

The Design of IMF-Supported Programs

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The following symbols have been used throughout this paper:

. . . to indicate that data are not available;

— to indicate that the figure is zero or less than half the final digit shown, or that the item does not exist;

– between years or months (e.g., 2003–04 or January–June) to indicate the years or months covered, including the beginning and ending years or months;

/ between years (e.g., 2003/04) to indicate a fiscal (financial) year.

“n.a.” means not applicable.

“Billion” means a thousand million.

Minor discrepancies between constituent figures and totals are due to rounding.

The term “country,” as used in this paper, does not in all cases refer to a territorial entity that is a state as understood by international law and practice; the term also covers some territorial entities that are not states, but for which statistical data are maintained and provided internationally on a separate and independent basis.

Preface

The past 15 years have seen important developments in the challenges facing IMF member countries, and therefore in the objectives of the economic programs for which national authorities have sought the IMF's support. Yet the very responsiveness of the IMF to these evolving needs has inevitably complicated program design and the evaluation of program success. In this occasional paper, IMF staff take a detailed look at the experience with IMF-supported programs during 1995–2000.

The Design of IMF-Supported Programs was prepared by a staff team headed by Atish Ghosh and comprising Charis Christofides, Jun Kim, Laura Papi, Uma Ramakrishnan, Alun Thomas, and Juan Zalduendo, assisted by Barbara Dabrowska, Siba Das, Olivia Carolin, and Neri Gomes, under the overall supervision of G. Russell Kincaid and Mark Allen. Esha Ray of the External Relations Department edited and coordinated production of the publication.

An earlier draft of this occasional paper was discussed by the IMF's Executive Board. The opinions expressed in the paper are those of the authors, however, and do not necessarily reflect the views of national authorities, the IMF, or IMF Executive Directors.

Abbreviations

<i>AREAER</i>	<i>Annual Report on Exchange Arrangements and Exchange Restrictions</i>
CAC	Capital account crisis
CIS	Commonwealth of Independent States
EFF	Extended Fund Facility
EMBI	Emerging Market Bond Index
ERBS	Exchange-rate-based stabilization
ESAF	Enhanced Structural Adjustment Facility
EU	European Union
FDI	Foreign direct investment
G-7	Group of Seven countries
GDP	Gross domestic product
GIR	Gross international reserves
GRA	General Resources Account
HIPC	Heavily Indebted Poor Countries
ICOR	Incremental capital output ratio
IEO	Independent Evaluation Office
<i>IFS</i>	<i>International Financial Statistics</i>
MBS	Money-based stabilization
MONA	Monitoring of Fund Arrangements database
NDA	Net domestic assets
NIR	Net international reserves
NPV	Net present value
PPP	Purchasing power parity
PRSP	Poverty Reduction Strategy Paper
RMSE	Root mean squared error
SAF	Structural Adjustment Facility
SBA	Stand-By Arrangement
UIP	Uncovered interest rate parity
<i>WEO</i>	<i>World Economic Outlook</i>



Part I

Overview



Overview

According to its Articles of Agreement, one of the fundamental purposes of the IMF is to make its resources temporarily available to members to help correct balance of payments problems without resorting to measures “destructive of national or international prosperity.” But that still leaves open many questions regarding the economic programs for which national authorities seek the IMF’s financial support. What are the specific goals of such programs, and what challenges do they face? How are programs formulated? What do they consist of? And are they successful? This collection of papers on the design of IMF-supported programs—“Objectives and Outcomes,” “Policy Formulation, Analytical Frameworks, and Program Design,” and “Macroeconomic and Structural Policies: Review of Experience”—seeks to answer these questions.

This project, mandated by the IMF’s Executive Board as part of the 2004/05 Conditionality Review and complemented by the review of the application of the conditionality guidelines,¹ examines the design of IMF-supported programs over the period 1995–2000. In order to seek insights from a comparison across different types of programs—and in contrast to earlier studies²—the present collection of papers covers IMF financial arrangements in both middle-income countries (supported by the General Resources Account (GRA) and consisting of Stand-By Arrangements (SBAs) and Extended Fund Facility (EFF) arrangements) and in low-income countries (supported by the Enhanced Structural Adjustment

Facility (ESAF), which was replaced by the Poverty Reduction and Growth Facility (PRGF) in 1999).

Objectives and Outcomes

The starting point of the analysis—and indeed of the design of any IMF-supported program—is the program’s objectives. The past fifteen years have seen important changes in this regard, reflecting the diversity of challenges facing IMF members, including helping countries transform from centrally planned to market economies, promoting growth and poverty reduction, and dealing with capital account crises where massive capital outflows have pervasive macroeconomic consequences. Yet the very responsiveness of the IMF to the evolving needs of its members has inevitably complicated program design, making it difficult to judge program success. Indeed, it is not uncommon to find IMF-supported programs criticized for failing to achieve objectives that were never, in fact, part of the program’s goals.

The first paper—“Objectives and Outcomes” (Part II of this occasional paper)—therefore seeks to classify programs by their main purposes and to propose some metrics for judging their success. It finds that, while individual programs naturally vary in myriad details, most can be placed into one of three or four broad categories. IMF-supported programs in middle-income countries (“GRA-supported programs”) conform—perhaps to a surprising degree—to the classic external adjustment paradigm. In these programs, the country is typically facing difficulties in financing its current account deficit (either because the economy has overheated and has lost competitiveness or because of an external shock). Program policies are intended to reduce the current account deficit to a sustainable level, while the IMF provides financing over a timeframe that enables the country to reconstitute its gross international reserves. Since the purpose of the program is to cool the economy and reduce the current account deficit, it is not surprising that the rate of output growth generally dips during the

¹The Review of the 2002 Conditionality Guidelines was discussed by the Executive Board in March 2005. The public information notice and related papers have been placed on the IMF’s external website (<http://www.imf.org/external/np/sec/pn/2005/pn0552.htm>).

²Susan Schadler and others, *IMF Conditionality: Experience Under Stand-By and Extended Arrangements*, IMF Occasional Paper No. 128 (Washington: International Monetary Fund, 1995); International Monetary Fund, *The ESAF at Ten Years*, IMF Occasional Paper No. 156 (Washington: International Monetary Fund, 1997); and Hugh Bredenkamp and Susan Schadler, eds., *Economic Adjustment and Reform in Low-Income Countries: Studies by the Staff of the International Monetary Fund* (Washington: International Monetary Fund, 1999).

program period, recovering to its previous level thereafter.

Although this classic adjustment paradigm applies to the bulk of middle-income country programs, there is an important subset where the magnitude of the capital outflows—as maturity and foreign exchange mismatches on domestic balance sheets unwind—forces an abrupt external adjustment and, typically, a collapse of the exchange rate and of economic activity. The time pattern of key macroeconomic variables in these capital account crises is similar—albeit more pronounced—to the classical case, with the notable difference that monetary and fiscal policies are geared more toward restoring confidence and mitigating the adverse impact on activity than to promoting external adjustment because adjustment is anyway forced on the country through the withdrawal of private financing.

The third group consists of transition economies and low-income countries—while these obviously differ in many respects, their IMF-supported programs share a common emphasis on macroeconomic stabilization and structural transformation to enhance economic efficiency and promote sustained growth—subject to maintaining external viability.

Finally, in a few cases the external accounts have largely been in balance and the IMF-supported program was intended primarily to enhance policy credibility, lowering interest rates and spreads and helping to put public debt dynamics on a more sustainable footing.

How, then, should program success be judged? Although the taxonomy suggests that the differing program types should be judged differently, all members should emerge from their IMF-supported programs with viable external positions. This is to ensure that the member is better able to cope with new shocks and to repay the IMF, safeguarding the revolving nature of its resources and allowing it to lend to others in need. One criterion for judging program success is therefore the record on external adjustment. But external adjustment involves an intertemporal trade-off: at one extreme, the country may have little recourse to financing, leading to a rapid reduction in its external indebtedness, but at the cost of a wrenching adjustment in the short run including of the exchange rate that is likely to take a significant toll on activity. More traditionally, the country attenuates its adjustment by receiving additional financing, including from the IMF, allowing time for some positive supply response. The challenge is of course to strike the proper balance between adjustment and financing.

Judging whether external adjustment was appropriate under the IMF-supported program therefore requires a metric against which the record can be judged. One such metric is simply a comparison

between programmed and actual current account balances, on grounds that individual program design would have targeted the appropriate adjustment. This is subject to the obvious criticism, however, that program design may have anticipated a lack of sufficient (private plus public) financing, so that both the programmed and actual current account adjustment would be greater than what was considered optimal. A second metric, therefore, is medium-term debt sustainability: that is, a country should undertake sufficient—but no more—adjustment to ensure that its external debt position is stabilized at a moderate level. The IMF’s financial role is to provide sufficient financing—both directly and through catalytic effects on markets and donors—to enable the member country to adjust at the appropriate pace, while its policy advice role is to help design a program that minimizes the economic and social disruption of the requisite adjustment (avoiding “measures destructive of national prosperity” in the parlance of the IMF’s Articles of Agreement).

How has external adjustment fared by these criteria? The findings in “Objectives and Outcomes” suggest a sharp demarcation between the experience of middle-income (GRA-supported) countries and that of low-income (ESAF/PRGF-supported programs). GRA-supported programs have generally targeted current account adjustments in line with debt sustainability considerations. A positive relationship exists between the initial level of external debt and the external adjustment targeted and achieved. As such, external adjustment was largely consistent with that required by medium-term debt sustainability. But in some cases—especially, but not exclusively, in capital account crises—external adjustment was greater than would be indicated by debt sustainability considerations. This pace of external adjustment did not reflect tight macroeconomic policies—on the contrary, fiscal consolidation generally fell short of program targets—but rather a lack of financing and corresponded to lower investment. At the same time, there is evidence that IMF-supported programs helped achieve a *given* improvement in the current account at lower cost in terms of lost output growth, perhaps because of more efficient policy choices.

The adjustment story in low-income countries is almost diametrically opposite: IMF-supported programs generally did not target sufficient external adjustment to ensure debt sustainability, and the actual improvement in the current account balance was *less* than programmed. As such, programs in these countries did not aim at (a fortiori did not achieve) external viability through external adjustment, but instead implicitly relied on future debt relief. The Heavily Indebted Poor Countries

(HIPC) and enhanced HIPC initiatives were instituted during this period, but it is noteworthy that programmed and actual current account balances would also have been insufficient to stabilize debt ratios at the lower debt levels achieved following this debt relief.

External viability, of course, is just one program objective—albeit an important one; as discussed above, depending upon country circumstances, programs may also seek to stabilize the economy, raise output growth, and reduce poverty. In contrast to experience in the 1980s, middle-income countries with IMF-supported programs saw durable reductions in inflation over the program period. Consistent with the classic adjustment paradigm, these programs saw a dip in real GDP growth during the program followed by a recovery of growth rates to their preprogram performance but not faster growth. Again, the experience of low-income countries is rather different. Consistent with the purposes of the ESAF and PRGF—and in contrast to experience in the 1980s—programs in these countries saw sustained improvements in growth performance during and following the program, driven by a combination of better macroeconomic policies (lower inflation and smaller after-grants fiscal deficits) and a more benign external environment (faster growth in industrial countries, smaller terms of trade shocks).

Overall, the findings of “Objectives and Outcomes” leave two important sets of questions. For programs dealing with capital account crises, the key question is how to better attenuate the improvement in the current account balance, avoiding disruptive adjustment, and bringing it better into line with debt sustainability considerations. Would this require greater IMF financing? Use of capital controls? A stronger policy response? Or is it an unavoidable consequence of a crisis, with prevention the only cure? For programs in low-income countries, the key challenge will be to sustain the improved growth performance—through lower inflation and smaller after-grants fiscal deficits—while moving toward external viability without depending on future debt-relief, avoiding a new cycle of lend and forgive. Will this require a larger proportion of financing in the form of grants rather than loans? Or a fundamental rethinking of program design in these countries?

Policy Formulation, Analytical Frameworks, and Program Design

If programs are to achieve their objectives, their design requires an analytic basis for linking program policies to program goals. In fact, one can think of a program as being defined by a set of intended poli-

cies—for instance, monetary and fiscal policy—that simultaneously determine, and are determined by, key macroeconomic targets, including growth, inflation, and the current account; together, these constitute the macroeconomic framework. But how are these projections for policies and targets undertaken? Using what analytical models? And how well does this process work in practice? “Policy Formulation, Analytical Frameworks, and Program Design” (Part III of this occasional paper) takes up these issues, examining the process of program design, the analytical tools employed, and the performance of the program design process.

Studying how programs are put together in practice suggests that there is no single “IMF model” employed by country teams in advising national authorities on program design. Rather, a wide variety of analytical methods—small econometric models, single equation estimates, cross-country parameters, and economic judgment—are used to model the program’s short-run macroeconomic framework. *Financial programming* is typically *not* used in the manner described in textbooks to pin down the permissible fiscal deficit given a foreign exchange reserves target and assumptions about the behavior of money demand. Rather, financial programming is used to check and ensure consistency across the various elements of the macroeconomic framework, each of which may have been modeled using a variety of techniques. This eclectic approach allows for program design to be tailored to country circumstances, including the availability of data and the stability of key time series. It also allows for policies to be adapted rapidly—typically at quarterly or semiannual reviews—in light of initial outcomes relative to program targets. Such adaptability is particularly important in capital account crises, where balance sheet exposures and capital outflows can alter the magnitude, and possibly even the sign, of traditional policy multipliers—such as the effect on the exchange rate of tightening monetary policy. In this regard, a recently developed tool—the *balance sheet approach*—can offer important insights into the implications of maturity and currency exposures on domestic balance sheets, though the data and analytical challenges in its use remain formidable.

Beyond the short-run macroeconomic framework, program design requires longer-term projections, especially for output growth. Here, again, country teams use a variety of methods—univariate approaches, production functions, aggregate demand decompositions, cross-country growth models—though formal modeling is relatively uncommon. These growth projections feed into debt sustainability assessments, which are usually undertaken in the format of the IMF’s *debt sustainability templates* that help discipline projections, lay bare the underlying

ing assumptions, and apply systematic stress testing to the baseline scenario for debt dynamics.

How well does this approach work? Since program documents do not lay out an explicit model, the only way to test performance is by a comparison of program projections to outcomes. For the short-run macroeconomic framework (a one-year horizon), the record is perhaps surprisingly good: with the exception of capital account crises (where capital outflows triggered a sudden collapse of output and the exchange rate), neither inflation nor growth projections exhibit systematic biases. The current account deficit is overestimated in GRA-supported programs and underestimated in ESAF/PRGF-supported programs. At longer horizons, however, projections do not fare as well: beyond the first year of the program (and for three-year averages), growth projections have optimistic biases, especially in low-income countries.

Medium-term debt projections also tend to be too rosy, although the reasons are complex. For low-income countries, in the absence of debt relief, the external debt-to-GDP ratio would be significantly higher than programmed because real GDP growth is lower than projected, real exchange rates tend to be weaker, and, as noted above, external adjustment is smaller than expected. In capital account crises, output growth, the real exchange rate, and the banking systems usually collapse, leading to sharply higher external debt ratios, but this is partly offset by the much greater external adjustment than programmed. For other middle-income countries, external debt projections are relatively accurate.

Projection errors of course confound modeling mistakes—of interest here—with policy slippages and exogenous shocks. Although individual program documents do not lay out the model underlying the design of the program, by looking *across* programs, it is possible to infer the relationships between policies and targets—for instance, between money growth and inflation or between fiscal expenditure and output growth—implicitly assumed by country teams. The relationships implicit in programs generally do not differ systematically from the actual relationships—with the exception of the effect of fiscal consolidation, where programs underestimate the positive impact on output growth and the improvement in the current account balance.

Overall, the findings suggest that the program design process works relatively well, particularly given the difficulties of modeling economies that are likely to be going through a period of disruption or structural transformation. At the same time, there are important challenges: predicting and understanding the implications of large capital flows in capital account crises, better modeling of medium-term growth, and improving debt sustainability assessments, especially the impact of exchange rates and financial crises.

Macroeconomic and Structural Policies: Review of Experience

Given program goals, and an analytical link between program objectives and policies, the third element of course is the policy content of the program—the exchange rate regime, monetary and exchange rate policies, fiscal policy, and structural reforms. To make this potentially enormous topic tractable, the discussion in “Macroeconomic and Structural Policies: Review of Experience” (Part IV of this occasional paper) centers around three questions: Was use of the policy geared toward achieving program objectives? Were the intended policies carried out? And what was the outcome?

Given that external adjustment is usually a cornerstone of IMF-supported programs, it is perhaps surprising that the exchange rate regime is no more likely to be altered at the outset of a program than at other times, and that up-front devaluations as part of an IMF-supported program are extremely rare. Nevertheless, middle-income countries embarking on disinflation efforts tend to adopt an exchange rate peg, especially the transition economies seeking to reestablish price stability following initial liberalizations. By contrast, low-income countries generally attempted disinflations under floating regimes. Was one strategy more successful than the other? No. Success rates at disinflation were almost identical under pegged and floating regimes. What appears to have differentiated successes from failures is whether the programmed fiscal consolidation was achieved. External adjustment was easier under floating exchange rate regimes, in the sense that a given improvement in the current account balance was associated with a smaller reduction in output growth, though the effect is not quantitatively large. Finally, countries with pegged exchange rate regimes were hypothesized to be more prone to excessive foreign currency borrowing and therefore suffered sharper external adjustment when pegs collapsed and capital outflows forced larger current account surpluses. While this may have happened in some capital account crises, the association between exchange rate pegs and sharper subsequent adjustment does not hold in the sample more generally.

Turning to monetary policies, across programs broad money growth rates are targeted to decline, as are inflation rates—though generally less so in low-income countries than in middle-income countries. The targeted monetary tightening is closely related to the programmed reduction in inflation and improvement in the current account balance, and negatively related to the output gap or to floating regimes. It is notable that disinflations undertaken in the context of IMF-supported programs are associ-

ated with faster growth in money demand—perhaps reflecting greater credibility of the authorities’ policies—than disinflations undertaken in the absence of a program, leading to lower inflation for a given broad money growth. Programs do succeed in lowering inflation, though not always by as much as was targeted, in part because of broad money overruns. Importantly, the source of the monetary overruns—whether reflecting balance of payments inflows or domestic credit creation—does not seem to matter for their inflationary impact, raising concerns about the need to sterilize large donor inflows or capital inflows if inflation targets are to be achieved. While the monetary stance is typically tightened in programs, there is no evidence that this tightening resulted in slower output growth.

Depending upon initial levels of government expenditure, the fiscal deficit, and the programmed improvement in the current account balance, programs on average envisage a fiscal tightening of around 1 to 2 percentage points of GDP over a two-year period; controlling for these initial conditions, programs in low-income countries target about 1 percent of GDP less fiscal adjustment than middle-income country programs. While the fiscal tightening in the initial program year is generally achieved, important slippages occurred by the following year, particularly when growth turned out to be weaker than expected or the envisaged adjustment was particularly large or based primarily on revenue effort. In turn, fiscal slippages contribute to failures at disinflation and to worse public debt dynamics—though the largest source of errors in projections of public debt dynamics comes from valuation changes on foreign-currency-denominated debt and from the fiscal costs of banking crises.

An often controversial aspect of IMF-supported programs is the possibly contractionary impact of fiscal tightening on economic activity and output growth. Yet the empirical evidence does not suggest that fiscal consolidation in programs resulted in slower output growth; on the contrary, smaller budget deficits were associated with faster output growth—even controlling for the obvious endogeneity of the fiscal balance to growth—most likely because of confidence effects and crowding-in through lower interest rates and greater availability of banking system credit for the private sector.

Finally, IMF-supported programs incorporate structural measures to underpin macroeconomic adjustment, enhance economic efficiency, and reduce vulnerability to future crises. Returning to the taxonomy above, the evidence suggests some alignment between these types of structural measures and program goals. Thus programs in transition and low-income countries have a relatively larger proportion of economic efficiency enhancing reforms while

programs in capital account crises have a relatively larger share of measures directed at reducing vulnerabilities, especially in the financial sector. Assessing the impact of individual measures on program goals is difficult, not least because structural measures are difficult to quantify. Nonetheless, there is a statistically significant association between fiscal adjustment being achieved and the number of structural fiscal measures in the program, and between higher output growth and the number of efficiency enhancing reforms.

Overall, the results suggest broad alignment between program goals and various macroeconomic policies and structural reforms. By the same token, this also means that policy slippages are reflected in program targets being missed.

* * *

While the papers in this volume cover a great deal of material, they are not, of course, intended to be the last word on program design. Indeed, there is a substantial agenda of analytical follow-up work already under way examining more closely the design of IMF-supported programs in low-income countries, including on how sound macroeconomic policies and sustained growth may be fostered while also tackling the sustainability of external debt dynamics. For programs in middle-income countries, analysis is focusing on how the catalytic response of financial markets may be enhanced—especially to help *prevent* crises by a sufficiently vigorous policy response coupled with IMF financing at times of heightened vulnerability.

Nevertheless, it is worth asking how program design might change as a result of the present study. Three aspects come to mind. First, program design is likely to be much more clearly defined by considerations of medium-term debt dynamics than it was in the past, when programs typically focused on reestablishing viability of the *flow* balance of payments—often at the cost of paying insufficient attention to worsening debt dynamics. Second, in part to improve assessments of public and external debt sustainability, programs will be underpinned by better analytical work to model medium-term output growth and, in emerging market countries, to better understand the nexus of the financial, public, and external sectors in driving capital flows and crisis dynamics. Third, the findings in these papers may influence the choice and use of specific policy instruments, including greater scrutiny of the consistency of the exchange rate regime with program objectives and other macroeconomic policies, the need to sterilize large donor or capital inflows in the monetary program, greater emphasis on sus-

taining fiscal adjustment efforts and the need to design the fiscal program accordingly, and sharper alignment of structural measures with program objectives.

These would not be revolutionary changes—indeed, the findings in these papers suggest that funda-

mental rethinking about program design is neither needed nor would be appropriate—rather, they represent shifts in emphasis. Still, if undertaken, they would contribute to better designed, better implemented, and ultimately more successful IMF-supported programs.