, in some highly indebted European Union (EU) member countries during their convergence to participation in the Economic and Monetary Union (EMU).

Not surprisingly, therefore, some emerging-market countries have just enacted an ambitious set of fiscal rules. Argentina and Peru introduced balanced-budget constraints and expenditure limits, accompanied by a stabilization fund to mitigate the impact of cyclical fluctuations. In Brazil, the authorities are subject to similar budget and expenditure adjustments, as well as debt limits. In each case, these rules involve transparent reporting and accounting procedures (Box 1). Other countries (Chile, Colombia, India, Venezuela) are seriously considering the adoption of similar fiscal rules in the future. In addition, in their bid for accession to the EU, several Central and Eastern European countries have expressed the intention of converging to the EMU fiscal reference values.

For fiscal policy rules to be successful, they need to be implemented following a carefully mapped convergence path, with adequate flexibility to accommodate exogenous shocks and subject to (often reputational) penalties for noncompliance.²⁶ But above all, it is necessary to apply rules in the most transparent manner, that is, limiting the scope for creative accounting practices and accompanied by comprehensive and frequent reporting requirements. The information provided should contain data on fiscal vulnerability indicators (such as those quantified above), including on contingent liabilities measured on a risk-adjusted basis.²⁷

In all, fiscal policy rules must be viewed as a framework for introducing structural reforms in such areas as banking, social security, intergovernmental fiscal relations, and taxation. Conversely, these reform steps should facilitate compliance with the rules.²⁸ In the final analysis, the credibility of a rule, and thus its usefulness as a tool for crisis prevention, hinges on steady progress in key reform areas. In fact, reforms are being monitored with increasing sophistication by financial markets, as they are learning to discriminate among countries on the basis of each country's own performance

²⁶ For a discussion of the characteristics and the conditions that must prevail for effective implementation of fiscal rules, see Kopits and Symansky (1998).

²⁷ It would be particularly useful to estimate, along with the level and composition of actual public debt, all commitments and contingent liabilities, as well as the present value of the net liabilities of social security institutions; see Kopits and Craig (1998), and Schick (1999). Contingent liabilities could be measured on a risk-weighted basis, much like certain components of the capital adequacy ratio prescribed for commercial banks under the Basle Committee standards.

²⁸ In an analogous setting, it is hard to imagine how some EMU participants will be able to comply with the fiscal reference values in the future without deep structural reforms in public pensions and health-care programs.

Box 1. Fiscal Policy Rules in Argentina, Brazil and Peru

In Argentina, under the Law on Fiscal Solvency adopted in September 1999, the federal government is required (a) to maintain a position of overall balance from 2003 onwards, following a three-year convergence period, and (b) to limit the real growth of primary expenditures to the real growth of GDP, or to zero in the event of a fall in GDP. In order to mitigate the budgetary impact of cyclical fluctuations in activity, the Law establishes a stabilization fund, to be built up from an earmarked portion of privatization receipts and of surpluses, and to be drawn from during a downturn in activity. Any net accumulation in excess of 3 percent of GDP in the fund would be used for external debt prepayment, investment, or social expenditures. Although exempt from the Law, the provincial governments are invited to adopt similar fiscal rules; while some provinces have already implemented them, others are considering doing so.

In Peru, the Law on Fiscal Prudence and Transparency, enacted in December 1999, declares as a general principle that the government should adhere to a balanced or surplus position over the medium term. With a coverage that extends practically to the entire general government, the rules resemble closely those of Argentina. Specifically, the Law obliges the authorities (a) to maintain overall balance, subject to a ceiling equivalent to 1 percent of GDP, and (c) to limit the annual nominal growth of primary expenditure to 2 percentage points above the annual rate of inflation. The rules could be waived in the event of national emergency or international crisis; on evidence of a contraction of GDP, the deficit would be allowed to rise to 2 percent of GDP. Also, the Law provides for a stabilization fund, constituted from a portion of excess revenues and privatization receipts, to be drawn to compensate for a cyclical shortfall. Any net accumulation above 3 percent of GDP would be used for retiring public debt.

In Brazil, the Fiscal Responsibility Law of May 2000 obliges, effective in 2001, the federal government, each state government, and each municipality (a) to maintain current balance, (b) to limit all personnel expenditures, including pensions, under 60 percent (50 percent for the federal government) of net current revenue (i.e., net of transfers and contributions), and (c) to limit the ratio of its debt to net current revenue within the limits set for each year by the President. In addition, the Law prescribes detailed rules for offsetting any unanticipated increase in expenditures and any increase in tax preferences, for granting guarantees, and for own financing of any increase in public pension benefits.

Each country's legislation contains a set of transparency requirements for public disclosure *ex ante* of fiscal targets with varying degrees of detail, in the context of a three-year budgetary framework, and *ex post* of comprehensive and timely information regarding budgetary execution and compliance with the rules. This information is required to conform closely with generally accepted accounting principles. Compliance with the fiscal rules and the associated reporting requirements is subject to surveillance and arbitration by the legislature. In Argentina the Congress is assisted in this function by the National Audit Office, and in Brazil by the Audit Courts and the Office of the Public Prosecutor. Furthermore, in Brazil, separate legislation prescribes sanctions for noncompliance with the Law.

rather than continue relying on a collective perception of emerging markets as a whole.²⁹

V. SUMMARY AND CONCLUSION

Inconsistency between the fiscal stance and an exchange rate rule renders an open economy, with an unregulated financial system, vulnerable to balance-of-payments crises, as illustrated by a number of well-known episodes in the second half of the 1990s. Besides rather obvious cases of large *explicit* public sector deficits and mainly short-term indebtedness (Russia, Brazil, Ecuador), the vulnerability can be just as real in the case of *implicit* deficits perceived as unsustainable by financial markets (Mexico, Czech Republic, Thailand, Indonesia, Korea).

Whereas first-generation models are more amenable for explaining crises involving large *actual* fiscal imbalances, second-generation models can also capture those triggered by shifts in investor *perceptions* about fiscal sustainability. As a corollary, a currency crisis can be prevented by signaling through a phased fiscal adjustment with a rich structural reform content, preferably based on a broad consensus. This approach has advantages in terms of persistence and durability, as compared to a tough front-loaded adjustment that is subject to political economy limitations and is likely to be procyclical and reversible.

Fiscal policy signaling can be effective in averting a crisis, or in restoring confidence after a crisis, only if it is credible. Credibility, in turn, is achieved by steady implementation of key structural reform measures (if necessary, including restructuring of the banking system), especially in the context of macro-fiscal policy rules, such as the ones being adopted—along with strict transparency requirements—in several emerging-market economies (Argentina, Brazil, Peru). Indeed, a set of well-designed permanent rules on public sector balance and indebtedness can be a powerful tool in reducing or eliminating the vulnerability of these economies, while maintaining an open capital account. Over time, compliance with such rules, accompanied by a high degree of transparency in government institutions, policymaking and accounting practices, would ensure stability and growth. In addition, with a proven track record, a sound fiscal policy rule can become a useful substitute for an exchange rate rule.

²⁹ Increasingly, international banks are devoting in-depth coverage to structural reform issues, in addition to the routine monitoring of short-term macroeconomic and financial developments.

REFERENCES

- Alesina, A. and R. Perotti, 1997, "Fiscal Adjustments in OECD Countries: Composition and Macroeconomic Effects," *IMF Staff Papers*, Vol. 44 (June), pp. 210-248.
- Baliño, J.T., C. Enoch, A.M. Gulde, C.J. Lindgren, M. Quintyn, and L. Teo, 1999, *Financial Sector Crisis and Restructuring: Lessons from Asia*, IMF Occasional Paper 188 (Washington, IMF).
- Begg, D., 1998, "Pegging Out: Lessons from the Czech Exchange Rate Crisis," Center for Economic Policy Research, Discussion Paper 1956 (London, September).
- Berg, A., "The Asia Crisis: Causes, Policy Responses, and Outcomes," IMF Working Paper (forthcoming).
- Bertola, G., and A. Drazen, 1993, "Trigger Points and Budget Cuts: Explaining the Effects of Fiscal Austerity," *American Economic Review*, Vol. 83 (March), pp. 11-26.
- Burnside, C., M. Eichenbaum, and S. Rebelo, 1999, "Prospective Deficits and the Asian Currency Crisis," Policy Research Working Paper 2174 (Washington, World Bank).
- Calvo, G., 1997, "The Unforgiving Market and the *Tequilazo*," in J.M. Fanelli and R. Medhora, eds., *Financial Reform in Developing Countries* (New York, Macmillan).
- Corsetti, G., P. Pesenti, and N. Roubini, 1999, "Paper Tigers? A Model of the Asian Crisis," *European Economic Review*, Vol. 43 (June), pp. 1211-1236.
- Dooley, M.P., 1998, "A Model of Crises in Emerging Markets," International Finance Discussion Paper 630 (Washington, Board of Governors of the Federal Reserve System).
- Drazen, A., and P.R. Masson, 1994, "Credibility of Policies versus Credibility of Policymakers," *Quarterly Journal of Economics*, pp. 735-754.
- Flood, R.P., and N.P. Marion, 1998, "Perspectives on the Recent Currency Crisis Literature," NBER Working Paper 6380 (Cambridge, MA, January).
- Freixas, X., 1999, "Optimal Bailout Policy, Conditionality, and Constructive Ambiguity" (unpublished).
- Giavazzi, F. and M. Pagano, 1990, "Can Severe Fiscal Contractions be Expansionary? Tales of two Small European Countries," *NBER Macroeconomics Annual 1990* (Cambridge, MA, MIT Press).

- Gil-Díaz, F. and A. Carstens, 1997, "Pride and Prejudice: The Economics Profession and Mexico's Financial Crisis," in S. Edwards and M. Naim, eds., *Mexico 1994: Anatomy of an Emerging-Market Crash* (Washington, Carnegie Endowment for International Peace).
- Kopits, G., and J. Craig, 1998, *Transparency in Government Operations*, IMF Occasional Paper 158 (Washington, IMF).
- Kopits, G., and S. Symansky, 1998, *Fiscal Policy Rules*, IMF Occasional Paper 162 (Washington, IMF).
- Krugman, P., 1979, "A Model of Balance-of-Payments Crises," *Journal of Money, Credit and Banking*, Vol. 11 (August), pp. 311-325.
- Krugman, P., 1998, "What Happened to Asia?" (unpublished, January).
- Krugman, P., 2000, "Analytical Afterthoughts on the Asian Crisis" (unpublished, February).
- Lane, T., A. Ghosh, J. Hamann, S. Phillips, M. Schultze-Gattas, and T. Tsikata, 1999, *IMF-Supported Programs in Indonesia, Korea, and Thailand: A Preliminary Assessment*, IMF Occasional Paper 178 (Washington, IMF).
- Mishkin, F.S., and M.A. Savastano, 2000, "Monetary Policy Strategies for Latin America," NBER Working Paper 7617 (Cambridge, MA, March).
- Obstfeld, M., 1994, "The Logic of Currency Crises," NBER Working Paper 4640 (Cambridge, MA).
- Polackova, H., 1999, "Dealing with Contingent Liabilities in the Czech Republic" (unpublished).
- Radelet, S., and J. Sachs, 1998, "The East Asian Financial Crisis: Diagnosis, Remedies, Prospects," *Brookings Papers on Economic Activity* (Washington), pp. 1-87.
- Sachs, J., A. Tornell, and A. Velasco, 1996, "Financial Crises in Emerging Markets: The Lessons from 1995," *Brookings Papers on Economic Activity* (Washington), pp. 147-215.
- Schubert, A., 1991, *The Credit-Anstalt Crisis of 1931* (Cambridge, Cambridge University Press).
- Tamirisa, N.T., 1999, "Exchange and Capital Controls as Barriers to Trade," *IMF Staff Papers*, Vol. 46 (March) pp. 69-88.

