

INTERNATIONAL MONETARY FUND

Fund-Supported Programs—Objectives and Outcomes

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I. INTRODUCTION

1. During the course of the 2000–02 Conditionality Review, Executive Directors requested that the next review address broader issues of the design of Fund-supported programs.¹ Responding to these requests, this paper examines whether recent Fund-supported programs have been successful in meeting their objectives, including an appropriate balance between adjustment and financing. Two companion papers consider the analytical underpinnings of program design, and the role of specific macroeconomic and structural policies. These background papers will form the basis of an overview paper to be discussed by the Executive Board as part of the 2004 Conditionality Review.²

2. This paper reviews experience with programs supported by the General Resources Account (GRA)—stand-by arrangements (SBA) and Extended Fund Facility (EFF) arrangements—as well as those supported by concessional facilities—the Enhanced Structural Adjustment Facility (ESAF) and the Poverty Reduction and Growth Facility (PRGF)—over the period 1995–2003.³ It differs from earlier studies in three important respects.⁴ First, it takes explicit account of the evolution of the design and purpose of Fund-supported programs over the past decade. Second, it seeks new insights by comparing programs supported by GRA resources and those supported by concessional facilities; as elaborated below, there are important differences particularly as regards external adjustment and output growth. Third, it goes beyond traditional flow balance of payments measures of

¹ These requests were repeated in the context of the discussion of the report of the task force to address the recommendations of the Independent Evaluation Office (IEO) report on Prolonged Use of Fund Resources (April 2003): “Directors looked forward to further work by the staff on the relationship between external financing, adjustment, and sustainability; on the analytical framework for program design; on the tradeoffs between macroeconomic and structural policies; and on the parameters for assessing program success.” There have also been calls from the Board to review program design in capital account crisis cases, e.g. in the summing up of the Board discussion on the IEO report on capital crises (May 2003).

² The 2004 Conditionality Review will also incorporate a review of the 2002 Conditionality Guidelines.

³ To include both program and post-program experience, the sample covers programs approved over the period 1995–2000; see Appendix I. During this period, the Fund’s engagement with low-income countries underwent important changes with the shift from Enhanced Structural Adjustment Facility (ESAF) to the Poverty Reduction and Growth Facility (PRGF). The findings for low-income countries in this paper pertain primarily to ESAF-Supported programs.

⁴ See Schadler et al. (1994) which covered a sample of stand-by and extended arrangements approved between 1988–1991.

external adjustment to consider the impact of the adjustment effort on external debt dynamics.

3. Like previous studies, this paper has to grapple with unknowable counterfactuals—that is, how would the economy have performed (in terms of external adjustment and other macroeconomic objectives) in the absence of Fund support. As discussed below, it is difficult to solve the identification problem convincingly, particularly for low-income countries that may undertake successive Fund-supported programs. Accordingly, the approach taken in this paper is to examine performance under recent Fund-supported programs—and to try to understand the reasons behind it—rather than attempting the finer distinction of whether Fund support was responsible for the outcomes.

4. This paper begins (section II) by characterizing the nature and objectives of different types of Fund-supported programs. Individual differences aside, the paper finds that there are three main groups of programs. First, there is the traditional current account adjustment problem that gives rise to the “classical” Fund-supported program.⁵ Second, and more recently, are the so-called capital account crisis programs, where the abruptness and magnitude of the reversal of capital flows have pervasive consequences for current account dynamics and for macroeconomic performance more generally. The third set comprises the early programs in transition economies and programs in low-income countries—the latter supported by PRGF arrangements since 2000 (and by ESAF arrangements before then). The transition and low-income countries obviously differ in many respects. Nevertheless, they share a common logic in that the structural transformation of the economy and the promotion of growth and of poverty reduction are key objectives, with the need to maintain external viability acting as an overarching constraint. Indeed, some measures adopted—for instance, liberalizing import restrictions—may themselves widen the current account deficit but also contribute to removing economic distortions and placing the economy on a more sustainable path for growth and the balance of payments.

5. The paper reveals a number of novel results, especially in relation to the differences in economic adjustment between GRA- and PRGF-supported programs. In particular, section III casts the discussion of external adjustment in terms of medium-term debt sustainability rather than just the flow balance of payments. A useful metric in this regard is the external debt-stabilizing current account balance. In GRA-supported programs, consistent with considerations of debt sustainability, there is a positive relationship between the external adjustment targeted (and achieved) and the initial level of external debt. At the same time, these programs are characterized by current account improvements that, on average, are

⁵ As discussed below, among GRA-supported programs there is a subset where the primary focus is on the endorsement of a policy package, since Fund financing is not envisaged. In some of these cases, the thrust of the program is to reduce domestic interest rates and retain access to external markets rather than external adjustment.

sharper than anticipated for the program's first year; in about one-quarter of the cases, the current account balance exceeds the debt-stabilizing balance despite a relatively low initial level of external debt. Moreover, the sharp adjustment in the first year of the program is subsequently reversed, so that the cumulative difference between the actual and programmed current account position largely disappears over a three-year period. In addition to rapid adjustment in the current account balance, these economies experienced a V-shaped growth pattern. These patterns are particularly pronounced in capital account crises, where the external adjustment and output contraction were typically much more than envisaged under the program because of the larger capital outflows than expected.

6. Fund resources typically finance the replenishment and accumulation of gross reserves, which, on average, increase by more than the financing provided by the Fund. By adding to reserves and helping to restore confidence, such financing nevertheless contributes to limiting vulnerabilities. Fund financing is small in relation to the member's total financing requirement—typically about 10 percent—which is expected to be financed by flows from the private and official sectors. As noted above, however, in some cases, this projected financing does not materialize and a sharper than programmed adjustment of the current account balance results. Nevertheless, perhaps because the Fund will only support the authorities' economic program if it considers the policies to be appropriate, countries undertaking external adjustment in the context of a Fund-supported program grow about 1 percentage point per year faster than countries making the same current account adjustment without a Fund-supported program; these results are subject to a number of econometric qualifications, including possible selection bias.

7. The typical low-income program displays a strikingly different pattern to the GRA-supported program, with relatively little current account adjustment but an increase in growth during the program, partly attributable to improved macroeconomic stability. In contrast to GRA-supported programs, in the low-income countries, current account deficits were, on average, larger than projected—a divergence that increases with the time horizon. The positive relationship between external adjustment and initial external debt ratios characteristic of the GRA sample is not apparent for the low-income countries and the actual and programmed current account deficits exceed those consistent with stabilizing the initial external debt ratios. The implied increases in external debt ratios, however, were largely offset by additional debt relief, moderating the debt build-up.

8. Beyond external viability, Fund-supported programs typically target a number of other macroeconomic objectives such as reducing inflation and raising growth, which are considered in section IV. While the counterfactual is difficult to establish, the evidence suggests that, under their Fund-supported programs, members have been largely successful in lowering inflation and maintaining price stability thereafter. GRA-supported programs have generally succeeded in restoring real GDP growth to pre-crisis levels but, consistent with the classic adjustment paradigm, are not associated with higher long-run growth rates. By contrast, a majority of members with PRGF-supported programs in the 1990s have seen a marked improvement in their real GDP growth performance.

9. The plan of this paper is as follows. Section II sets the stage by outlining the main objectives and characteristics of the different types of Fund-supported programs. Section III examines the record on external adjustment in programs supported by GRA and concessional facilities. Section IV turns to other macroeconomic objectives, notably inflation and output growth. Section V presents the paper's conclusions.

II. INITIAL CONDITIONS AND THE SETTING OF FUND-SUPPORTED PROGRAMS

A. Introduction

10. In the archetypical Fund-supported program, a member faces external financing difficulties and external and internal imbalances, requiring stabilization measures. Under a fixed exchange rate regime, balance of payments difficulties reflect either an overheating of the economy that could also be associated with a loss of competitiveness, or an external shock—such as a deterioration in terms of trade or reduced net capital inflows. Correspondingly, under a floating regime, the external financing difficulties are manifested in a persistent depreciation of the real exchange rate. Either way, the problems stemming from current account imbalances can be exacerbated by net capital outflows.

11. Facing external imbalances, the member must either adjust, obtain financing from official sources, or restructure its external obligations. In the textbook case of a purely temporary disequilibrium, financing would be appropriate, while a permanent shock requires adjustment. More generally, some external adjustment and financing is required. The key objective in traditional Fund-supported programs, therefore, is to reduce the current account deficit to a sustainable level and to reconstitute reserves over a time frame that complements the financing that the Fund is providing. Over the longer run, as confidence returns, capital inflows resume and the country is again able to finance its now sustainable current account deficit and replenish its international reserves.

12. Thus economic policies are intended to bring about the required external adjustment, while Fund financial support is intended to ease this adjustment by spreading it out over time, and to help reconstitute international reserves. In principle, the requisite external adjustment can be achieved either by raising aggregate supply or by reducing domestic demand. In practice, given lags in the supply response, the brunt of the adjustment falls on demand management with Fund financing provided to ease the adjustment burden while the country implements expenditure-switching and expenditure-reducing policies. Since a given adjustment can be achieved through different combinations of macroeconomic policies, making good policy choices naturally involves picking those alternatives that raise the likelihood of restoring external viability in the least costly way—avoiding “measures destructive of national or international prosperity” in the parlance of the Articles of Agreement—taking account of economic relationships and social and political realities.

13. The last comprehensive review of Fund-supported programs found that most programs were characterized by a classic external adjustment paradigm in which a member

requests support from the Fund to deal with a continuing loss of reserves associated with current account imbalances, often in the context of poor macroeconomic performance such as high inflation or low growth (Schadler et al., (1994)). The 1994 study documented an improvement in the country's external position—its current account balance (new users) and its net international reserves, but the effects on inflation and growth were much less favorable.⁶ In cases where the balance of payments problem was precipitated by overheating of the economy, the country may have had rapid growth (and high inflation) prior to the emergence of economic problems, but the subsequent slowdown of capital inflows and financing, together with tightened macroeconomic policies resulted in a temporary slowing in economic activity. In other cases, the country's growth performance in the run-up to the authorities' adjustment program may have been weak, but their program was associated only with growth returning to its historical average rather than with a marked increase in the long-term growth rate. In either case, despite generally tighter monetary policy (relative to the pre-program period), a discrete devaluation gave an additional fillip to inflation. The results of a study on ESAF-supported programs approved between 1986–95 are similar, except for slightly greater emphasis on growth outcomes—see Box 1 for a summary of the conclusions of these reports.

B. Traditional Fund-Supported Adjustment Programs

14. The behavior of key macroeconomic variables in programs supported by the General Resources Account (GRA)—Stand-by (SBA) and Extended Fund Facility (EFF) arrangements excluding those with transition economies—show striking similarities to the predictions of the traditional model.⁷ Figure 1 plots the key economic indicators.⁸ In particular, growth is V-shaped, falling during the program period, but recovering by the third year after the program.⁹ Inflation, which is usually on a downward trajectory prior to the program, increases slightly in the program year. The key characteristic, however, is the country's external financing difficulties which are manifested in the switch from an inflow of

⁶ As discussed below, this is less true of more recent programs.

⁷ As discussed below, the pattern for capital account crises is also similar in some respects, though it differs markedly for the behavior of fiscal policy.

⁸ For Figures 1–5, only the most recent program is taken in cases of multiple arrangements. To minimize the effect of outliers, all variables are mapped to lie in the interval (-100,100) by the transformation $100\left(\frac{z}{100+z}\right), z > 0; 100\left(\frac{z}{100-z}\right), z < 0$ where z is the annual growth rate or percentage of GDP, as applicable.

⁹ The average duration of stand-by arrangements, which constitute 75 percent of the sample of stand-by and EFF programs, is 15 months.

Box 1. Conclusions from Previous Reviews of Fund-Supported Programs

Over the last decade, two studies have been undertaken to examine experiences in Fund-supported programs: a study of all stand-by and extended arrangements approved during the period 1988-91 (Schadler et al., 1994) and a review of the Extended Structural Adjustment Facility over the period 1986-96 (Bredenkamp et al., 1999).

The study of experiences under stand-by and extended arrangements notes an improvement in the external position of countries requesting Fund support but more mixed results in terms of other macroeconomic objectives. Specifically, the current account deficit fell during the program for all countries except for those with several previous arrangements. Moreover, about a third of the program countries benefited from large increases in capital flows and reserves rose from slightly over 2 months of imports in the year prior to a program to over 3½ months by the end of the program for all categories. In contrast, the record on inflation and growth was more mixed. Countries entering their arrangements with annual inflation rates above 10 percent saw significant reductions while other saw little change (or even small increases) in inflation rates. With regard to growth, countries with one previous arrangement bounced back rapidly during the program period, whereas for new users and for countries with several previous arrangements, the growth profile was comparable prior to and by the end of the program period, with a temporary dip at the beginning of the program.

Synopsis of Quantitative Findings for Stand-by and EFF Arrangements

	t-3	t-2	t-1	t 1/	t+1	t+2
Current account deficit (in percent of exports)						
New users			>50%	30-35%	30-35%	30-35%
Repeat users			35-40%	40-45%	40-45%	40-45%
Reserve cover (in months of imports)						
New users			2.0-2.5	2.5-3.0	3.0-3.5	3.5-4.0
Repeat users			2.0-2.5	2.0-2.5	2.5-3.0	4.0-4.5
Growth (in percent)						
New users	3.0	2.0	0.0	-2.0	3.0	4.0
More than 1 previous arrangement	2.0	3.0	2.0	2.5	3.0	2.5
One previous arrangement	-3.5	-2.0	4.5	4.0	4.5	
Inflation (annual; in percent)						
Countries with initial inflation between 10 and 50%			23	30	2/	17
Countries with initial inflation <10%			5	7	2/	7

1/ t refers to the first program year

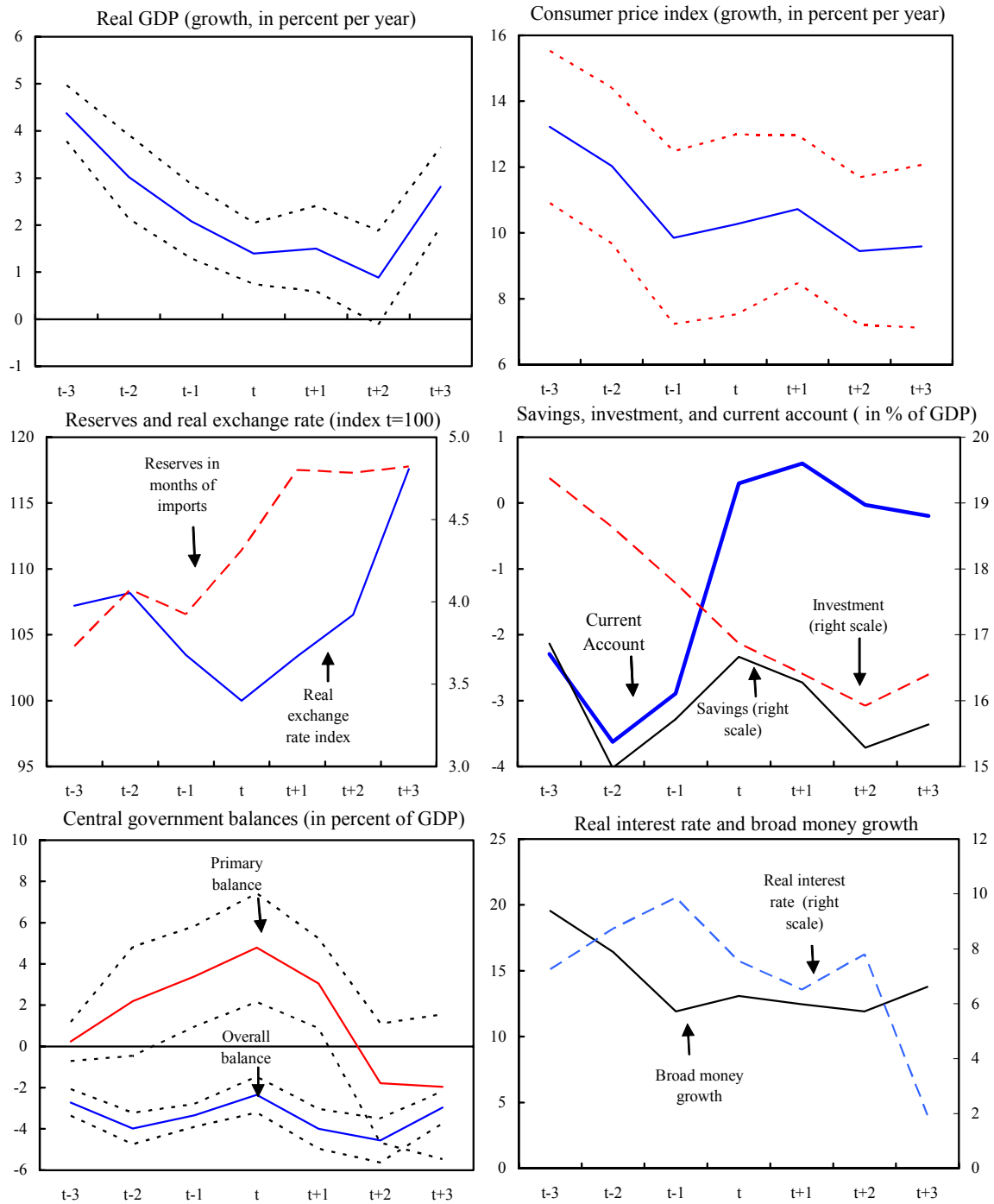
2/ target of Fund-supported program

The study of ESAF arrangements showed that the gap in per capita output growth between ESAF countries and other developing countries was eliminated by the mid-1990s, and that half of this improvement was associated with improved macroeconomic and structural policies. However, the study also documents a mixed record in attaining low inflation, even though the negative association between growth and inflation is robust.

Synopsis of Quantitative Findings for ESAF Arrangements

	<u>1981-85</u>	<u>1985-90</u>	<u>1991-95</u>	<u>1995</u>		
Per capita growth						
ESAF excluding transition	-1.4	0.4	0.3	1.5		
Non-ESAF dev. Countries	0.3	1.0	1.0	1.4		
	<u>t-3</u>	<u>t-2</u>	<u>t-1</u>	<u>t</u>	<u>t+1</u>	<u>t+2</u>
Inflation						
Low initial inflation	11.0	9.0	6.2	10.2	8.0	7.2
Intermediate initial inflation	15.8	16.2	20.2	16.3	15.1	11.7
High initial inflation	80.0	126.0	170.0	75.0	26.0	25.0

Figure 1. Macroeconomic Performance under GRA-Supported Programs, 1995-2003
(excluding transition economies) *



Sources: International Monetary Fund, *World Economic Outlook*; and IMF staff estimates.

* Standard error bands for real GDP growth, inflation, and government balances are given by the dotted lines.

capital averaging 2 percent of GDP over the three years preceding the program to a net outflow of over 1 percent of GDP in the program year (before recovering to an inflow of about 1 percent of GDP two years later). The current account deficit narrows from 3 percent of GDP on average over the three years preceding the program to about zero in the program year. Adjustment of the fiscal balance, which improves by about 1 percent of GDP over the same period, explains less than half of the external adjustment, the remainder coming from the private sector.¹⁰ The current account improvement reflects both a decline in investment and a rise in domestic saving during the program period, but over a three-year horizon is driven entirely by a decline in investment with saving returning to its historical average.¹¹ Foreign exchange reserves improve steadily once program implementation begins and this improvement is maintained.

15. Of the 25 arrangements shown in Figure 1, nine arrangements were treated as precautionary (36 percent). With the exception of real GDP growth—which rises during the program period—the behavior of other economic variables among members that had precautionary arrangements is similar to those for arrangements where the member made a purchase.¹² In particular, both are characterized by sharp improvements in the fiscal and current account balances during the program and a corresponding build-up in reserves (Figure 2). Over the longer term, the main difference between the two types of arrangements is that the savings ratio rises among precautionary programs but remains flat in all other GRA-supported programs. These similarities between precautionary and non-precautionary arrangements indicates that a common standard has been applied, but also suggests that Fund financing had little direct impact on current account adjustment where the member drew on Fund's resources.

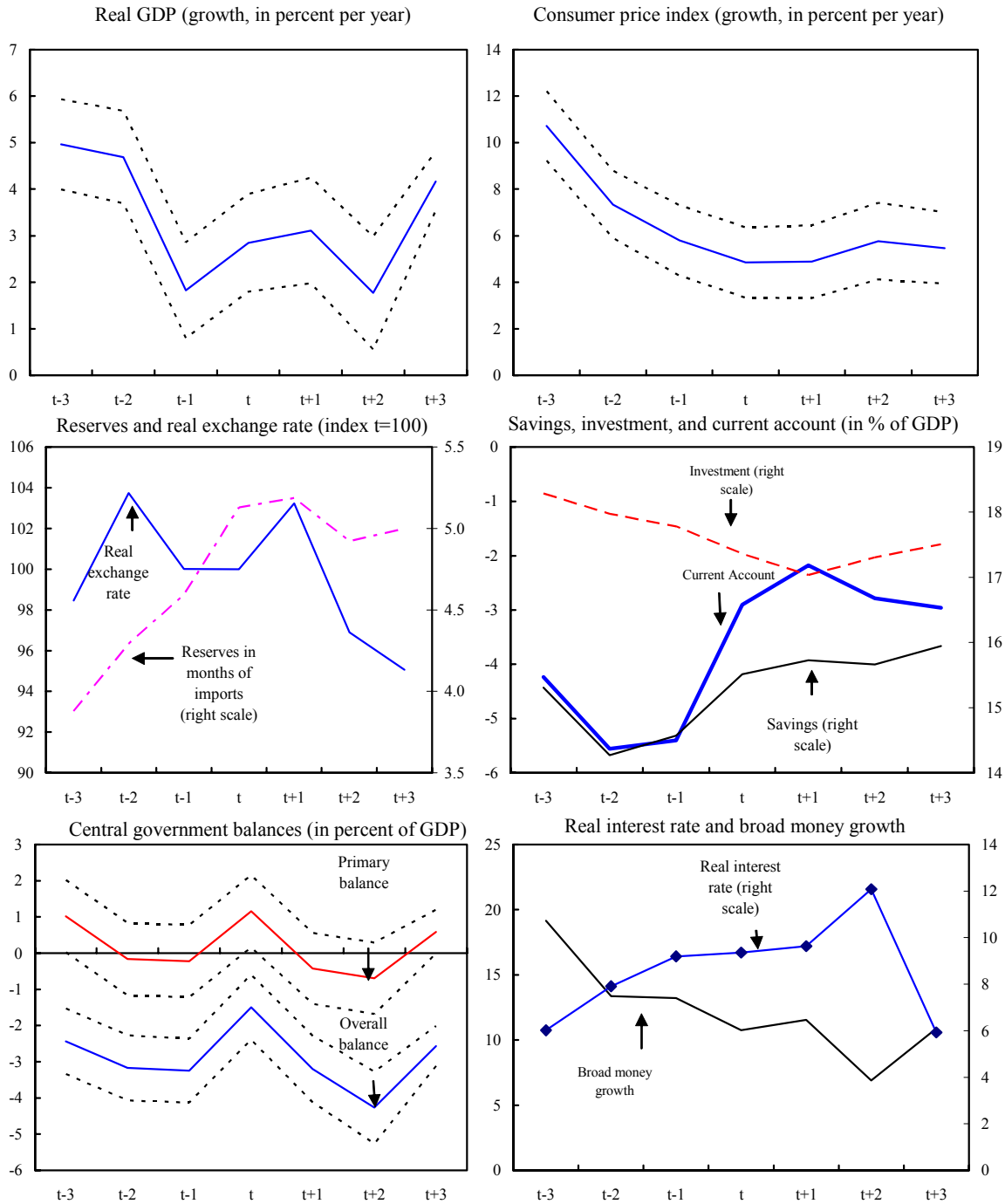
16. Among the GRA sample, there are also programs whose primary focus is enhancing the credibility of macroeconomic policies rather than undertaking external adjustment—a group that is not as clearly defined as, but partly overlaps, the sample of precautionary arrangements considered in Figure 2. Members may request such an arrangement because they have achieved macroeconomic stability but still have a large structural reform agenda

¹⁰ The Independent Evaluation Office study of Fiscal Adjustment in Fund-Supported Programs finds that most of the fiscal adjustment takes place in the first year of the program.

¹¹ Movements in the real exchange rate are too small to have contributed significantly to the external adjustment; while depreciating by about 5 percent in the program period it re-appreciated by about 5 percent over the subsequent two years.

¹² A precautionary arrangement is one under which the authorities indicate that they do not intend to make a purchase. It is not legally different from a non-precautionary arrangement since the member retains the right to draw (provided that it has met the relevant conditionality).

Figure 2. Macroeconomic Performance under GRA-Supported Programs with Precautionary Arrangements, 1995-2003*



Sources: International Monetary Fund, *World Economic Outlook*; and IMF staff estimates.

* Standard error bands for real GDP growth, inflation, and government balances are given by the dotted lines.

(for instance, some of the later programs in Estonia or Latvia); to reassure markets during election cycles or periods of political uncertainty (Peru, 1999); or because they are trying to tackle a problem of high inflation or public debt sustainability (though they do not face acute balance of payments difficulties). Turkey's 1999 stand-by arrangement is an example of the latter case: with the current account barely in deficit and readily financeable through private capital flows, the primary role of the Fund-supported program was to enhance the credibility of monetary and fiscal policies, which was essential to reduce inflationary expectations and nominal and real interest rates. In Brazil's 2002 stand-by, the credibility of the authorities' commitment to generating the requisite primary surpluses was key to reducing spreads and to improving public debt dynamics.

C. Other Types of Programs

Capital Account Crises

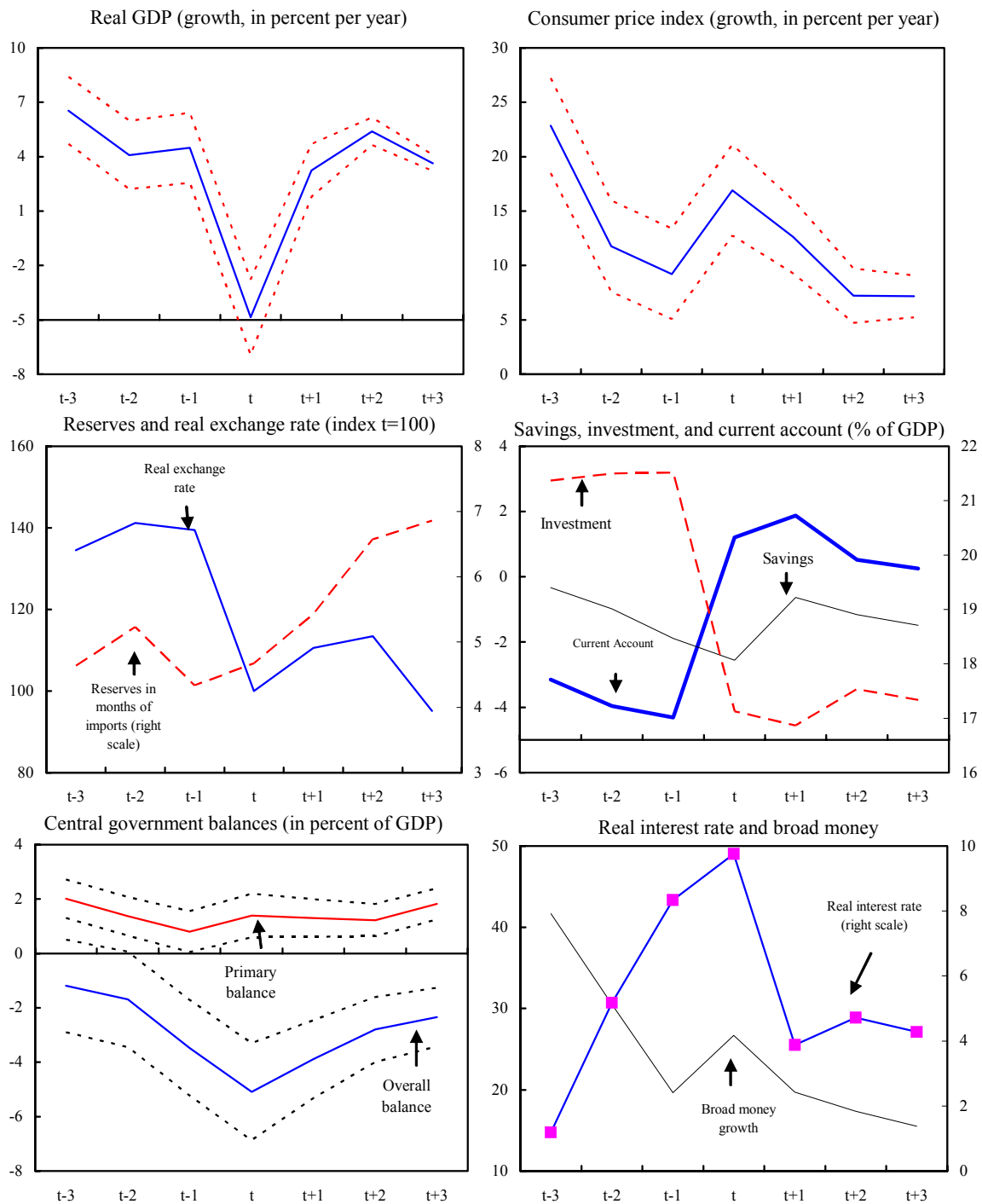
17. The behavior of the main economic variables in capital account crisis programs mimics that in the traditional case, though the patterns are more pronounced. Indeed, in these capital account crisis programs the abruptness and magnitude of the reversal of capital inflows had pervasive consequences for economic performance and policy formulation and implementation (Figure 3).¹³ A sharper dip in growth and spike in inflation is observed when the crisis erupts (which typically precedes the arrangement's approval date).¹⁴ Underlying these outcomes is the reversal from capital inflows to outflows. In the three years preceding the program, private capital inflows to these countries average over 5 percent of GDP, turning to a net outflow of more than 1 percent of GDP when the crisis erupts, before recovering to an inflow of 2 percent of GDP two years later. These movements force large swings in the current account balance which, on average, switches from a deficit of 4 percent of GDP to a surplus of 2 percent (and considerably more in some cases).

18. The key difference between capital account crises and more traditional adjustment programs lies in the orientation of policies. In traditional adjustment programs, monetary and fiscal policies are intended to bring about external adjustment; in a capital account crisis the emphasis often shifts to mitigating the external adjustment that the member is forced to

¹³ There is no definitive sample of "capital account crises"; IMF Occasional Paper 210 lists Mexico (1995), Argentina (1995), Thailand (1997), Korea (1997), Indonesia (1997), and Brazil (1998). To this list may be added the 2000 augmentation of the 1999 Turkey Stand-by, Argentina (2000), Brazil (2001, 2002). In the Figure, to illustrate the crisis dynamics more clearly, year "t" is aligned as follows: Argentina (1995), Brazil (1999), Indonesia (1998), Mexico (1995), Korea (1998), Thailand (1998), Turkey (2001).

¹⁴ In a few cases, e.g. Turkey, the member had a Fund arrangement in place when the crisis broke.

Figure 3. Macroeconomic Performance under Capital Account Crisis Countries, 1995-2003 *



Sources: International Monetary Fund, *World Economic Outlook*; and IMF staff estimates.

* Standard error bands for real GDP growth, inflation, and government balances are given by the dotted lines.

undertake in response to capital outflows. Whereas the fiscal balance improves by about 1 percent of GDP in traditional programs (Figure 1), in the capital account crisis programs the fiscal deficit widens by about 3 percent of GDP (Figure 3), though often this was not the orientation of policies in the original program (Box 2). Monetary policy is tightened, but the purpose of that tightening is less to dampen activity and promote adjustment than to attract capital flows through higher expected returns.

Transition and PRGF Programs

19. Another set of Fund-supported programs that differs from the traditional model consists of the GRA-supported programs with the transition economies and the PRGF-supported programs in low-income countries. As previously discussed, these countries form a diverse group, but examining these programs together is justified by their focus on structural reforms and efforts to promote growth and poverty reduction.

20. In the transition economies, although the need to maintain external viability acted as a constraint to some degree, the primary objective, at least initially, involved restoring macroeconomic stability following price liberalization and transforming centrally planned economies to those based on market principles. The growth picture differs considerably from the other GRA-supported programs mainly because of the abrupt transformation in the allocation of productive resources and of the disruption of existing trade linkages that the shift from central planning entailed (Figure 4). In terms of macroeconomic policies, on average, the fiscal deficit improved by 1 percentage point of GDP, while the current account deficit also improved. These policies and developments helped restrain money creation and lower inflation. Indeed, monetary policy was tightened, with a switch to positive real interest rates.

21. For programs supported by the PRGF, the primary objectives are its eponymous goals—raising growth and reducing poverty—rather than narrowing the current account deficit, though, again, the need to maintain external flow financing may act as a constraint.¹⁵ Not surprisingly, the most important difference between PRGF and more traditional adjustment programs lies in the behavior of output growth (Figure 5). Instead of the sharp V-shaped path in growth characteristic of traditional stand-by or capital account crisis programs, Fund-supported programs in low-income countries in the 1990s have been associated with an increase in the longer-term growth performance. Inflation is on a downward trajectory prior to the program and continues to decline over the program period. The fiscal deficit improves by 1 percentage point of GDP during the early stages of a program but this improvement reverses over time. In contrast, the current account deteriorates by

¹⁵ As noted above, the sample period covers primarily ESAF arrangements and preliminary experience with PRGF arrangements.

Box 2. Fiscal Adjustment in Capital Account Crises

Among the more controversial elements of program design in capital account crises is the stance of fiscal policy. In traditional adjustment programs, fiscal policy is typically tightened in order to reduce aggregate expenditure in relation to aggregate income and bring about the necessary external adjustment, especially when the public sector is seen as a major source of the external deficit.

Although the pre-crisis public sector deficits in the Asian crisis countries were not viewed as excessively large (with the possible exception of Thailand), the original program design in each of these countries called for at least some fiscal tightening. In particular, given capital outflows, there was a necessary improvement in the current account balance. Since the current account balance in its turn equals the excess of public and private saving over investment, the greater the public sector's share of the adjustment, the smaller the private share will need be.

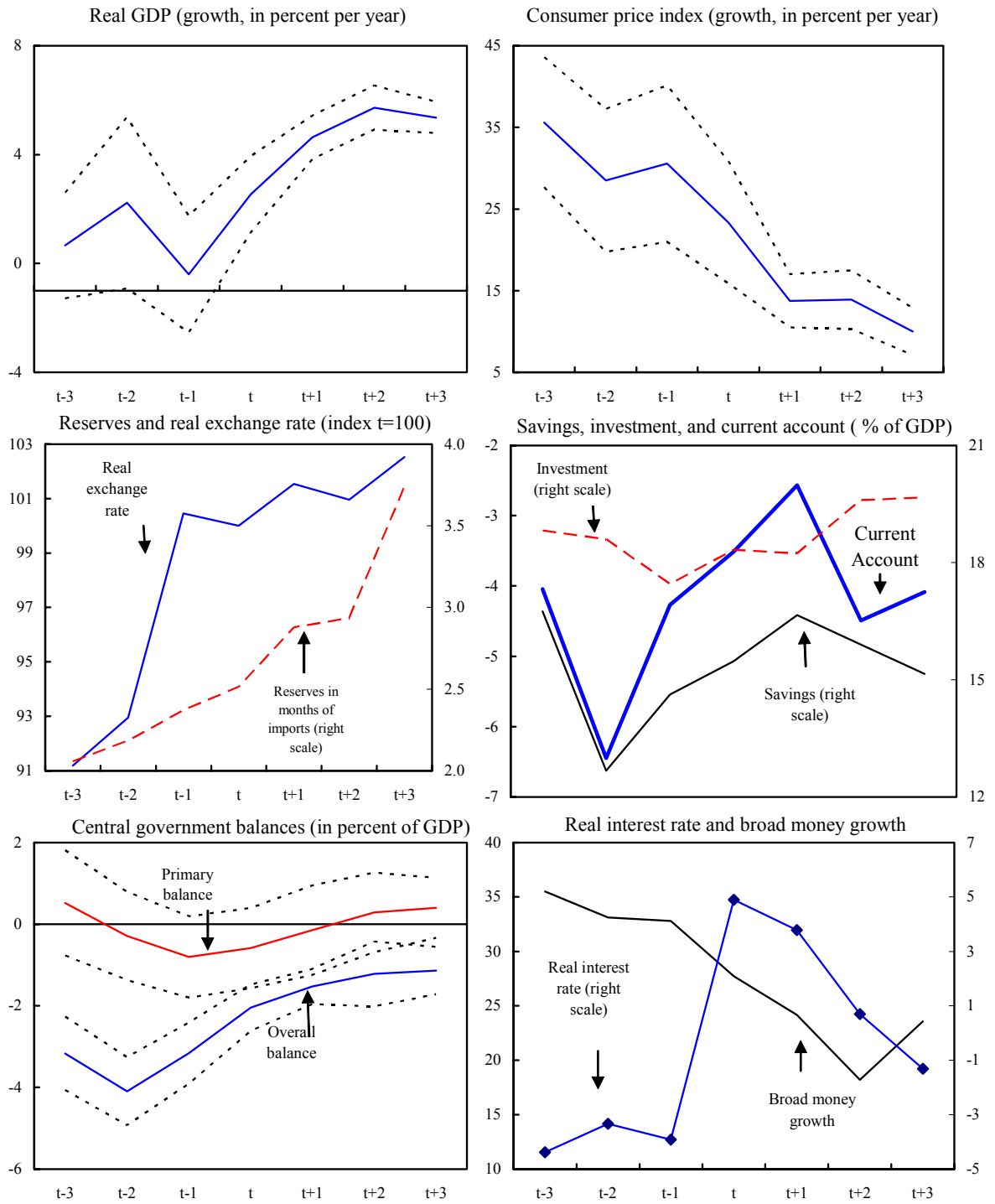
While this is arithmetically correct, whether it translates into a smaller *burden* of adjustment on the private sector—in the sense of a smaller decline in private consumption or investment—depends upon the nature of the shock. If the country has suffered a shock to aggregate supply, then output is exogenous with respect to government spending, and an improvement in public saving will imply a smaller required adjustment of private consumption. Conversely, if the country has suffered a shock to aggregate demand, then the higher public saving, while still implying a smaller required increase in private saving, will be associated with weaker activity and lower income and private consumption—that is, the smaller required increase in private saving will take place not through a smaller decline in private consumption, but through a decline in income and a decline in consumption (see *IMF-Supported Programs in Capital Account Crises* (OP 210) and *Fiscal Adjustment in IMF-Supported Programs* (Independent Evaluation Office, 2003) for a fuller discussion).

In the event, the programmed fiscal tightening in the Asian crisis countries was quickly reversed as it became apparent that the private sector was (over) adjusting and activity was collapsing. Fiscal policy in capital account crises has continued to be controversial, however. In particular, in the run-up to Argentina's 2002 crisis, there were numerous slippages of the primary and overall deficit relative to program targets that were countenanced by subsequent waivers. Thus, the Fund-supported programs initially targeted too much fiscal adjustment in the Asian capital account crises but targeted (or at least achieved) too little adjustment in the case of Argentina.

Programmed and Actual Fiscal Balances in Selected Capital Account Crisis Programs (in percent of GDP)

Country, year	Coverage	Previous year	Original program	First Review	Second Review	Third Review	Fourth Review	Outcome
Indonesia (FY98/99)	Central	0.8	1.0	-3.2	-8.5	-8.5	-8.5	-2.1
Korea (1998)	Central	-0.5	1.0	-0.7	-0.9	-3.3	-4.2	-3.9
Thailand (FY97/98)	Central	-1.1	1.1	1.0	-1.6	-2.4	-2.7	-2.6
Argentina (2001)	General	-2.5	-1.4	-2.0	-3.1	-3.2	-3.3	-6.3

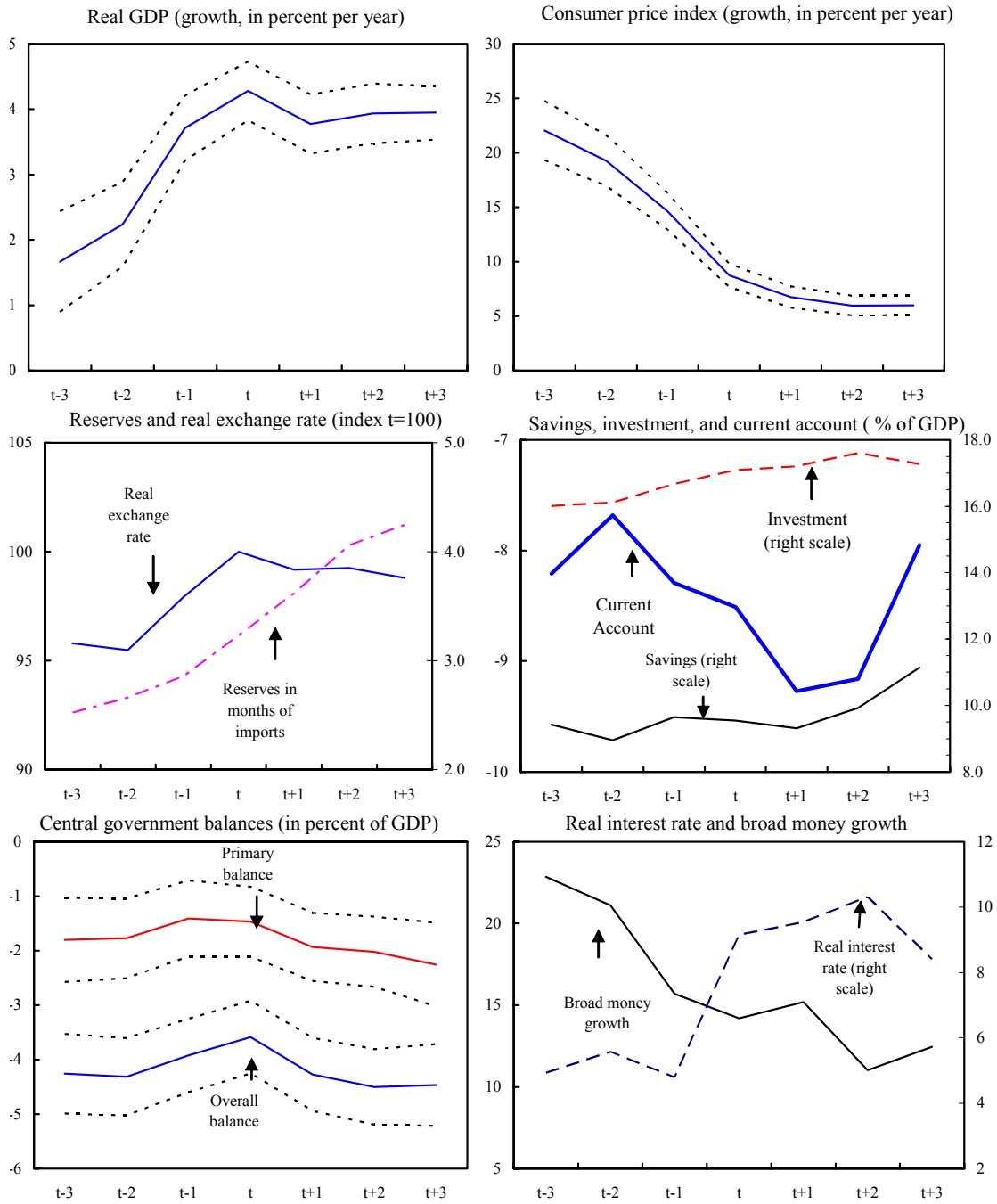
Figure 4. Macroeconomic Performance under Stand-by and Extended Fund Facility Programs in Transition Economies, 1995-2003 *



Sources: International Monetary Fund, *World Economic Outlook*; and IMF staff estimates.

* Standard error bands for real GDP growth, inflation, and government balances are given by the dotted lines.

Figure 5. Macroeconomic Performance under Enhanced Structural Adjustment and Poverty Reduction & Growth Facility Programs, 1995-2003 *



Sources: International Monetary Fund, *World Economic Outlook*; and IMF staff estimates.

* Standard error bands for real GDP growth, inflation, and government balances are given by the dotted lines.

about 1 percentage point of GDP in the first program year only to bounce back to its pre-program level (a deficit of 8 percent of GDP) by the third year of the program. While there is no secular improvement in the current account deficit over time, both domestic saving and investment rise by 1 percentage point of GDP, thereby enhancing future growth prospects. Indeed, the composition of inflows changes during Fund-supported programs with increased foreign direct investment. Moreover, a number of programs have included measures on liberalizing imports to foster future growth and put the balance of payments on a sustainable path, although these measures may adversely affect the current account balance in the short term.¹⁶ Real interest rates rise and money growth decelerates throughout the duration of these programs.

III. EXTERNAL VIABILITY

22. Fund resources are made available to member countries to correct balance of payments imbalances while easing the burden of adjustment (Box 3). An obvious starting point for judging program success is therefore the record on external adjustment—in particular, whether programs have achieved an appropriate mix between adjustment and financing. This naturally raises the question of the best metric for assessing external adjustment. A first measure is given by a comparison between program projections and outcomes, on grounds that in designing economic programs, the authorities would have targeted a current account balance that was appropriate to the country's circumstances. Going beyond this comparison, Section A discusses some of the shortcomings of traditional flow financing measures of adjustment and proposes medium-term debt sustainability as an alternative metric for assessing external adjustment.

23. Section B examines external adjustment in GRA-supported programs: how outcomes compared to projections, whether planned and actual adjustment was in line with considerations of medium-term debt sustainability, and did Fund support make a difference to the economic impact of the adjustment. Section C turns to the low-income countries where, especially for HIPC countries, the record is in marked contrast to the experience of GRA-supported countries.

A. Adjustment versus Financing

24. Since the use of Fund resources adds to the country's external obligations as well as to its assets, the Fund's financial support alters the time profile of the country's adjustment—defined as the change in the current account balance and NIR—with little direct effect on the extent of the external adjustment ultimately required. Nevertheless, by providing the country with more time to adjust and enhancing the credibility of policies, Fund support can ease the

¹⁶ More than half of ESAF/PRGF-supported programs over the period 1995–00 introduced trade-liberalization measures.

Box 3. Use of Fund Resources: Balance of Payments and Budget Gaps

A common question raised in the context of both GRA- and PRGF-supported programs concerns the relationship between the use of Fund resources and the balance of payments (BOP) and budget financing gap.¹ To get a handle on this question, the terms “balance of payments gap” and “budget financing gap” need to be defined.² Starting from the balance of payments

identity: $CA + KA = R$ or, since the capital account is simply net borrowing by the government (excluding the central bank) or the private sector: $CA + B^{*p} + B^{*g} = R$ where B^{*p} is net external borrowing by the private sector, including the publicly owned financial sector, B^{*g} is external borrowing by the non-financial public sector, and R is the net change in central bank reserves. Under a fixed exchange rate, a balance of payments gap exists if the country is losing reserves. The corresponding condition under a floating exchange rate is that the country *would* lose reserves if the exchange rate and output were to remain constant: $CA(\bar{y}, \bar{e}) + B^{*p} + B^{*g} = R < 0$.

Defining a “budget gap” is more tricky: clearly, it is more than just an overall budget deficit. The consolidated non-financial public sector can finance itself by borrowing domestically or borrowing from abroad: $B^G + B^{G*} = Def$. One definition of a budget financing gap, therefore, is that, at a reasonable interest rate, the domestic private sector’s desired level of saving is insufficient to meet the budget financing gap. Monetary policy is assumed geared toward its objectives for inflation and growth.

With these definitions, suppose that the public sector deficit increases by an amount ΔDef :

$(B^G + \Delta B^G) + (B^{G*} + \Delta B^{G*}) = Def + \Delta Def$. Under the definition of a budget financing gap, $\Delta B^G = 0$ so that the public sector can only finance itself through external borrowing: $\Delta B^{G*} = \Delta Def$. If, coincidentally, initially the country happens to have precisely the same balance of payments gap: $CA(\bar{y}, \bar{e}) + B^{*p} + B^{*g} = R = -\Delta Def$, then closing the budget financing gap through additional external borrowing is entirely consistent with closing the balance of payments gap. Next consider a case in which the country does *not* have an ex ante balance of payments gap:

$$CA(\bar{y}, \bar{e}) + B^{*p} + B^{*g} = R = 0.$$

Now additional external borrowing by the public sector will either add to reserves (so that net borrowing by the public sector is zero), or there must be a corresponding decrease in external borrowing by the private sector $\Delta B^{*p} = -\Delta def$ (or an increase in the current account deficit, though this is ruled out by the assumption that the exchange rate and macro policies remain constant). But if the private sector is decreasing its external borrowing, then it is increasing its savings by precisely the amount of the enlarged deficit. In other words, the domestic private sector *could*, with this increased saving, have financed the budget deficit, but the private sector may choose to hold this additional savings in a foreign asset (rather than using it to finance the government). This may occur when the expected rate of return on foreign assets exceeds the interest rate on public sector debt. In this case the inflow of Fund resources would be offset by capital flight—leaving the country’s net external borrowing unchanged. *It follows that external financing can be used (in the sense of effecting a real resource transfer) to close a budget gap only to the extent that there is a corresponding balance of payments gap.*

1/ This is the counterpart to the “international transfer problem” studied by Keynes in the context of reparations by Germany following World War I. As Keynes (1929) notes, there are two distinct problems: the *budgetary* problem and the *transfer* problem and it is only under very restrictive assumptions that the two become identical. See “The German Transfer Problem”, *Economic Journal*, Vol. XXXIX, No. 153 pp. 1-7.

2/ The Central Bank acts as the fiscal agent of the government and receives the Fund’s disbursements. By allowing a corresponding increase in central bank credit to the government, however, Fund resources can, in effect, be loaned to the government. The equivalence is not exact because, inter alia, there are different implications for exchange rate and credit risk associated with the Fund purchase.

burden of adjustment because sharp reductions of absorption are likely to be more economically and socially costly and additional time is needed for a positive supply response. This also implies, however, that there is an intertemporal trade-off: to the extent that short-run adjustment is limited and financing is sufficient, the country has more external debt and hence will require greater future adjustment—especially when it starts from a high level of external indebtedness.

25. The two extremes of this spectrum are best illustrated by the examples of Argentina (1995) and Korea (1997). Argentina in early 1995 faced massive outflows of bank deposits in the aftermath of the Tequila crisis, but was nevertheless able to avoid a devaluation, stabilize capital outflows, and by the end of the year, was even tapping the international capital markets. As a result, both the external adjustment and the decline in growth, while sizable, were significantly smaller than in many other capital account crises (e.g. Mexico or the Asian crisis countries). By all accounts, therefore, the Fund-supported program was highly successful in dealing with the immediate balance of payments problem. Yet, in retrospect, it is also clear that Argentina failed to tackle the underlying weaknesses of its public finances—and their inconsistency with the currency board arrangement—setting the stage for the growing public and external debt that culminated in late 2001 with an economic and political crisis.¹⁷ By contrast, Korea's (1997) stand-by arrangement met with very little initial success in stemming capital outflows or preventing a collapse of the exchange rate and of economic activity, and the economy only began to recover after macroeconomic policies were strengthened, coupled with a rollover agreement with creditors.¹⁸ Over the somewhat longer term, however, by enhancing the credibility of macroeconomic policies and instituting structural reforms, the Fund-supported program succeeded in restoring confidence and a return of private capital together with a replenishment of foreign exchange reserves. The experience of these countries suggests that neither extreme is optimal. Korea achieved rapid reduction in its external debt, but at the cost of a wrenching external adjustment and sharp contraction of output. In Argentina, although some of the short-run costs of adjustment were avoided, the insufficient adjustment was extremely disruptive to the economy in the long run.

26. This suggests that, beyond the flow financing constraint (i.e. whether the country stops losing reserves, and begins replenishing them), considerations of medium-term external debt sustainability may provide a useful benchmark for judging the appropriate current account adjustment. The basic principle is that, to the extent that a country is solvent, it

¹⁷ For a fuller discussion see “Lessons from the Crisis in Argentina” (SM/03/345); and “Report of the Evaluation of the Role of the IMF in Argentina, 1991-2001,” (Independent Evaluation Office, 2004).

¹⁸ For instance, during the last quarter of 1997, the real exchange rate depreciated by 35 percent, private capital outflows amounted to almost 25 percent of GDP and the current account balance improved by some 12 percent of GDP; as a result of the severe economic disruption, output growth fell by 12 percentage points.

should be able to obtain financing rather than having to adjust its current account balance in response to a temporary shock.¹⁹ Therefore, unless the country is constrained in the financing it is able to obtain, the current account balance should adjust by as much as is required to maintain solvency—with two provisos. First, if the country has already a high level of external debt, it would be appropriate to run a smaller current account deficit in order to reduce vulnerability to future balance of payments problems. Second, relatedly, even if the external debt ratio is low, the authorities may wish to run a current account balance that permits foreign exchange reserves to be replenished and reduces vulnerability to liquidity crises.

27. Of course the mix between financing and adjustment is not always under the direct control of the authorities, depending, *inter alia*, on the nature of external capital flows on which the country relies. For low-income, PRGF-supported countries, which rely mainly on official financing, a challenge in determining the appropriate path of adjustment is to deal with the uncertainty regarding the magnitude and timing of official aid.²⁰ For countries that rely on private capital flows but that, in stock terms, have relatively small exposure, there may be uncertainty about when capital inflows will resume but only limited risk of massive outflows (though the challenge of tailoring specific macroeconomic policies to induce the desired degree of adjustment remains).

28. If a capital account crisis erupts, the authorities may have little control over the pace of external adjustment undertaken because of liquidity constraints on external financing. Not only is the availability of official financing (and use of gross international reserves) likely to fall well short of potential capital outflows, official financing could simply facilitate the faster exit of private capital, especially if a sufficient policy response is lacking. Another possibility is to use capital controls or debt standstills to limit the outflows. However, the use of direct controls on capital outflows is highly controversial, may be technically difficult to implement and enforce, and is potentially counter-productive—spurring further outflows as

¹⁹ Fund financing cannot solve a “solvency” problem (whereby the country is unable to generate the required surpluses to satisfy the intertemporal budget constraint) since it effectively replaces one source of financing (the private sector) with another (the official sector). There are two possible exceptions. First, to the extent that Fund resources are made available at a cost below the marginal cost of market borrowing, the present value of the debt is correspondingly lower; for plausible amounts of Fund financing, however, this effect is likely to be negligible. Second, the Fund’s support of a member’s adjustment program could, via confidence effects, lower the market cost of its borrowing and help spur growth, making an otherwise unmanageable level of debt more sustainable.

²⁰ See *Debt Sustainability in Low-income Countries (SM/04/27)* and Bulíř and Hamann (2003) and Bulíř and Lane (2002).

well as delaying the country's return to the capital markets (Box 4).²¹ In these circumstances, the authorities must rely on trying to restore confidence through the macroeconomic and structural policies they adopt. For the purposes of program design, the usual—if unsatisfactory—practice is that the magnitude of adjustment becomes the residual, given available official financing and expected capital outflows.

B. External Adjustment in GRA-supported Programs

29. The foregoing discussion points to three ways in which Fund support may help ease external adjustment. First, for a given net flow of private capital, an arithmetical correspondence exists between external adjustment (or the gross financing requirement) and disbursements of Fund resources. Second, in combination with the policy commitments of the authorities, Fund support may induce a positive response, or “catalytic effect” such that private capital inflows resume or at least further outflows are stemmed. Third, by inducing better policy choices, a program may help achieve a given external adjustment—i.e. improvement in the current account—at lower cost in terms of output contraction or real exchange rate depreciation.

Use of Fund Resources

30. Conceptually, it is useful to consider first the effects of Fund disbursements on external adjustment abstracting from any induced effects on other resource flows, and then take up the question of catalytic effects on flows separately. In this connection, it is noteworthy that on average, Fund disbursements cover about 12 percent of the gross external financing gap in GRA-supported programs (Table 1). A key question in designing an adjustment strategy is the targeted level of gross (net) international reserves coupled with the envisaged change in the current account balance. Fund-supported programs set targets for gross international reserves, which are back-stopped by floors for net international reserves (NIR).²² Expected net capital flows need to be allocated between these two objectives. However, the magnitude of flows may themselves be affected by these targets. But judging the effect on other flows is extremely difficult. On the one hand, replenishing reserves may give confidence so that (once the exchange rate has been allowed to adjust) capital outflows are stemmed, while allowing Fund resources to be spent may simply encourage the private sector—domestic or foreign—to exit faster. Higher reserve levels also give the authorities additional breathing space should the economy or external flows respond more slowly than

²¹ A useful summary of the issues and work in this area may be found in “Private Sector Involvement in the Prevention and Resolution of Financial Crises—Report of the Managing Director to the International Monetary and Financial Committee (EBS/01/160, Rev. 1, 2001).

²² These floors are intended as safeguards or “tripwires” that indicate a possible need to reconsider program policies: they are not intended to delineate the baseline adjustment path.

Box 4. Capital Controls on Outflows in Crises¹

Capital controls have been used as a tool to address capital outflows during financial crises. The controls have taken a variety of forms, ranging from administrative or direct controls (outright prohibitions, or quantitative limits on, or approval procedures for cross-border flows for residents or nonresidents), to more market-based controls that attempt to discourage particular capital movements by making them more costly (including, explicit or implicit taxation of cross-border financial flows or dual or multiple exchange rates applicable to different types of international transactions). In many cases, controls on capital outflows have been applied in tandem with other policy measures, rather than in isolation, and in several cases were accompanied by other administrative measures, including exchange controls on transactions in domestic or foreign currency, controls on current international transactions, default on public and/or private external debt, or freezing of bank deposits.

Capital controls have been viewed as a tool to reconcile conflicting policy objectives and direct monetary policy toward domestic objectives while limiting pressure on the exchange rate. In crises, countries have typically imposed these controls to counter volatile speculative flows that undermine the stability of the exchange rate and deplete foreign exchange reserves, and help the authorities to buy time to implement adjustment measures and structural reforms. Controls have been imposed against the background of significant downward pressure on the exchange rate, sharply declining foreign exchange reserves, a sharp loss of access to international capital markets, and limited room to use interest rates to defend the currency reflecting concerns about their adverse impact on economic activity and balance sheets of the public and private sectors. Examples of countries that imposed such controls include Argentina (2001), Indonesia (2001), Malaysia (1998), Pakistan (1998), Russia (1998), Spain (1992), Thailand (1997), and Venezuela (1994). In several of them (Argentina, Pakistan, Russia), the controls were accompanied by more extensive measures, including restrictions on current account transactions, default on debt service obligations, and restrictions on deposit withdrawals.

The effectiveness of capital controls during crises has been a subject of controversy. There is yet no firm conclusion on their effectiveness, reflecting a number of factors, not least the challenge of constructing an appropriate counterfactual against which the controls can be evaluated and the difficulty of disentangling the impact of the controls from that of other factors (e.g., the accompanying measures or favorable external factors). Nevertheless, it is possible to make a number of observations on the basis of country experiences:

- Temporary controls may provide a temporary breathing space, but not a lasting protection if there are incentives for circumvention (e.g., attractive return differentials in the offshore markets and strong market expectations of exchange rate depreciation) and these are large relative to the expected costs of circumvention.
- The use of capital controls must be weighed against the possibility that their imposition may itself undermine confidence and engender capital outflows. If they are used, they must be comprehensive (so as to limit circumvention), implemented by authorities with strong enforcement capacity (to detect and close loopholes), and accompanied by policy adjustments and reforms to restore macroeconomic stability. Over time, the authorities should do their utmost to reduce the need for these controls, and hence, reduce incentives to circumvent them.
- However, comprehensive controls are more distortionary, interfering with desirable transactions (such as foreign direct investment, long-term portfolio flows, and trade-related financial transactions), and strong enforcement capacity entails nontrivial administrative costs, particularly when measures have to be broadened to close potential loopholes for circumvention.
- Controls may give rise to negative market perceptions and damage countries' creditworthiness, thereby making it more difficult and costly to re-access international markets.

1/ The box draws on Ariyoshi (2000), IMF Occasional Paper 190, and Zelmer(2003), "Country Experiences with Exchange and Capital Controls in Crisis Situations," MFD Technical Note; Capital Account Liberalization and Financial Sector Stability - Analytical and Policy Issues (SM/01/186, supplement 1); Country Experiences with the Use and Liberalization of Capital Controls, SM/99/214; Countries' Experiences with the Use of Controls on Capital Movements and Issues in Their Orderly Liberalization, SM/99/60; and "Controls on Capital Flows: Experience with Quantitative Measures and Capital Flow Taxation" background paper for International Capital Markets, Developments, Prospects and Policy Issues, International Monetary Fund, August 1995.

Table 1. Share of Fund Financing and NIR in Fund-Supported Programs

	Total	Share of Fund financing (in percent) 1/	Programmed Change in NIR (in percent of GDP)		Number of Cases with Programmed Decrease in NIR	Proportion of Cases with Programmed Decrease in NIR
			Median	Mean		
GRA-supported programs	73	12.0	0.98	1.44	15	20.5
Non-transition economies	43	10.4	0.98	1.85	5	11.6
Non-precautionary	25	12.0	1.05	1.76	3	12.0
Precautionary	18	8.1	0.98	1.97	2	11.1
Transition economies	30	14.2	0.81	0.86	10	33.3
Non-precautionary	20	18.7	1.20	1.03	5	25.0
Precautionary	10	5.2	-0.02	0.52	5	50.0
PRGF-supported programs 2/	44	7.9	1.29	1.13	8	18.2
Non-transition economies	36	7.3	1.12	1.18	6	16.7
Transition economies	8	11.0	1.48	0.89	2	25.0

Sources: International Monetary Fund; *World Economic Outlook*, *MONA database*, and IMF staff estimates.

1/ In relation to the gross financing requirement

2/ Excluding CFA countries for the cases of programmed decrease in NIR because no NIR target was set.

expected. On the other hand, from the balance of payments identity, for a given level of other flows, disbursements of Fund resources that are added to reserves are also not available to moderate the current account adjustment. In any event, the Fund's financing contribution is not large.²³

31. Most Fund-supported programs targeted an increase in net international reserves (NIR).²⁴ Indeed, over the sample period, only in 12 percent of GRA-supported programs in

²³ Of course, Fund disbursements add to the country's foreign exchange liabilities and therefore require it to adjust eventually. These disbursements, however, help the country to avoid abrupt adjustment which would be disruptive to economic activity.

²⁴ While Fund disbursements raise gross international reserves (GIR), there is no change in NIR since assets and liabilities increase by the same amount. For the median program country, the Fund disburses about 1 percent of GDP (20 percent of the current account balance for the previous year) during the first year of a program, varying narrowly between 1 percent of GDP for "traditional" SBAs and EFFs (40 percent of the current account for the

(continued...)

non-transition countries was NIR programmed to decline during the first program year (Table 1), with a slightly smaller proportion for precautionary programs and a rather larger proportion for programs in transition economies.²⁵ For the median program country, the floor set on net international reserves required the central bank to accumulate NIR of about 1 percent of GDP during the first program year. This substantial planned accumulation of NIR indicates the importance that the authorities attach to reducing vulnerabilities through increasing reserves.²⁶

32. Establishing whether Fund support has a catalytic effect on capital flows—or, indeed, simply finances larger outflows—is difficult because the counterfactual is unknown. Indeed, the existing empirical literature shows mixed results on the extent to which Fund endorsement of a country’s macroeconomic strategy helps to mobilize private external financing.²⁷ In this study, we do not attempt to tackle this issue directly. Rather, a related but slightly different issue is explored—to what extent do Fund-supported programs accurately project capital flows. Program projections for the current account (or capital flows) are compared against outcomes. To the extent that outcomes are worse than projected—capital flows are smaller and the improvement in the current account balance is larger—the catalytic effect may not be as large as projected—though it is also possible that other developments—such as favorable terms of trade—are the source of the projection error in the current account balance. The difference between actual outcomes and projections of the current account balance are substantial in the first program year. In some cases, the authorities created an additional buffer against vulnerabilities through sizable increases in international reserves (see below).

previous year) and 1.2 percent of GDP (47 percent of the current account for the previous year) for capital account crisis countries.

²⁵ This may explain why, in Figure 2 above, the current account adjustment is so similar in precautionary and non-precautionary arrangements.

²⁶ In some cases the Fund has helped a country avoid a potentially costly default (Mexico, 1995).

²⁷ See Cottarelli and Curzio (2002) for a discussion. Killick, Malik, and Manuel (1992) and Bird and Rowlands (1997) find no empirical evidence for a catalytic effect of Fund support. In contrast, Marchesi (2001) finds that such support helps a country to reschedule its private debt obligations, while Mody and Saravia (2003) find that it raises the likelihood that a debtor country may issue a bond and reduces its spreads at the time of issuance. Mody et al. find that Fund-supported programs are effective in reducing bond spreads when the debt-to-GDP ratios are between 30-70 percent. They also find that, while precautionary programs have no independent effect on the probability of bond issuance, they are associated with significantly reduced spreads. Bordo, Mody and Oomes (2004) find that Fund-supported programs raise capital flows after one year in countries with poor initial conditions.

33. A scatter plot of projections versus outcomes of the current account balance in the first program year for GRA-supported programs (Figure 6, top panel) shows that almost 60 percent of observations lie above the 45° line. On average, the current account deficit narrowed by (a statistically significant) 1.3 percent of GDP more than originally projected (though the median difference is only 0.3 percent of GDP). Private capital flows fell short of expectations by a comparable amount (but by as much as 5 to 15 percentage points of GDP in some capital account crises). This first year projection error is subsequently reversed; over the three year period, the cumulative difference between the actual and projected current account deficits largely disappears (Figure 6, bottom panel). By contrast, precautionary programs saw the first year current account deficit narrow by 0.5 percent of GDP less than originally projected, over the three-year period, the deviation remained on average at about 0.5 percent of GDP.

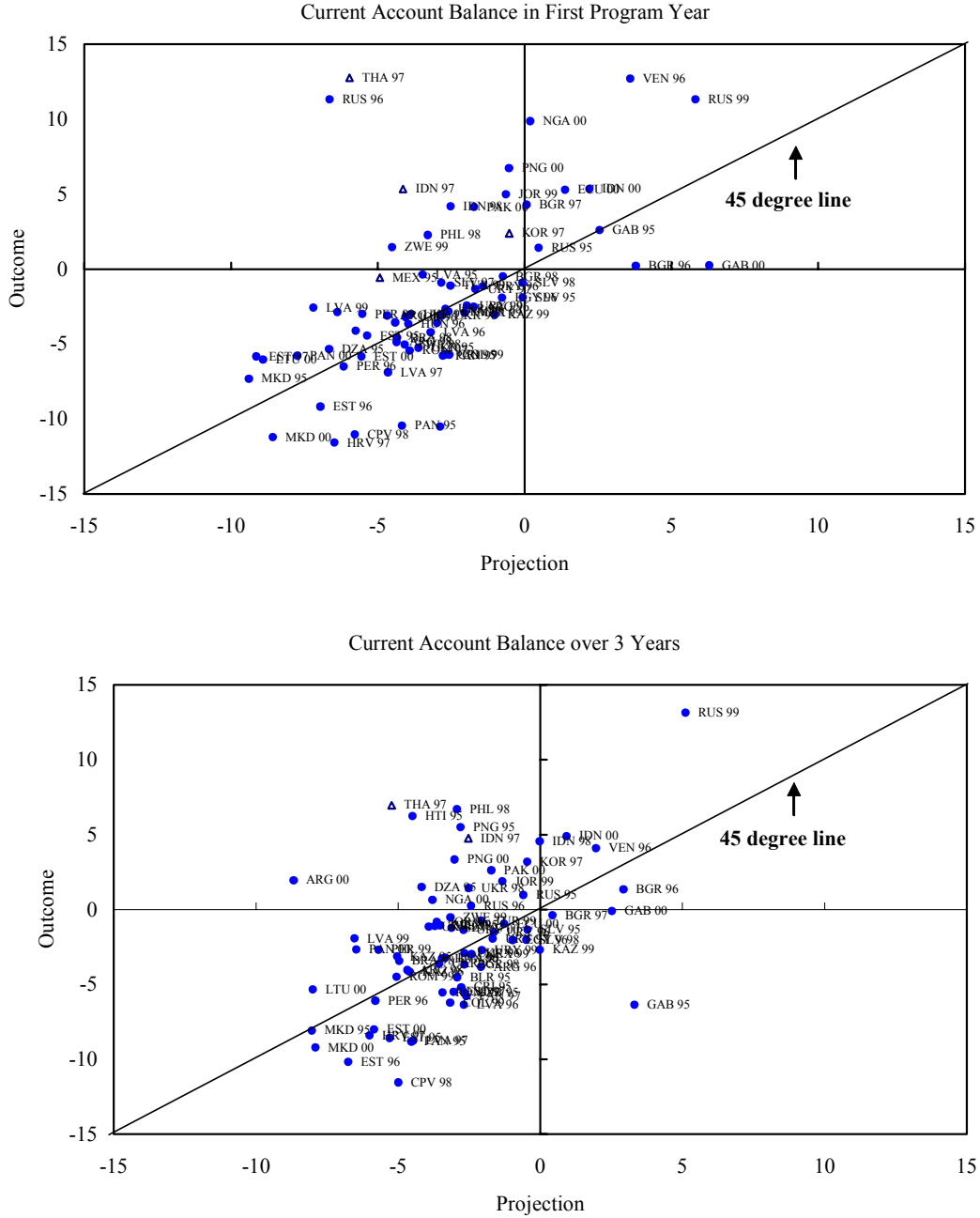
34. These smaller current account deficits than projected do not reflect unexpectedly tight fiscal policy; on the contrary, the fiscal balance was weaker than targeted by 0.6 percentage point of GDP (Figure 7, top panel). The weakness in the fiscal position, however, was more than offset by the shortfall in investment relative to its projection, with the difference averaging about 1.8 percentage point of GDP (Figure 7, bottom panel).²⁸

Adjustment in relation to medium-term debt sustainability

35. While the comparison between programmed and actual current account balances provides one measure of whether the proper mix between financing and adjustment was achieved, it necessarily relies on the program projection capturing the appropriate extent of adjustment. It is possible, however, that because sufficient financing was not available, the program projection incorporated greater adjustment than was considered economically desirable. It is therefore useful to complement this analysis by considering the current account balance against the metric of medium-term debt sustainability. Although a full assessment of debt sustainability is beyond the scope of this paper, a useful benchmark is the debt-stabilizing balance. For countries starting with high levels of external debt, a larger balance (than the debt-stabilizing balance) would be called for in order to lower the debt ratio and reduce future vulnerability, although the proper pace—and thus the appropriate current account balance—is unclear. Stabilizing the debt ratio should suffice for countries with

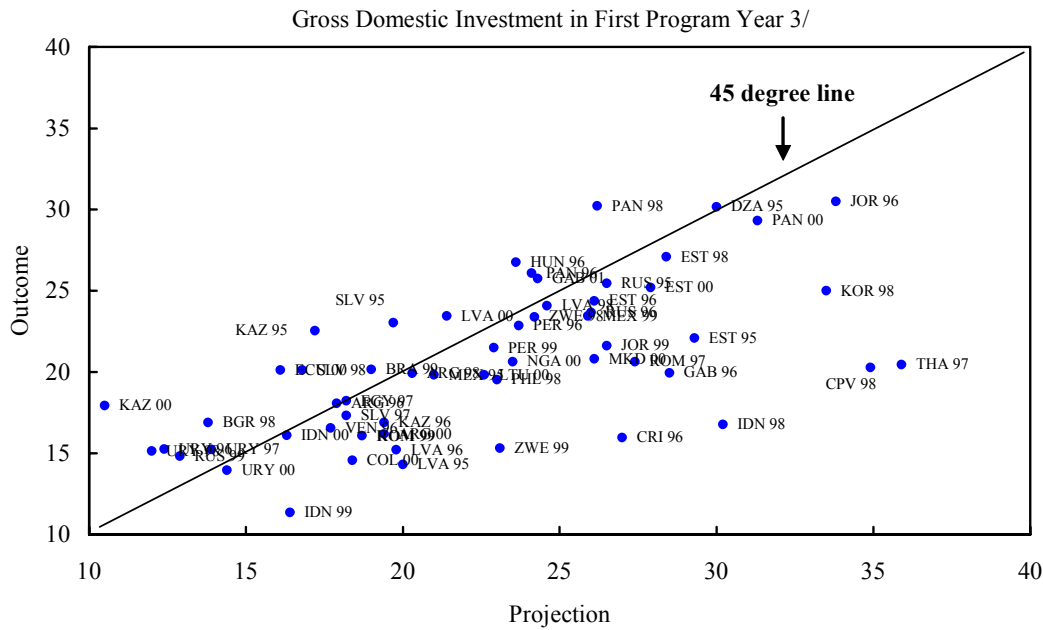
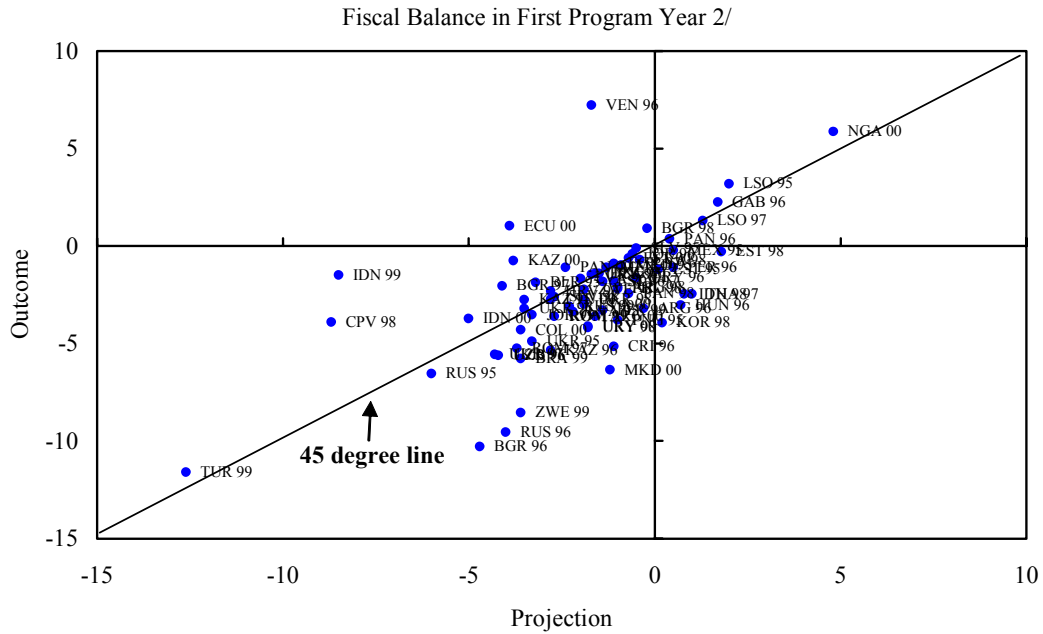
²⁸ While macroeconomic policies were arguably insufficiently strong, thereby failing to engender a return of confidence, the issue of policy appropriateness remains an open question. Benelli (2003) has found that the disparity between projections and realizations of capital flows is positively associated with the size of financial assistance and negatively associated with policy adjustment, but this finding only suggests that the amount of financing and the type of policy choices were associated with differences in projection errors and were not necessarily related to actual movements in capital flows.

Figure 6. Projected and Actual Current Account Balance in GRA-Supported Programs (In percent of GDP) 1/



Source: MONA database; WEO database; and staff estimates.
 1/ Capital account crisis countries are depicted by triangles.

Figure 7: Fiscal Balance and Investment: Projections and Outcomes in GRA-Supported Programs (In percent of GDP) 1/



Source: International Monetary Fund, WEO; MONA; and staff estimates.

1/ Fiscal balance includes grants.

2/ Not shown is Gabon 00 (16.2 percent of GDP, projection).

3/ Not shown are Lesotho 95 (59.9 percent of GDP, actual), and Lesotho 96 (52.2 percent of GDP, actual).

moderate levels of external debt,²⁹ while for countries with low initial external debt ratios, it would not be necessary to stabilize the debt ratio immediately. These considerations imply that the current account balance (relative to the debt-stabilizing balance) should be an increasing function of the initial external debt ratio.

36. Figure 8 (top panel) plots the difference between the programmed and debt-stabilizing current account balance³⁰ (as a percent of GDP and net of FDI flows) during the first program year against the initial external debt (as a percent of GDP). As suggested by considerations of debt sustainability, a positive (and statistically significant) relationship exists between the programmed current account balance (relative to the debt-stabilizing balance) and the initial debt ratio. The relationship implies that, for example, a program in a country with an initial external debt ratio of 50 percent of GDP would seek to reduce the debt ratio to 40 percent of GDP within 5 years.

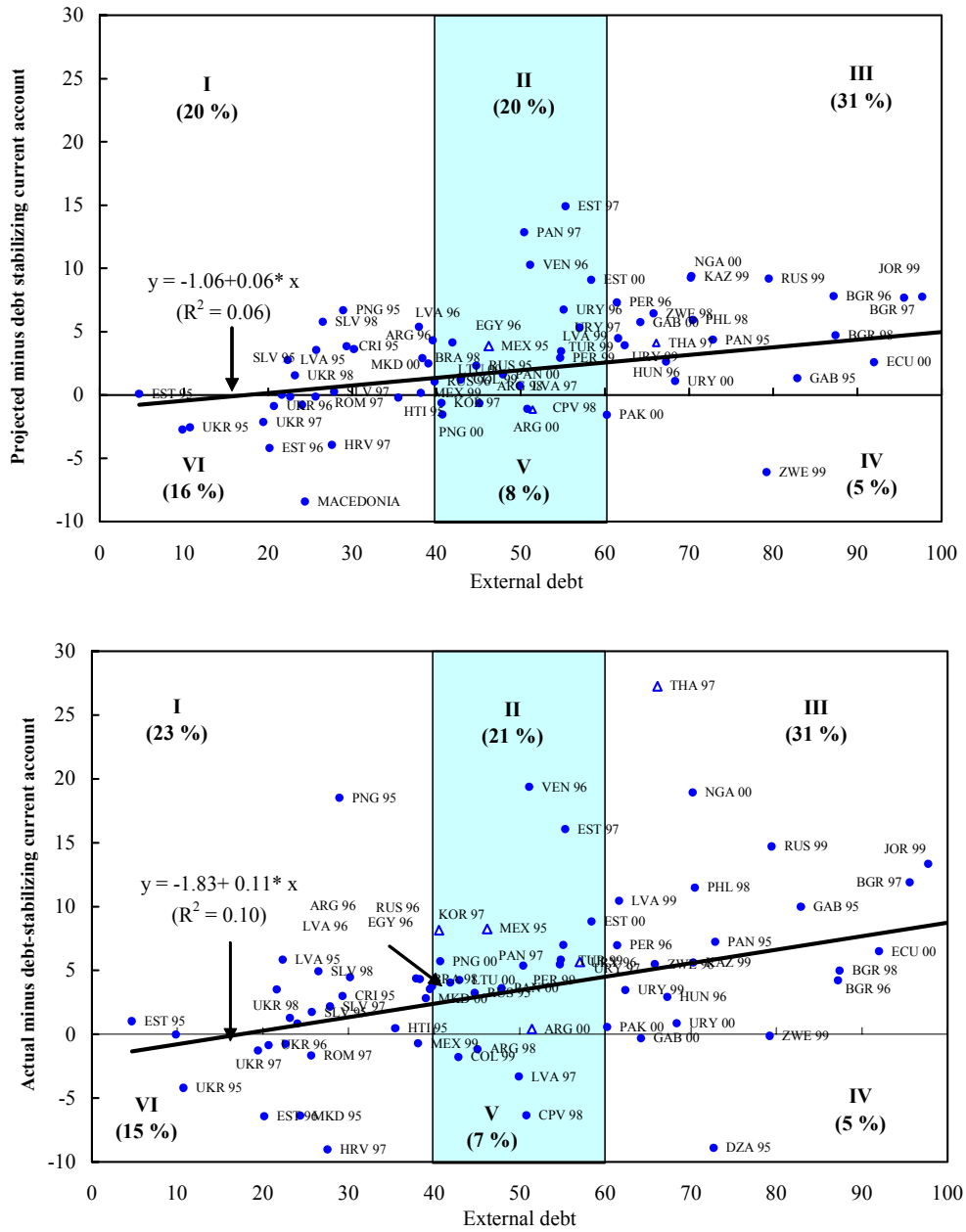
37. The bottom panel of Figure 8 reports outcomes. As indicated in the panel, in three quarters of the 75 GRA-supported programs, the current account balance was larger than would have been necessary to stabilize the external debt ratio given the historical performance of the economy (i.e. these observations lie above the horizontal axis). Again, there is a positive and statistically significant relationship between the actual current account balance (relative to the debt-stabilizing balance) and the initial external debt ratio. Reflecting the finding above that GRA-supported programs, on average, run larger current account balances than programmed, both the slope and intercept of the line are higher than the programmed relationship. While it is difficult to establish precise thresholds at which debt levels may become problematic, the existing empirical literature suggests that there is an appreciable increase in the likelihood of a debt crisis at external debt ratios above 40-60 percent of GDP.³¹ At external debt ratios of 40 percent, the actual current account

²⁹ Stabilizing the external debt ratio implies intertemporal solvency; though solvency does not require a stable debt ratio—see *Assessing Sustainability* (SM/02/166).

³⁰ The debt-stabilizing current account balance (in percent of GDP) is given by $ca^* = -gd$ where g is the medium-term growth rate of the U.S. dollar value of GDP (calculated as the 5 year average of the growth of U.S. dollar value of GDP), and d is external debt (in percent of GDP) averaged over end-period t and end-period $t+1$. Although FDI does not incur additional debt, it is a liability for the recipient country that will eventually need to be serviced in the form of repatriated profits.

³¹ For convenience, the range from 40 to 60 percent of GDP is shaded in the diagram. For a discussion of external debt thresholds see *Assessing Sustainability* (SM/02/166), *Sustainability Assessments* (SM/03/206), and Reinhart, Rogoff and Savastano (2003). On thresholds for public debt, see *Sustainability Assessments* (SM/03/206) and “Public Debt in Emerging markets,” WEO September 2003.

Figure 8. Projected, Actual, and Debt-Stabilizing Current Account Balances in GRA-Supported Programs
(In percent of GDP) 1/



Source: International Monetary Fund, MONA, WEO, and staff estimates.
 1/ Capital account crisis countries are depicted by triangles.

balance is larger than the debt-stabilizing balance by some 2¾ percent of GDP. Of course, this estimate is heavily influenced by the capital account crisis countries and by countries that experienced positive external shocks over this period. Excluding both of these categories (defining positive external shocks as positive changes in oil exports) reduces this difference to slightly above 1 percent of GDP, for the remaining GRA-supported programs.

38. A useful way to characterize the results is to divide the figure into six segments according to the initial debt ratios and whether the current account balance exceeds the debt-stabilizing balance. For observations in section I (23 percent of the GRA-supported programs, 40 percent of which were precautionary), the current account balance exceeds the debt-stabilizing balance even though the initial debt ratio, at less than 40 percent of GDP, is relatively low.³² A further 20 percent of programs (40 percent of precautionary programs) are in the intermediate range for external debt (section II, with debt ratios of 40–60 percent of GDP), including some notable capital account crises such as Korea (1997) and Mexico (1995), whose initial debt levels were 41 and 46 percent of GDP, respectively. These countries have current account balances that would reduce their debt ratios over the medium term although the debt ratios are in a gray zone. While a reduction in their debt ratios may be considered appropriate for such countries, it is unclear that this reduction—as opposed to simply stabilizing the debt ratio—should take place immediately. Countries in section III (32 percent of the total) are generating larger current account balances than would stabilize debt but they start from debt levels that are high so that there is a strong case for a decline in the debt ratio to reduce vulnerability to an external debt crisis.

39. Countries in sections IV, V, and VI have current account balances that are smaller than the debt-stabilizing balances. For 15 percent of cases (section VI), the low initial debt ratio (below 40 percent of GDP) meant that there was no pressing need to reduce the country's external indebtedness. A further 11 percent of such cases were in the gray zone (i.e. an initial debt ratio of 40-60 percent of GDP) and only 5 percent of programs (section IV) had current account balances that were clearly insufficient given their high initial external debt ratio. All of these findings are robust to alternative assumptions underlying the calculations for the debt-stabilizing balance (Appendix II).

40. Overall, the results suggest that external adjustment was largely consistent with that required by medium-term sustainability of external debt. As noted above, however, the actual current account position was better than necessary to stabilize the external debt ratio despite initial debt ratios that were either low or in the gray zone. In part, national authorities may

³² In a few of these cases in section I, however, the current account balance reflected positive terms of trade shocks rather than import compression. Specifically, about a quarter of these cases are associated with positive terms of trade shocks, positive real GDP growth, and constant or rising imports.

have chosen to run larger current account balances to reduce vulnerability to future liquidity crises by accumulating foreign exchange reserves. However, for countries with debt ratios below 40 percent of GDP, the difference between the actual and debt-stabilizing balance amounted to 2.8 percent of GDP against a programmed increase in reserves of 1.5 percent of GDP (Table 2, Figure 9). For countries whose initial debt ratios were in the gray zone of 40-60 percent of GDP, the difference between the current account balance and the debt-stabilizing balance is 8.7 percent of GDP—against a programmed increase in reserves of 1.6 percent of GDP. This suggests that, in these cases, capital outflows were underestimated in the original program design. At the same time, it is noteworthy that national authorities chose to accumulate more reserves than originally programmed—by about 0.2 percent of GDP for countries with low initial debt ratios but almost 1 percent of GDP for countries whose initial debt was 40-60 percent of GDP. This may have reflected a need to accumulate reserves in order to restore confidence as well as differences in the precise timing between current account adjustment and reserve accumulation.³³

Economic impact of external adjustment

41. Beyond the extent of external adjustment, it is also important to consider the economic impact of that adjustment. In particular, for a given improvement of the current account balance, does Fund support help mitigate the negative impact on growth of expenditure reducing policies? There are at least a couple of reasons for believing it might do so. One possibility is that the member makes better policy choices when undertaking adjustment under a Fund-supported program. For instance, to the extent that some fiscal expenditures are less productive, achieving the necessary current account improvement through adjustment in the public rather than private sector may be less harmful to growth. Another mechanism is the policy credibility that Fund support might impart. Efficient external adjustment requires domestic factors of production—capital and labor—to move from the non-tradable to the tradable sector. The willingness of these factors to shift will likely depend on their confidence in the government's intention to carry through the planned adjustment and sustain it, making expenditure-switching policies more effective. The pre-commitment that Fund support and conditionality afford, in turn, can help solve time-consistency problems and provide the additional confidence. Whatever the precise mechanism, preliminary findings (documented in Box 5) suggest that, controlling for movements in the current account balance and of the real exchange rate, countries with Fund-supported programs grow about 1 percentage point per year faster than countries undertaking the same current account adjustment (with the same real exchange rate movement) without the benefit of a Fund-supported program. While these results are robust (estimated using

³³ For example, Korea underwent sharp adjustment of its current account balance in late-1997 and early-1998 in the face of capital outflows, accumulating more foreign exchange reserves than programmed in the latter half of 1998 as capital inflows resumed.

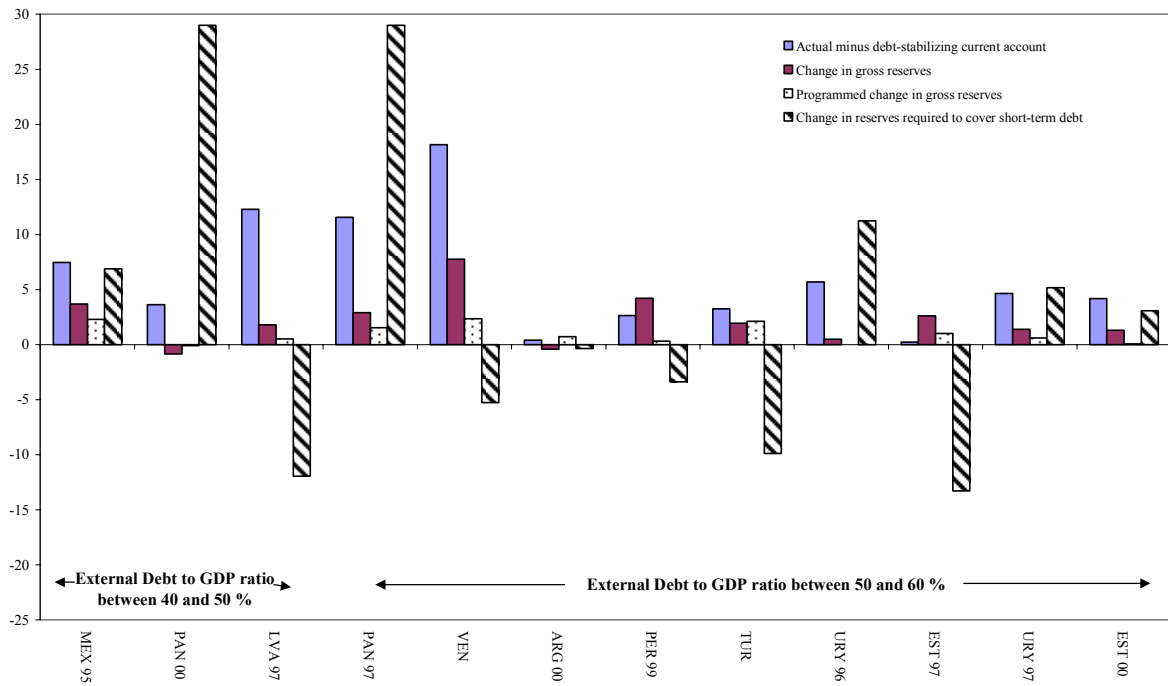
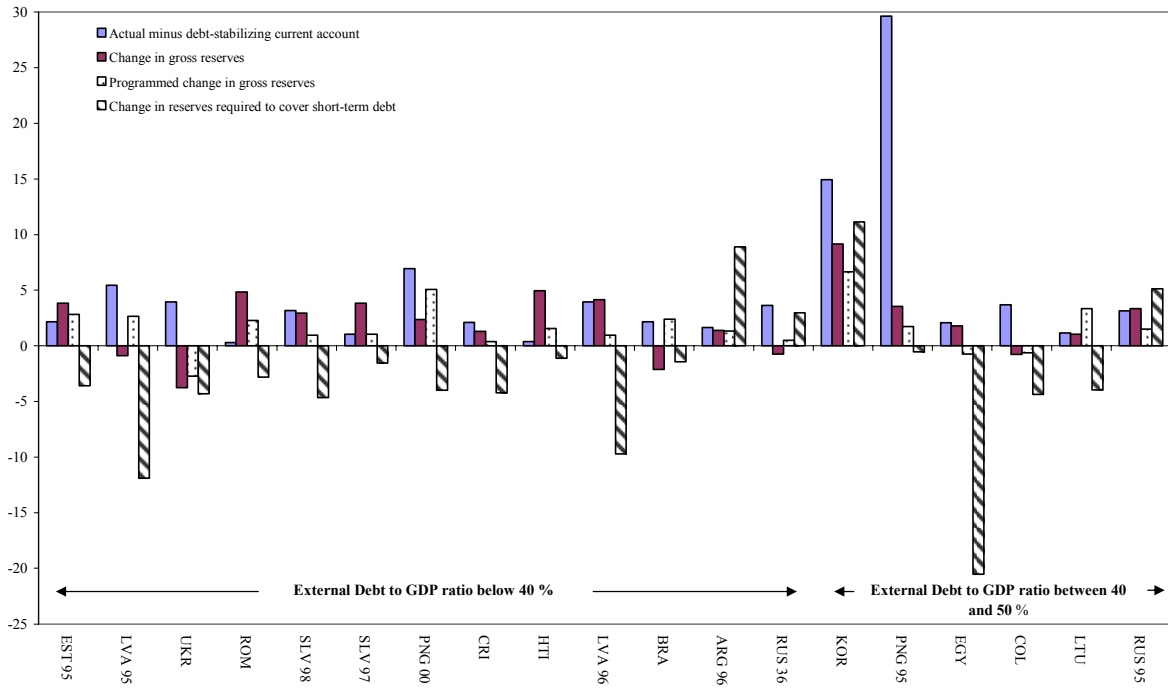
Table 2. Indicators of GRA-supported countries with external debt below 60 percent of GDP and current account balances above the debt stabilizing value

	Debt ratio less than 40 percent		Debt ratio between 40 and 50 percent		Debt ratio between 50 and 60 percent	
	Mean	Median	Mean	Median	Mean	Median
In percent of GDP						
A. Actual minus debt stabilizing current account	2.8	2.2	8.7	3.7	5.6	4.2
B. Programmed increase in reserves	1.5	1.3	1.6	1.5	1.0	0.7
C. Actual increase in reserves	1.7	2.4	2.5	1.8	2.5	1.9
A-B	1.4		7.1	**	4.7	**
C-B	0.2		0.9	*	1.5	**
Proportion of countries with positive values						
Programmed increase in reserves	92.3		92.3		88.9	
Actual increase in reserves	69.2		77.8		88.9	
A-B	69.2		88.9		77.8	
C-B	61.5		66.7		77.8	

Sources: International Monetary Fund; *World Economic Outlook*, *MONA database*, and IMF staff estimates.

* indicates significance at the 10 percent level; ** indicates significance at the 5 percent level

Figure 9. Decomposition of Actual minus Debt-stabilizing Current Account
(In percent of GDP)



Sources: International Monetary Fund; World Economic Outlook, MONA database, and IMF staff estimates.

Box 5. Economic Impact of External adjustment

Fund-supported programs may have an effect on the economic impact of any given adjustment, for instance, because the program results in better policy choices or has other beneficial confidence effects.

Consider a standard model for the current account in which the current account balance is posited to depend negatively on income (since higher income raises demand for imports and thus deteriorates the current account balance) and positively on the real exchange rate (where an increase is a depreciation of the real exchange rate) through competitiveness effects:

$ca = ca(y, q)$ $ca_y < 0, ca_q > 0$. Differentiating:

$$dy = \frac{dca}{ca_y} - \frac{ca_q dq}{ca_y} \quad (1)$$

Therefore, a given improvement in the current account $dca > 0$ will be associated with lower activity or growth except to the extent that the country takes part of the adjustment through a real exchange rate depreciation $dq > 0$. The model, as stated, does not allow for any effects of policies or Fund-support on the economic impact of a given external adjustment. To examine this possibility, the empirical analog to (1) is estimated, controlling for whether the country undertook the external adjustment in the context of a Fund-supported program. Specifically, a regression of the change in growth rates among middle-income countries on the changes in the current account balance and the real effective exchange rate (both of which are instrumented by their lagged values to address problems of endogeneity) as well as a dummy for a Fund-supported program is estimated. The dependent variable is defined as the change in growth rates between period t+1 and period t-1 to avoid problems of the exact timing of the program.

The econometric results suggest that the existence of a Fund-supported program eases the impact on real growth. This is reflected in the sign and statistical significance of the program dummy. The coefficient is also economically significant: a Fund-supported program leads to growth rates in period t+1 that are, on average, 1 percentage point higher than would have prevailed for a similar external adjustment without a Fund-supported program.

Economic Impact of External Adjustment 1/		
Dependent variable: Change in growth between t-1 and t+1		
	(1)	(2)
Change in current account	-0.0021 ** (-2.07)	-0.0018 * (-1.91)
Change in REER	0.5010 * (1.90)	0.4216 * (1.75)
Program dummy	0.0129 *** (3.02)	0.0093 *** (2.66)
Change in growth of major trading partners		0.5626 *** (8.49)
Constant	0.0029 (0.52)	0.0029 (0.57)
Number of observations	682	670
F statistic	5.8 ***	31.3 ***
Standard error of the regression	0.058	0.058

1/ An heteroskedastic error structure is assumed (GLS regression). The t-statistics in parentheses. Significance at: *** 1 percent, ** 5 percent, and * 10 percent.

instrumental variables, including fixed effects, and controlling for transition countries), the problem of endogeneity in program participation remains,³⁴ and therefore the results must be viewed with caution.

42. In sum, consistent with considerations of debt sustainability and reducing vulnerabilities in future crises, both programmed and actual current account balances are higher relative to their debt-stabilizing levels, the greater the initial external debt ratio. Preliminary evidence suggests that more efficient policy choices and program credibility that Fund support affords help mitigate the impact on growth of current account adjustment, subject to the qualifiers mentioned above regarding the endogeneity of the sample. However, on average, current account balances initially improve by more than programmed (although fiscal balances are weaker than programmed), and for a significant portion (23 percent) of GRA-supported programs, current account balances were larger than necessary to stabilize the initial debt ratio even when that ratio was relatively low. Moreover, in a further 20 percent of cases, including some notable capital account crises, countries are in a grey zone (debt ratios between 40 and 60 percent of GDP) with current account balances larger than necessary for stabilizing the external debt ratio.

C. ESAF- and PRGF-Supported Programs

Use of Fund resources

43. Fund disbursements in relation to GDP for PRGF countries broadly correspond to the magnitude of Fund disbursements in GRA-supported programs, amounting to about 0.9 percent of GDP (17 percent of the current account deficit) and, in about 80 percent of the cases, the program targeted an increase in *net* international reserves of about 1.3 percent of GDP (Table 1).

44. Fund support has an important catalytic role in low-income countries, albeit on official rather than on private flows. In particular, official creditors and donors often rely on the Fund for an assessment of the member's macroeconomic policies, and condition their support on adherence to the policies set under the Fund-supported program. As with private capital flows, however, uncertainty remains about the exact magnitude and timing of official transfers, either because the country does not fulfill the associated policy conditions (including instances where the Fund-supported program goes off-track) or because of shifting priorities of donors or their own budgetary constraints.

³⁴ That is, countries better able to adjust externally through the choice of appropriate policies may be more likely to seek Fund support.

Adjustment in relation to medium-term debt sustainability

45. As highlighted earlier, in PRGF-supported programs, the structural transformation of the economy and the promotion of growth and of poverty reduction are key objectives, with the need to maintain external viability acting as an overarching constraint. This is underscored by the inclusion in the programs of some measures such as liberalizing import restrictions that tend to widen the current account deficit in the short run but that help put the economy on a more sustainable path for growth and the balance of payments over the longer term. Outcomes for the external balance in these countries must be viewed in light of these considerations.

46. Indeed, in terms of the comparison between projections and outcomes for the current account balance, the results for highly indebted poor countries (HIPCs) stand in sharp contrast to the experience of GRA-supported programs.³⁵ The current account balance is generally weaker than projected (about 60 percent of observations are below the 45° line). In the first program year, the difference amounts to 1.7 percent of GDP (Figure 10, top panel). Moreover, in contrast with the GRA-supported programs, the difference increases with the time horizon; by the third year it is over 3 percent of GDP. Therefore, averaged over the three program years (Figure 10, bottom panel), the current account balance is 2.6 percent of GDP weaker than expected (deficit outcome of 9.2 percent of GDP against a projected deficit of 6.5 percent of GDP).

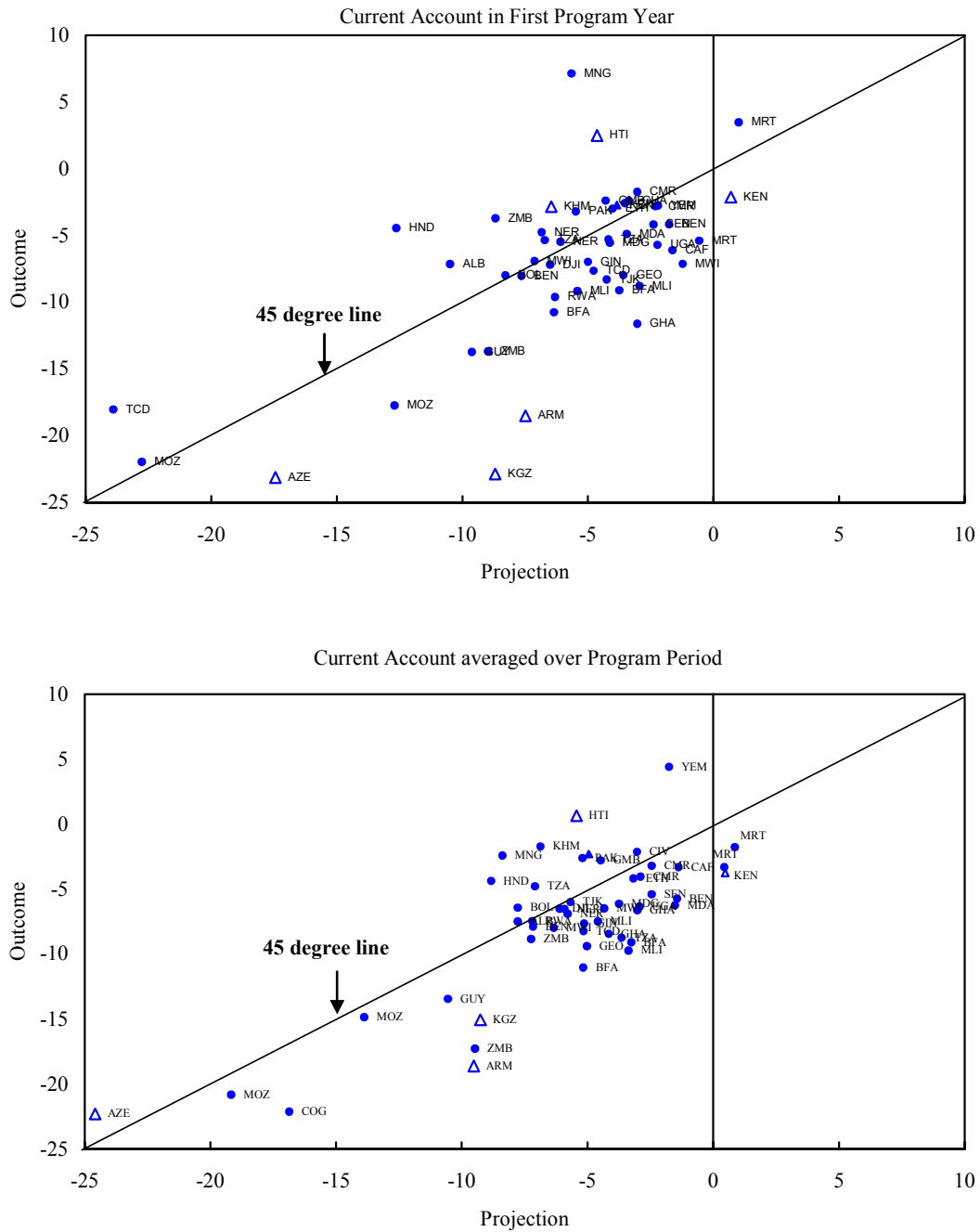
47. In large part, the current account balance is weaker than projected because official grants that were expected at the time of the original program failed to materialize in the amounts originally envisioned, although debt-creating official flows were correspondingly higher than expected.³⁶ Indeed, averaged over the three-year period, the shortfall of official grants to HIPCs amounted to 1.7 percent of GDP per year. This cumulative shortfall was about 1 percentage point of GDP less than the error in projecting the cumulative current account deficits. Thus, notwithstanding a shortfall in official grants, these countries were able to run larger current account deficits than programmed through accumulating external debt.³⁷

³⁵ There were six PRGF-supported programs with non-HIPCs, of which, three had current account balances similar to the HIPCs.

³⁶ Of the 1.7 percent of GDP larger than projected current account deficits, 1 percent of GDP is financed by greater borrowing and 0.7 percent of GDP by lower accumulation of reserves than programmed.

³⁷ If this grant shortfall is viewed as temporary—for instance a delay in disbursement due to administrative reasons—then a correspondingly larger current account deficit would be warranted as the country borrows against this temporary negative shock. In fact, countries ran a current account deficit that was larger than the shortfall in grant disbursements.

Figure 10. Current Account Balance: Projections and Outcomes in PRGF-Supported Programs (In percent of GDP) 1/



Sources: Sources: International Monetary Fund; *World Economic Outlook*, *MONA database*, and IMF staff estimates.

1/ Non-HIPC countries are depicted by triangles.

48. The larger current account deficit than projected among the PRGF countries resulted from larger government deficits rather than from higher private investment. The difference between the actual and projected fiscal balance amounted to 1.1 percent of GDP, while the domestic investment rate was about ½ percent of GDP lower than programmed, partly offsetting the effects on the current account of the worse-than-expected fiscal position (Figure 11). Since the current account shortfall between programmed and actual amounts was estimated at 2.6 percent of GDP, these figures imply that private saving was likely lower than projected.

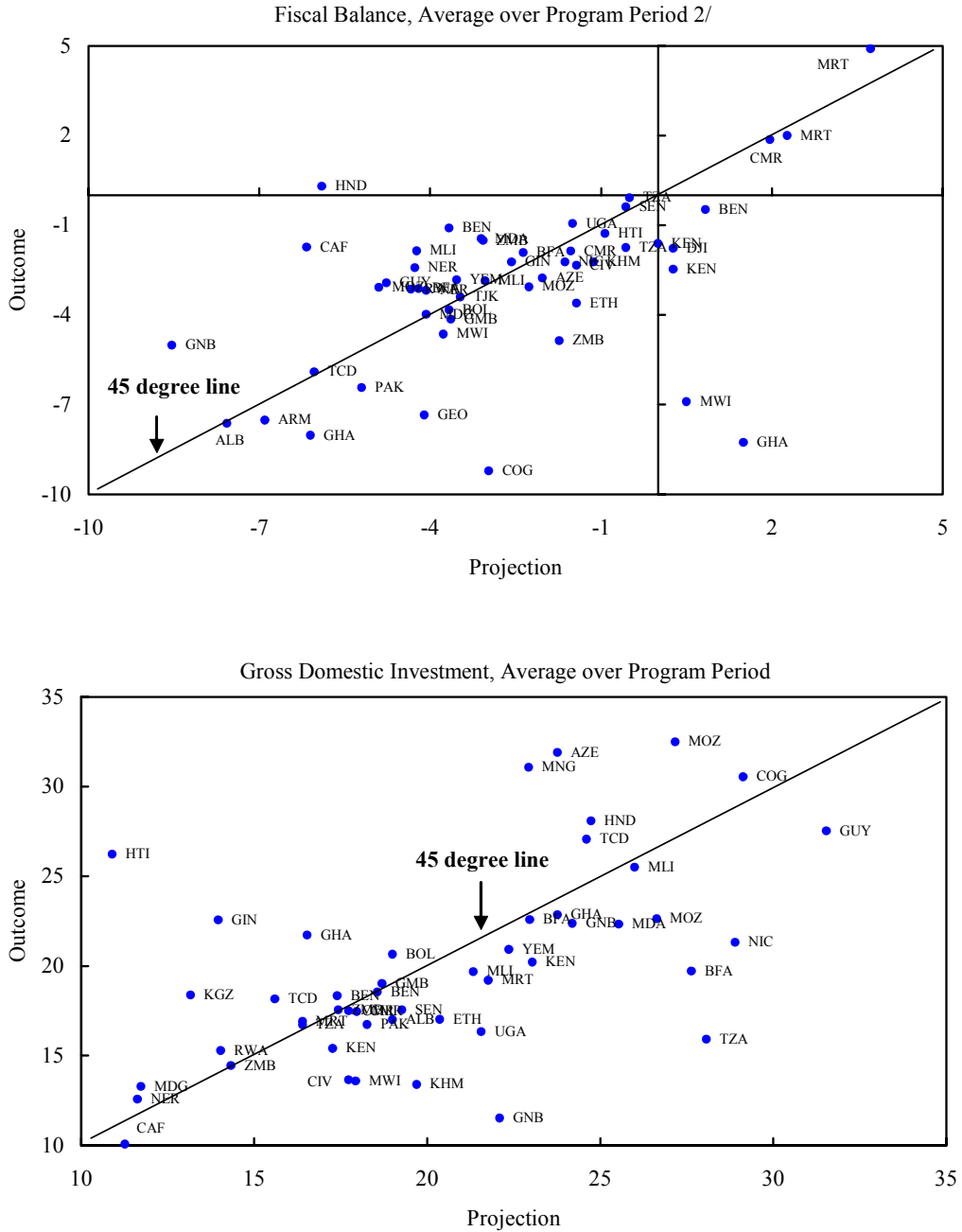
49. This finding of weaker external adjustment than programmed is reinforced by the comparison of the projected and debt-stabilizing current account balances (Figure 12, top panel).³⁸ These programs did not envisage generating current account balances that could be expected—given the historical performance of the economy—to stabilize the external debt ratio. Indeed the relationship between initial external debt and projected (or actual) current account adjustment is actually negative, and these results are robust to changes in assumptions (Appendix II). A comparison of the actual and debt-stabilizing current account balances likewise shows that about one-third of HIPCs failed to generate current account balances sufficient to stabilize the external debt ratio (most observations are below the horizontal axis) even though the external debt ratio was already at elevated levels (Figure 12, bottom panel).³⁹ This negative relationship for programs with HIPC members contrasts with the positive relationship for GRA-supported programs. It could be argued, of course, that these calculations do not incorporate anticipated external debt relief under the HIPC Initiative which could be the prime vehicle for achieving external debt stability over this period.⁴⁰

³⁸ Figure 12 is based on the current account balance that stabilizes the face value, rather than NPV of debt. It can be shown, however, that under the assumption that the grant element on the existing stock of debt is approximately constant between two periods the face value-stabilizing balance will equal the NPV-stabilizing balance (see Appendix III).

³⁹ Empirical studies have found that, on average, low income countries face an increased risk of debt distress at an NPV debt to GDP ratio of 45 percent (SM/04/27). Assuming an average grant element of 40 percent, this roughly corresponds to a nominal debt ratio of about 80 percent of GDP. This is shown as a vertical line in the Figure, though—as with market borrowers—a range of debt levels, rather than a specific level, might be more appropriate given the difficulties of establishing precise thresholds at which debt distress is likely to occur.

⁴⁰ The HIPC initiative was launched in September 1996. At present, fourteen countries have reached completion point under the enhanced HIPC initiative.

Figure 11: Fiscal Balance and Investment: Projections and Outcomes in PRGF-Supported Programs
(In percent of GDP) 1/

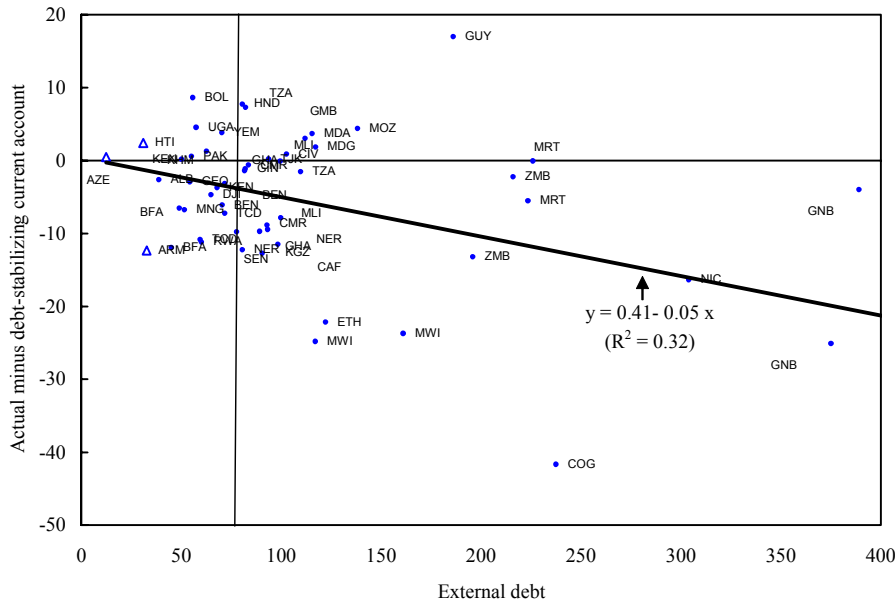
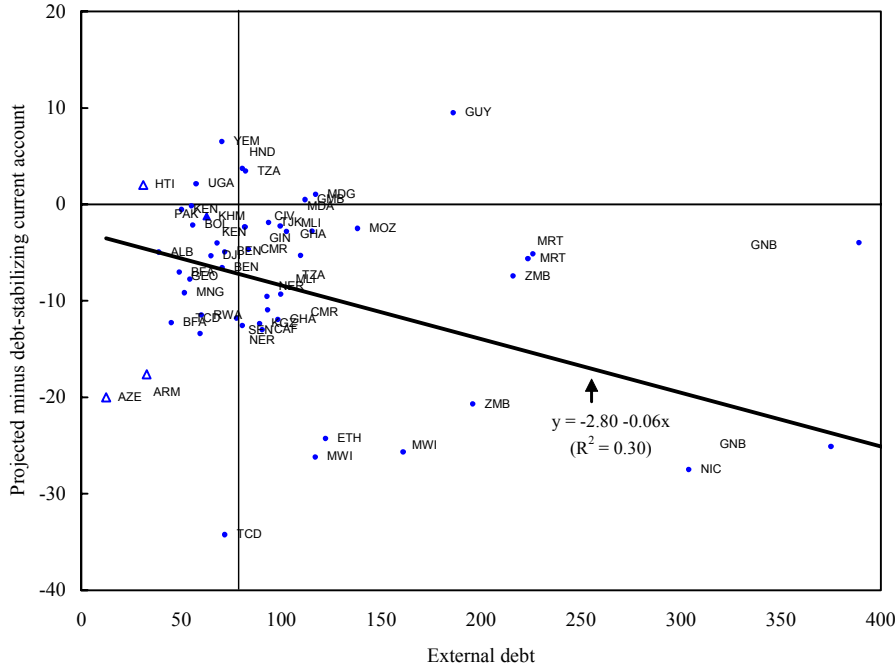


Source: International Monetary Fund, WEO; MONA; and staff estimates.

1/ Fiscal balance includes grants.

2/ Not shown is São Tomé & Príncipe (-21.6 percent of GDP, actual).

Figure 12. Projected, Actual, and Debt-Stabilizing Current Account Balances in PRGF-Supported Programs (In percent of GDP) 1/



Sources: International Monetary Fund; *World Economic Outlook*, *MONA database*, and IMF staff estimates.
1/ Non-HIPC countries are depicted by triangles.

50. This raises the question of whether Fund-supported programs have paid sufficient attention to debt dynamics. Indeed, even controlling for the debt relief associated with the HIPC Initiative by taking an NPV debt estimate as of end-2004, the results are unchanged. Current account deficits among HIPC countries were too large to stabilize their external debt ratios at the lower levels that would prevail following HIPC debt relief, assuming unchanged concessionality rates (Figure 13, top panel).⁴¹ On the other hand, if the degree of concessionality rises following the HIPC completion point, the NPV of debt would decline (see appendix III for more details).

51. Accordingly, while external debt stocks for PRGF-eligible countries have been declining in relation to GDP during the past decade, this is mostly due to debt relief and debt reductions. The bottom panel of Figure 13 compares the actual external debt stock averaged across PRGF countries to the external debt stock implied by cumulating current account deficits (net of FDI)—that is, abstracting from the effects of debt reschedulings or debt relief.⁴² For HIPCs, the difference amounts to over 50 percent of GDP by 2002—thus, in absence of debt relief, debt ratios would, on average, have been at least 50 percent of GDP higher. For non-HIPC PRGF program countries, both the actual debt stock and the implied debt stock follow each other closely.⁴³

IV. OTHER MACROECONOMIC OBJECTIVES

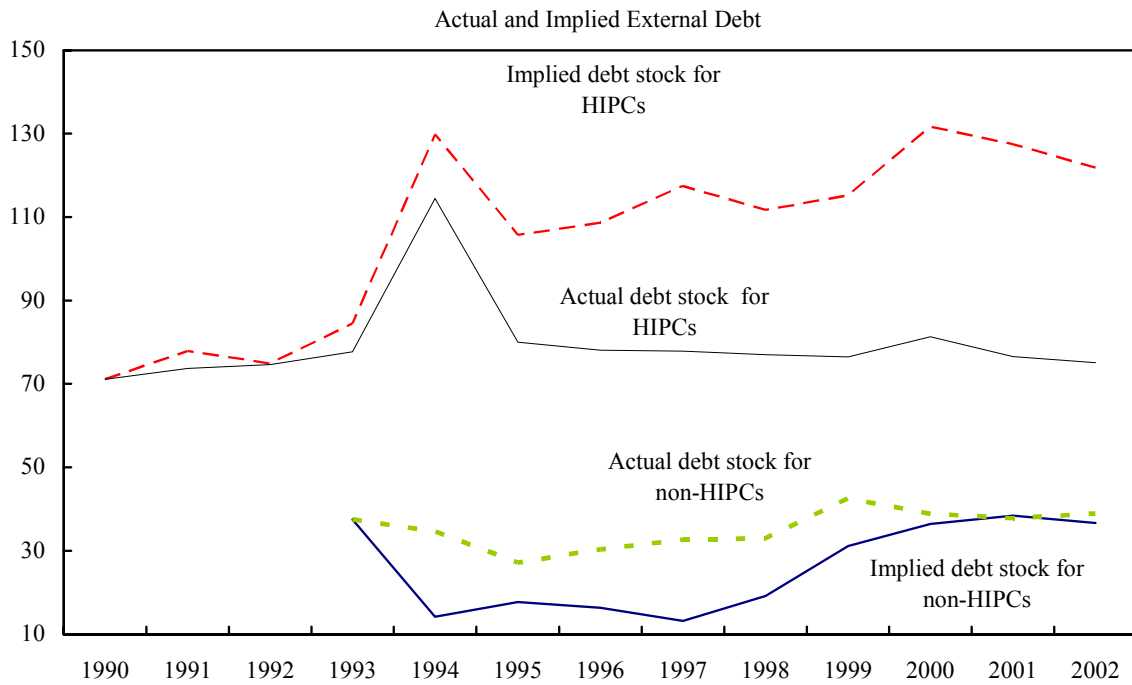
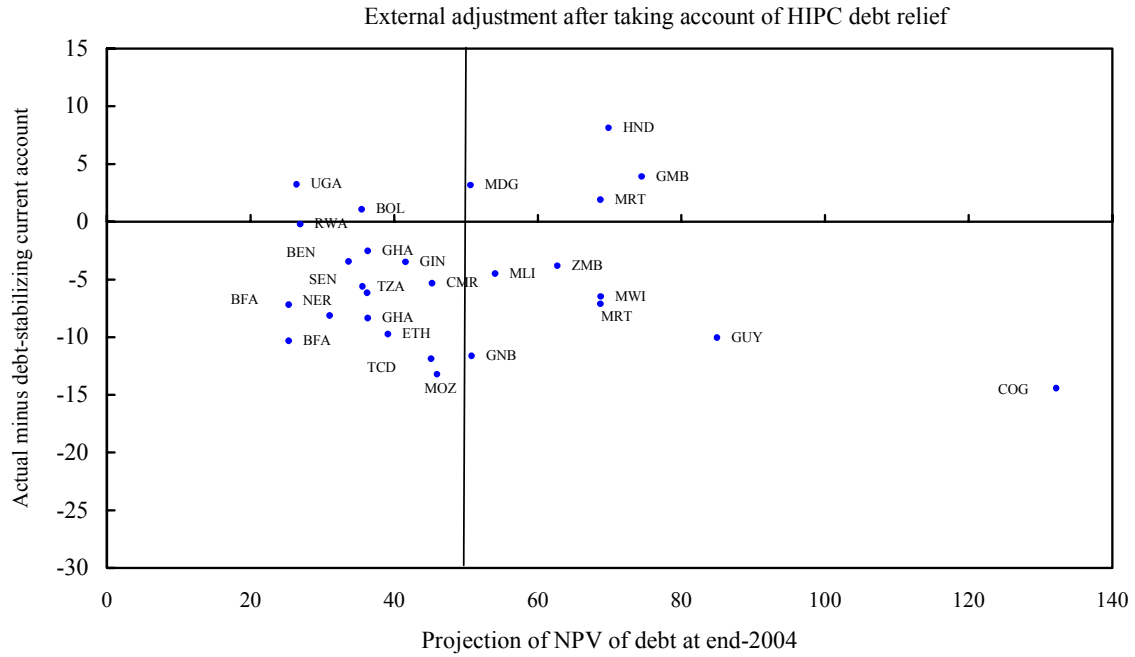
52. External adjustment is only one objective—albeit a crucial one—of Fund-supported programs. National authorities, in formulating their reform or adjustment program may have a variety of other macroeconomic objectives. In some cases, these are directly related to the country's external viability. More generally, however, the authorities' objectives may contribute only indirectly to the external objective, or, may actually put additional strain on it.

⁴¹ For this purpose, the actual debt ratio is replaced by post-debt relief debt ratio in calculating the debt-stabilizing balance, $CA^* = -g^* \overline{npv}$, where g^* is the historical growth rate of the U.S. dollar value of GDP, and where \overline{npv} is the debt ratio that will prevail following debt-relief.

⁴² Indeed, even this counter-factual calculation underestimates the build up of debt that would have occurred in the absence of debt relief because it is based on actual current account balances rather than the balances that would have prevailed had interest payments been made as scheduled.

⁴³ Likewise, the difference between the implied and actual debt stock for GRA countries is only 6 percent of GDP, and has remained fairly constant since 1993.

Figure 13. PRGF-Supported Programs: External Adjustment and Debt-relief



Sources: International Monetary Fund; *World Economic Outlook*, *MONA database*, and IMF staff estimates.

Since these objectives differ across Fund facilities, it is convenient to consider them—and success towards achieving them—separately.⁴⁴

GRA-Supported Programs

53. An analysis of letters of intent and staff reports suggests that (following external viability) reducing inflation is the most common macroeconomic objective of programs supported by the GRA. Inflation control has been a paramount objective in several Latin American countries (notably Mexico, 1995; Ecuador, 2000; El Salvador, 1995, 1997, and 1998; Uruguay, 1996, 1997, and 1999) as well as in Turkey (1999) and in various transition economies. For programs explicitly attempting to disinflate, inflation declines dramatically from an average of about 600 percent per year (and a median of about 390 percent per year) prior to the program to 25 percent per year during the first program year.

54. Only four GRA-supported programs (fewer than 10 percent of the total) list growth as one of the program's explicit objectives. These were Fund-supported programs for member countries that were in the lower half of the middle-income group (Egypt, Jordan (2), and Panama—each of which had per capita GDP below \$4,000 in the mid-1990s) and each aimed at maintaining GDP growth at about 6 percent per year. Success proved elusive, in that the difference between the pre-program and program period growth rate, while positive, was statistically insignificant, and the actual growth rate was well short of the program target. However, this result needs to be viewed cautiously in light of the small sample size.

55. Going beyond the immediate program period (and programs that explicitly targeted either disinflation or growth), it is useful to examine more formally the legacy of Fund-supported programs on macroeconomic performance. In doing so, a natural temptation is to try to attribute success or failure in achieving these macroeconomic objectives to whether the program was supported by the Fund. While the academic literature on program evaluation often tries to do so, this runs into some fundamental identification problems because the counterfactual is unknown. In particular, it is difficult to establish whether the authorities would have adopted the same (or similar) policies in the absence of Fund support. Although the literature has attempted various ways of addressing this problem, including the use of control groups, before-and-after comparisons, generalized evaluation estimators, and

⁴⁴ For the purposes of this section a GRA-supported program applies to countries that were not PRGF eligible as of mid-2003 (and vice versa for PRGF-supported programs). The distinction between “GRA-supported” and “non-PRGF eligible” arises because, particularly in the early 1990s, some low-income countries had either stand alone stand-by arrangements or simultaneous stand-by and ESAF/PRGF programs. The discussion in this section and the results presented in Table 2 classifies these countries as PRGF-supported programs—the assumption is made that the objectives pursued are closer to those of other low-income countries despite their support from GRA resources.

instrumental variables, none of them is especially convincing.⁴⁵ The problem is particularly acute in low-income countries, which typically have successive Fund-supported programs, making it more difficult to identify the policies they would have adopted, and the economic performance that they would have achieved, in the absence of Fund support. Yet, unless the counterfactual can be convincingly established, it is impossible to claim credit or lay blame on the Fund's support of the authorities' program. For these reasons, the approach taken here is to try to answer a simpler—and, ultimately, more relevant—question of whether member countries have been broadly successful in achieving macroeconomic goals under their Fund-supported programs, without getting into the finer debate of whether success or failure should be attributed directly to Fund support.

56. Inflation and growth performance in the three years prior to a Fund-supported program and three years following the completion of a Fund-supported program over the period 1980-2002 are presented in Table 3. The sample is split in 1991 because that year corresponds to the end-year of the previous conditionality study. This longer horizon provides a better control for initial conditions which, at least in previous studies, were found to play a major role in the assessment of the effects of Fund-supported programs. One drawback of this methodology is that there may be overlapping Fund arrangements—i.e., the post-program period of one arrangement coincides with the pre-program period of the successor arrangement. While such cases are relatively rare for GRA-supported programs (as defined earlier, i.e., non-PRGF eligible countries), such overlaps are common for PRGFs; accordingly, the following analysis treats each program as an individual observation.

57. During the period 1980–91, GRA-supported programs are associated with a modest sustained increase in growth—from an average of 2.7 percent per year in the three years prior to the program to 3.1 percent per year in the three years following the program—but reflecting the fact that countries often came to the Fund from initial positions of deep macroeconomic distress, there was a marked dip in the growth rate of $\frac{3}{4}$ percentage point during the first program year (Table 3).⁴⁶ The experience in the 1990s is broadly similar. The growth rate remains largely the same prior to and following the program at about $3\frac{1}{2}$ percent per year, though again growth dipped (by $\frac{3}{4}$ percentage point) during the first year of the program. A notable difference to bear in mind is that real growth during the program period was $\frac{3}{4}$ percentage point higher during 1992–03 than it was during 1980–91.

58. These GRA-supported programs also made important progress in achieving disinflation. Over the period 1992–2002, inflation fell in the non-PRGF eligible sample from 80 percent per year during the three years prior to the program to an average of 27 percent per year in the three years following the program. This improved inflation performance is

⁴⁵ Empirical studies face a number of other problems; Appendix IV surveys the literature.

⁴⁶ This finding is consistent with the Schadler et al. study.

Table 3: Macroeconomic Performance of Countries with Fund-supported Programs 1/

	Number of observations	3-years before program	Program period 3/	3-years after program
<u>PRGF eligible countries</u>				
Inflation 2/				
1980-1991	169	68 n.a.	26	73
1992-2002	62	28 n.a.	16 *	8 ***
Real GDP growth 2/				
1980-1991	169	2.1 n.a.	2.6	2.4
1992-2002	62	2.4 n.a.	4.1 ***	3.4 *
Standard deviation of growth				
1980-1991	169	3.9	3.4	3.2
1992-2002	62	3.0	3.0	2.4
<u>Non-PRGF eligible countries</u>				
Inflation 2/				
1980-1991	104	42 n.a.	72	55
1992-2002	51	80 n.a.	39	27 *
Real GDP growth 2/				
1980-1991	104	2.7 n.a.	2.0	3.1
1992-2002	51	3.6 n.a.	2.7	3.4
Standard deviation of growth				
1980-1991	104	3.7	n.a.	3.5
1992-2002	51	3.0	n.a.	3.0

Sources: International Monetary Fund; WEO; staff estimates

1/ Average annual growth rates over 3-year periods unless otherwise specified.

2/ Statistical significance of the average rate relative to the pre-program average rate; *** at 1 percent, * at 10 percent; n.a. - not applicable.

3/ PRGF-eligible countries: program period is three years and includes the year when the program begins. Non-PRGF-eligible countries: program period is one year—the year the program begins.

statistically significant. This outcome contrasts with the experience during 1980–91 when inflation rose during the program period before falling back to its pre-program level.

59. Finally, among the set of GRA countries, a number of recent programs have focused on enhancing policy credibility with a view to achieving sustainability of public debt dynamics, in part because of the potential for a funding crisis to spill over to the balance of payments even if there are no immediate external financing difficulties. Fund support, of a

member's program (including through conditionality), may enhance policy credibility which, in turn, is likely to be reflected in lower interest rates and spreads, making it easier to achieve debt sustainability. Nevertheless, credibility cannot substitute for adjustment and consistency of policies with program objectives. By underscoring the commitment of the authorities, it can, however, complement their adjustment efforts, lending credibility to their intentions to carry through the necessary adjustment.

60. Turkey (1999) and Brazil (2002) are cases in point. In both cases, the authorities undertook to carry out the requisite fiscal adjustment to achieve primary surpluses that were expected—under reasonable assumptions about growth and interest rates—to stabilize the public debt ratio (Box 6). On the other hand, the experience of Argentina points to some drawbacks of trying to use Fund support to enhance the credibility of the authorities' policies. In particular, the possibility exists that the Fund's "seal of approval" may lead markets to underestimate risks and to continue to provide financing even in the absence of sufficient adjustment.

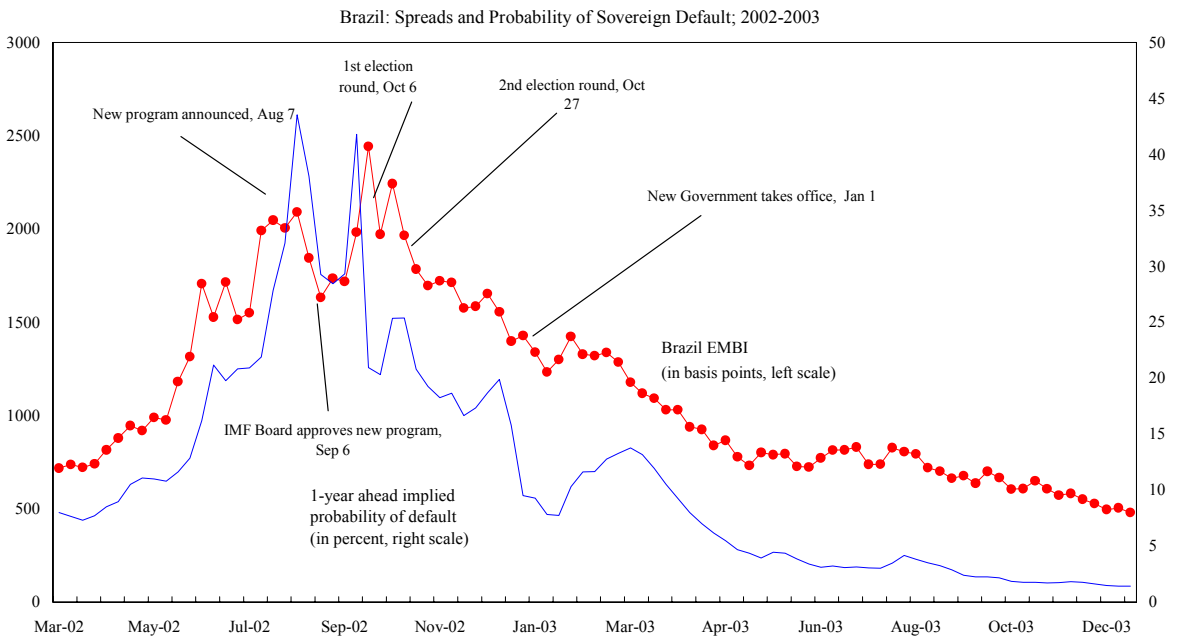
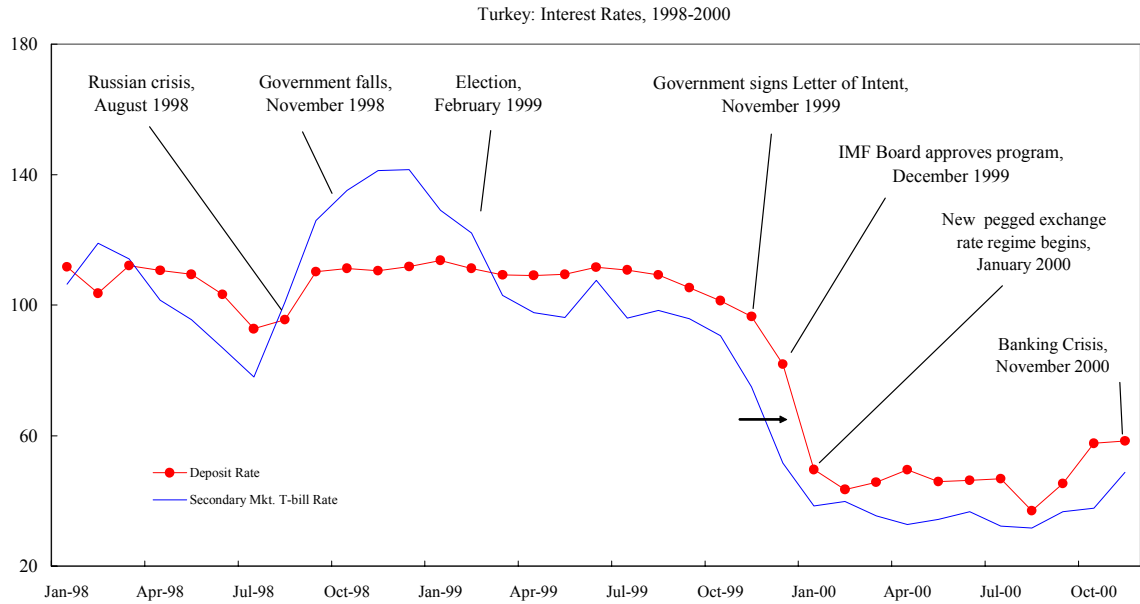
Box 6. Policy-Credibility Programs: the Cases of Turkey (1999) and Brazil (2002)

There have been a few cases of Fund-supported programs whose primary purpose is to bolster the credibility of authorities' efforts in achieving public debt sustainability rather than external adjustment. Among these are Turkey (1999) and Brazil (2002). In Turkey's case, the commitment entailed in signing a Letter of Intent and seeking Fund financial support elicited a very favorable market response even before the actual policies were put in place. Upon signing of the letter of intent (which specified, inter alia, a significant fiscal adjustment) interest rates on treasury bills fell markedly from about 95 percent per year prior to program discussions to 75 percent at the signing of the letter and to 50 percent by the time of Board approval (Figure). Interest rates continued their downward trajectory, aided by the quasi-currency board arrangement, until the November 2000 banking-cum-currency crisis when the credibility of the whole program was called into question. The sharp decline in interest rates implied significant fiscal savings to the government and contributed to putting the public debt dynamics on a sounder footing. While it is difficult to prove that the decline of interest rates stemmed from the Fund's imprimatur on the authorities' program, it is noteworthy that an earlier attempt at disinflation in 1998—without the umbrella of a Fund arrangement—had resulted in very high ex-post real interest rates that compounded adverse debt dynamics and low growth, as the authorities' program lacked credibility.

Brazil's experience, while similar, is rather less clear-cut. The announcement of the new program in early August 2002 led to some improvement in the authorities' credibility that they intended to continue prudent fiscal policies, including under a scenario in which the administration might change at the forthcoming election (it is noteworthy that all four presidential candidates endorsed the Fund-supported program, albeit with somewhat different degrees of commitment). The positive effect proved short-lived, however, and market concerns were rekindled in late September and early October 2002, when a change of administration became increasingly apparent. A durable reduction in spreads only happened as markets gained confidence in the new administration's commitment to adhere to the primary surplus target of 3¾ percent of GDP. Again, the effects of Fund support is difficult to gauge, but the markets seemed to attach at least some importance to the fact that the new program, announced in August 2002, would cover 2003, the first year of the new administration.

In contrast, it is likely that the Fund's continued engagement with Argentina undermined its own credibility. It is noteworthy that Argentina's sovereign bond spreads and the differential between on-shore peso and dollar deposits began to widen appreciably only in 2001—long after fiscal and current account targets had been repeatedly breached. Continued financing by the capital markets allowed for a build up of debt and vulnerabilities, raising the ultimate cost of the crisis when it erupted. These developments led to questions about the Fund's own credibility, perhaps impinging on the beneficial confidence effects that Fund support will be able to provide in future programs.

Interest Rates, Spreads and Implied Probability of Sovereign Defaults: Brazil and Turkey
(in percent per year)



Source: International Monetary Fund; WEO, IFS, and staff estimates.

ESAF- and PRGF-Supported Programs

61. PRGF programs target a number of country-specific intermediate objectives (including those identified by the PRSP), but the key underlying objective is to raise growth and reduce poverty. Fund-supported programs in the transition economies likewise targeted an improvement in the long-run growth performance of the economy, see Box 7. While it is difficult to assess systematically progress in poverty reduction without time series on household surveys, recent research suggests that real GDP growth provides a reasonable proxy.⁴⁷

62. During the 1980s, Fund-supported programs among (ESAF-) PRGF-eligible countries were not associated with a durable increase in growth. Growth fluctuated between 2 percent and 2¼ percent in the three years prior to a Fund-supported program and three years following the program (Table 3). During the 1990s, however, this relationship has changed significantly—the growth rate has risen dramatically from 2½ percent to over 4 percent per annum during Fund-supported programs. Moreover, only some of this gain appears to dissipate after the three-year program period, since growth remains as much as 1 percentage point above its pre-program rate. The increase relative to the pre-program period is statistically significant. As discussed below, the improved growth performance likely reflects both better macroeconomic policies and a more benign domestic and external environment.

63. Inflation in countries with PRGF-supported programs declined from an average of 28 percent per year in the three years preceding the program to 16 percent during the program period and to 8 percent per year following the program (Table 3). This improved inflation performance is statistically significant and is likely to have resulted in an improvement in income distribution as well as a boost to growth.⁴⁸

⁴⁷ For instance, Deininger and Squire (1998), Dollar and Kraay (2001) argue that the poor benefit more from increasing aggregate output than by reducing inequality through redistribution. Moreover, Ravallion and Chen (1997) have found that changes in inequality are uncorrelated with changes in average living standards. Quah (2001) argues, based on an analysis of India and China, that improvement in living standards due to aggregate economic growth overwhelms any deterioration due to increases in inequality. To evaluate the association between real GDP and poverty, the poverty indicator based on the fraction of the population living on less than \$2 per day was correlated with the level of real GDP per capita in 1995. When PPP deflators are used for the real GDP calculation, the correlation coefficient is -0.7 whereas when the current exchange rate is used, the correlation coefficient is -0.6. Either measure of real output therefore appears to be (inversely) related to poverty.

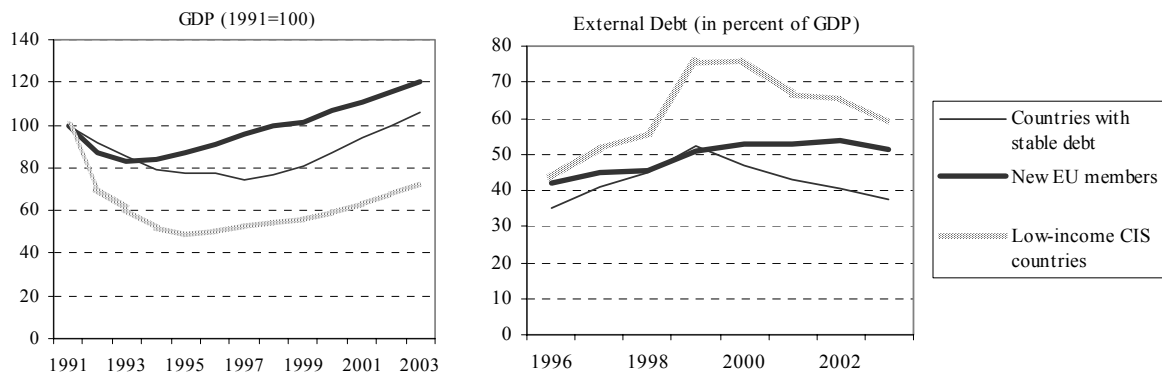
⁴⁸ This inverse relationship between inflation and income inequality is documented in Bulir and Gulde (2000), and Bulir (2001).

Box 7. Growth and External Viability in Transition Economies

Prior to the initiation of Fund-supported programs with transition countries, economic conditions in these countries had been deteriorating for some time. As a result, standard measures of success based on performance before and after Fund-supported programs are inadequate. Since the ultimate objective is to help economies wean themselves off the need for Fund financial support, one yardstick of success is to identify how many of them had stopped requiring Fund financial assistance over the past decade. Another yardstick of success is the extent to which these countries have clawed their way back to the output levels that they started with when they initiated the process of reform and, in particular, if they have done so without building up excessively their debt levels.

On the first yardstick of success, six transition countries have not required Fund support since 2001; these countries are the Czech Republic, Hungary, Poland, and the three Baltic states (Estonia, Latvia, and Lithuania). Output has rebounded in most of these countries to or above the level of output recorded in 1991, when many of these countries initiated their reforms. The two exceptions are Latvia and Lithuania, though growth performance in these countries has picked up over the past few years. Moreover, all six countries have similar levels of GDP per capita and have all entered the European Union in May 2004.

On the second measure—clawing back to the original output level without sacrificing debt sustainability—the results are mixed. Among countries with stable debt levels we have Albania, Belarus, Romania, Turkmenistan and Uzbekistan, all of which have been successful in clawing back the initial output losses.² In contrast, while Armenia, Azerbaijan, Bulgaria, Kazakhstan, Russia, and the Ukraine have achieved debt sustainability, they have not been able to claw back all of the initial output losses. A sharper contrast is observed among countries that have built up large debts over the past decade, mainly to the IFIs, and now must adopt tight economic policies—in fact, this tightening has led to a downward debt trajectory since 1999. These countries include Georgia, Kyrgyz Republic, Moldova, and Tajikistan, which are among the poorest transition economies.



1/ It is arguable whether Uzbekistan's debt-to-GDP ratio is stable since it has been rising continuously since the mid-1990s but it is still below the standard sustainability thresholds

64. As discussed above, it is difficult to establish whether this improvement in growth should be attributed to the Fund-supported programs. A more modest goal is to try to understand the factors behind this improved performance using a regression of the change in real per capita GDP growth on a number of variables typically found in growth regressions—indicators of initial conditions, and changes in exogenous shocks, macroeconomic policies, and structural reforms. This analysis (Table 4) suggests that macroeconomic policies played an important role in the increase in growth during the 1990s, notably through improvements in the fiscal balance during the program period and continued disinflation over the longer term. It appears that internal and external shocks have also been supportive of growth in developing countries during the 1990s. These results are subject to the usual caveats: problems of potential endogeneity in the country's participation in a Fund-supported program and the omission of sufficient controls. However, the decomposition of the improvement in growth is robust to the use of country effects. Notwithstanding these qualifiers, the results suggest that Fund-supported programs have at least provided a framework for sound macroeconomic management, contributing to the better growth performance.⁴⁹

V. CONCLUSIONS

65. The original conception of a Fund-supported program was to solve temporary balance of payments problems in a world of limited capital mobility and fixed exchange rates. The main objective of these programs is thus restoring external viability, a pre-condition for reducing inflation and restoring macroeconomic stability and growth. While this traditional adjustment paradigm remains relevant for many Fund-supported programs, the past decade has seen important evolutions in the objectives and design of Fund-supported programs. Capital account crises have brought external adjustment into sharper relief and called for a flexible policy response as the priority shifts from inducing adjustment to preventing excessive adjustment. For low-income countries supported by PRGF resources, as well as the early transition economy programs, the emphasis has been more on structural transformation, poverty reduction, and growth promotion than on external adjustment.

66. Since the use of Fund resources adds to the country's obligations, the purpose of Fund financial support is to achieve an appropriate time profile of external adjustment, trading off the short-run impact on output and activity against longer-term considerations of debt sustainability. Experience differs between GRA- and PRGF-supported programs.

⁴⁹ A similar equation for upper and lower middle-income countries (non-PRGF countries) with Fund-supported programs yields slightly larger coefficients for growth of G7 countries and for macroeconomic indicators. The coefficients on the effects of internal and external shocks are similar to those of PRGF eligible countries, but they appear to play a less important role in explaining changes in growth. This may reflect more diversified structure of the economy.

Table 4. Explaining Growth in PRGF Countries
(1992-2002, average annual growth rates)

	Coefficient estimates	3-years preceding program	3-year program	3-years following program
Real GDP per capita growth		-0.56	1.34	0.68
Change in per capita growth		1.90	-0.66	
Contributing factors				
G7 real GDP growth	0.6828 ***	0.50	0.10	
Initial conditions				
<i>of which</i>				
initial income level	-0.0595 ***	-0.27	-0.37	
fertility rates	-0.0090	0.25	0.24	
Macro policies				
<i>of which</i>				
inflation	-0.0376 ***	0.02	0.22	
fiscal balance	0.1360 ***	0.29	-0.01	
Structural reforms	0.0285 **	0.08	0.01	
Shocks (internal and external)				
<i>of which</i>				
domestic shocks	-0.0409 ***	0.50	-0.06	
terms of trade	0.0247	0.08	-0.02	
Constant	0.0052 *	0.52	0.52	
Unexplained		-0.08	-1.29	
Number of observations	162	46	46	
Number of countries	46	31	31	
R squared adj.	0.23			
F statistic	26.21 ***			
Standard error of regressior	0.039			

Sources: International Monetary Fund; WEO; staff estimates

Asterisks indicate statistically significant coefficient estimates *** at 1 percent, ** at 5 percent, and * at 10 percent.

67. Overall, among GRA-supported programs, the results suggest that external adjustment was consistent with that required by medium-term debt sustainability. There is a positive relationship between the degree of external adjustment and the initial level of the external debt-to-GDP ratio. Some countries, however, adjusted by more than envisaged by the program or than indicated by consideration of debt sustainability as capital inflows failed to materialize in the short run and the availability of official financing was limited. While in

some cases this adjustment was partly directed at building up reserves, in others, the external adjustment was considerably higher than the reserves build-up. This external adjustment generally reflected investment and output compression. Nevertheless, tentative findings suggest that countries managed to achieve a given improvement in the current account at lower cost to growth than countries adjusting outside of a Fund-supported program.

68. For PRGF-supported programs in HIPC countries, current account balances have fallen well short of the balances necessary to stabilize debt ratios, implying significantly higher debt ratios in the absence of debt relief. Moreover, the positive relationship between initial debt ratios and both programmed and actual current account balances evident in GRA-supported programs does not hold for these countries. Among these countries, the PRGF-supported programs have been geared more toward achieving external viability over the longer term, including by removing trade distortions and fostering growth.

69. Turning to other objectives, countries have seen marked and durable reductions in inflation under GRA- and PRGF-supported programs in contrast to the experience in the 1980s. Moreover, countries with PRGF-supported programs in the 1990s have also seen significant improvements in growth performance, attributable to better macroeconomic policies and to faster growth in major industrialized countries.

70. The findings of this paper raise questions about the success of Fund-supported programs in achieving an appropriate balance between financing and adjustment. For GRA countries, there have been a number of cases—most notably capital account crises—where external adjustment was more abrupt than anticipated, including because the authorities' policy response was insufficient to engender a rapid return of confidence and reflow of capital. For PRGF-supported programs, the focus on improved growth performance rather than on current account adjustment has been reflected in a sustained rise in the growth rate but at the cost of requiring debt relief to keep external debt to manageable levels. In future, maintaining this growth performance without a build-up of debt will likely require policies focused on strengthening the current account position and greater concessionality of official flows.

List of Fund - Supported Programs: GRA, 1995-2000

Country	Arrangement Type	Approval Date	End Date	Country	Arrangement Type	Approval Date	End Date
GRA-Supported Non-Transition Countries				GRA-Supported Transition Countries			
ALGERIA	EFF	May-95	May-98	BELARUS	SBA	Sep-95	Sep-96
ARGENTINA	SBA	Apr-96	Jan-98	BULGARIA	SBA	Jul-96	Mar-98
ARGENTINA	EFF	Feb-98	Feb-01	BULGARIA	SBA	Apr-97	Jun-98
ARGENTINA	SBA	Mar-00	Mar-03	BULGARIA	EFF	Sep-98	Sep-01
BRAZIL	SBA	Dec-98	Dec-01	CROATIA	EFF	Mar-97	Mar-00
CAPE VERDE	SBA	Feb-98	Apr-99	ESTONIA	SBA	Apr-95	Jul-96
COLOMBIA	EFF	Dec-99	Dec-02	ESTONIA	SBA	Jul-96	Aug-97
COSTA RICA	SBA	Nov-95	Feb-97	ESTONIA	SBA	Dec-97	Mar-99
ECUADOR	SBA	Apr-00	Apr-01	ESTONIA	SBA	Mar-00	Aug-01
EGYPT	SBA	Oct-96	Sep-98	HUNGARY	SBA	Mar-96	Feb-98
EL SALVADOR	SBA	Jul-95	Sep-96	KAZAKHSTAN	SBA	Jun-95	Jun-96
EL SALVADOR	SBA	Feb-97	Apr-98	KAZAKHSTAN	EFF	Jul-96	Jul-99
EL SALVADOR	SBA	Sep-98	Feb-00	KAZAKHSTAN	EFF	Dec-99	Dec-02
GABON	EFF	Nov-95	Nov-98	LATVIA	SBA	Apr-95	May-96
GABON	SBA	Oct-00	Apr-02	LATVIA	SBA	May-96	Aug-97
INDONESIA	SBA	Nov-97	Nov-00	LATVIA	SBA	Oct-97	Apr-99
INDONESIA	EFF	Aug-98	Nov-00	LATVIA	SBA	Dec-99	Apr-01
INDONESIA	EFF	Feb-00	Dec-02	LITHUANIA	SBA	Mar-00	Jun-01
JORDAN	EFF	Feb-96	Feb-99	MACEDONIA	SBA	May-95	Jun-96
JORDAN	EFF	Apr-99	Apr-02	MACEDONIA	EFF	Nov-00	Nov-03
KOREA	SBA	Dec-97	Dec-00	ROMANIA	SBA	Apr-97	May-98
LESOTHO	SBA	Jul-95	Jun-96	ROMANIA	SBA	Aug-99	Mar-00
LESOTHO	SBA	Sep-96	Sep-97	RUSSIA	SBA	Apr-95	Mar-96
MEXICO	SBA	Feb-95	Aug-96	RUSSIA	EFF	Mar-96	Mar-99
MEXICO	SBA	Jul-99	Nov-00	RUSSIA	SBA	Jul-99	Dec-00
NIGERIA	SBA	Aug-00	Aug-01	UKRAINE	SBA	Apr-95	Apr-96
PANAMA	SBA	Nov-95	Mar-97	UKRAINE	SBA	May-96	Feb-97
PANAMA	EFF	Dec-97	Dec-00	UKRAINE	SBA	Aug-97	Aug-98
PANAMA	SBA	Jun-00	Feb-02	UKRAINE	EFF	Sep-98	Sep-01
PAPUA NEW GUINEA	SBA	Jul-95	Jan-97	UZBEKISTAN	SBA	Dec-95	Mar-97
PAPUA NEW GUINEA	SBA	Mar-00	May-01				
PERU	EFF	Jul-96	Mar-99				
PERU	EFF	Jun-99	May-02				
PHILIPPINES	SBA	Apr-98	Mar-00				
THAILAND	SBA	Aug-97	Jun-00				
TURKEY	SBA	Dec-99	Dec-02				
URUGUAY	SBA	Mar-96	Apr-97				
URUGUAY	SBA	Jun-97	Mar-99				
URUGUAY	SBA	Mar-99	Mar-00				
URUGUAY	SBA	May-00	Mar-02				
VENEZUELA	SBA	Jul-96	Jul-97				
ZIMBABWE	SBA	Jun-98	Jun-99				
ZIMBABWE	SBA	Aug-99	Oct-00				
GRA-Supported Capital Account Crises Countries							
ARGENTINA	SBA	Apr-96	Jan-98				
ARGENTINA	SBA	Mar-00	Mar-03				
BRAZIL	SBA	Dec-98	Dec-01				
INDONESIA	EFF	Aug-98	Nov-00				
KOREA	SBA	Dec-97	Dec-00				
MEXICO	SBA	Feb-95	Aug-96				
THAILAND	SBA	Aug-97	Jun-00				
TURKEY	SBA	Dec-99	Dec-02				

List of Fund - Supported Programs: PRGF, 1995-2000

Country	Arrangement Type	Approval Date	End Date	Country	Arrangement Type	Approval Date	End Date
PRGF-Supported Non-Transition Countries				PRGF-Supported Transition Countries			
BENIN	ESAF	Aug-96	Aug-99	BENIN	PRGF	Jul-00	Jul-03
BENIN	PRGF	Jul-00	Jul-03	CAMEROON	PRGF	Dec-00	Dec-03
BOLIVIA	ESAF	Sep-98	Sep-01	CHAD	PRGF	Jan-00	Jan-03
BURKINA FASO	ESAF	Jun-96	Jun-99	DJIBOUTI	PRGF	Oct-99	Oct-02
BURKINA FASO	ESAF	Sep-99	Sep-02	GUINEA-BISSAU	PRGF	Dec-00	Dec-03
CAMBODIA	ESAF	Oct-99	Oct-02	KENYA	PRGF	Aug-00	Aug-03
CAMEROON	ESAF	Aug-97	Aug-00	MALAWI	PRGF	Dec-00	Dec-03
CAMEROON	PRGF	Dec-00	Dec-03	NIGER	PRGF	Dec-00	Dec-03
CENTRAL AFRICAN REPUBLIC	ESAF	Jul-98	Jul-01	SAO TOME & PRINCIPE	PRGF	Apr-00	Apr-03
CHAD	ESAF	Sep-95	Aug-98	TANZANIA	PRGF	Mar-00	Mar-03
CHAD	PRGF	Jan-00	Jan-03				
CONGO	ESAF	Jun-96	Jun-97				
COTE D'IVOIRE	ESAF	Mar-98	Mar-01				
DJIBOUTI	PRGF	Oct-99	Oct-02				
ETHIOPIA	ESAF	Oct-96	Oct-99				
GAMBIA, THE	ESAF	Jun-98	Jun-01				
GHANA	ESAF	Jun-95	Jun-98				
GHANA	ESAF	May-99	May-02				
GUINEA	ESAF	Jan-97	Jan-00				
GUINEA-BISSAU	ESAF	Jan-95	Jan-98				
GUINEA-BISSAU	PRGF	Dec-00	Dec-03				
GUYANA	ESAF	Jul-98	Jul-01				
HAITI	ESAF	Oct-96	Oct-99				
HONDURAS	ESAF	Mar-99	Mar-02				
KENYA	ESAF	Apr-96	Apr-99				
KENYA	PRGF	Aug-00	Aug-03				
MADAGASCAR	ESAF	Nov-96	Nov-99				
MALAWI	ESAF	Oct-95	Oct-98				
MALAWI	PRGF	Dec-00	Dec-03				
MALI	ESAF	Apr-96	Apr-99				
MALI	ESAF	Aug-99	Aug-02				
MAURITANIA	ESAF	Jan-95	Jan-98				
MAURITANIA	ESAF	Jul-99	Jul-02				
MOZAMBIQUE	ESAF	Jun-96	Jun-98				
MOZAMBIQUE	ESAF	Jun-99	Jun-02				
NICARAGUA	ESAF	Mar-98	Mar-01				
NIGER	ESAF	Jun-96	Jun-99				
NIGER	PRGF	Dec-00	Dec-03				
PAKISTAN	ESAF	Oct-97	Oct-00				
RWANDA	ESAF	Jun-98	Jun-01				
SAO TOME & PRINCIPE	PRGF	Apr-00	Apr-03				
SENEGAL	ESAF	Apr-98	Apr-01				
TANZANIA	ESAF	Nov-96	Nov-99				
TANZANIA	PRGF	Mar-00	Mar-03				
UGANDA	ESAF	Nov-97	Nov-00				
YEMEN	ESAF	Oct-97	Oct-00				
ZAMBIA	ESAF	Dec-95	Dec-98				
ZAMBIA	ESAF	Mar-99	Mar-02				
AZERBAIJAN	ESAF	Dec-96	Dec-99				
GEORGIA	ESAF	Feb-96	Feb-99				
KYRGYZ REPUBLIC	ESAF	Jun-98	Jun-01				
MOLDOVA	PRGF	Dec-00	Dec-03				
MONGOLIA	ESAF	Jul-97	Jul-00				
TAJKISTAN	ESAF	Jun-98	Jun-01				

ROBUSTNESS OF THE ANALYSIS OF THE DEBT-STABILIZING CURRENT ACCOUNT

Figures 8 and 12 of the text compare actual and debt-stabilizing current account balances for GRA- and PRGF-supported countries. This appendix elaborates on those results. The appendix first discusses the robustness of the results under alternative assumptions underlying the calculation of the debt-stabilizing balance as well as excluding transition economies.

Robustness of Calculation of the Debt-Stabilizing Balance

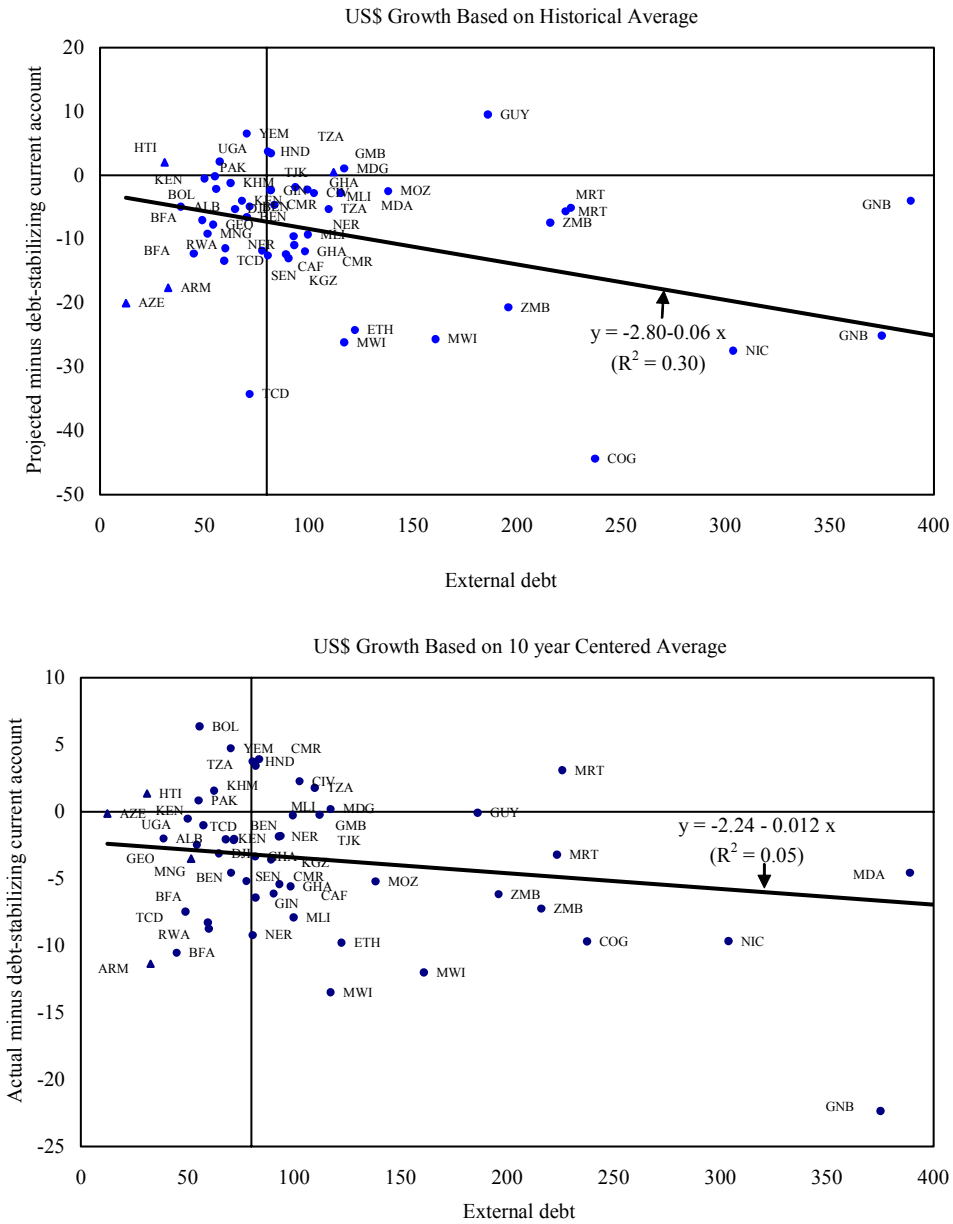
In the calculations underlying the debt-stabilizing current account, long-run growth is estimated as the historical average of growth in U.S. dollars for the five years prior to the commencement of the Fund-supported program. To ascertain whether this result is robust to changes in assumptions, alternative debt-stabilizing current account estimates are derived based on four specifications:

- i) using a 10-year average for growth centered on the first year of the program;
- ii) using a 10-year historical average for growth;
- iii) limiting the sample to non-transition countries;
- iv) using a three-year average for the actual current account in percent of GDP.

As shown in Figures A1-A2, the proportion of observations in each of the six categories (classified according to the initial level of debt and whether the current account balance exceeds the debt-stabilizing balance) is very similar to the proportions reported in Figure 8 of the text. As such, the broad conclusions about adjustment reported in the text appear robust to alternative assumptions for the underlying calculations.

For the PRGF countries, an alternative debt-stabilizing current account estimate is derived based on a 10-year average for growth centered on the first year of the program. As for the GRA programs, the results of the baseline scenario are robust to changes in the assumptions since the negative relationship between the current account over-adjustment and the external debt ratio remains (Figure A3).

Figure A3. Projected, Actual, and Debt-Stabilizing Current Account Balances in PRGF-Supported Programs
(In percent of GDP)



Sources: International Monetary Fund; *World Economic Outlook*, *MONA database*, and IMF staff estimates.

FACE VALUE- AND NPV-STABILIZING CURRENT ACCOUNT BALANCES

In the text, it is claimed that the face value-stabilizing and NPV-stabilizing current account balances are the same under the assumption that the grant element on the outstanding stock of debt is approximately constant between two periods.

Face value-stabilizing balance

Debt dynamics are given by:

$$D_{t+1} = D_t - CA_t \quad (2)$$

where D is the face value of debt, and CA is the current account balance. As a ratio to GDP:

$$d_{t+1}(1 + g) = d_t - ca_t \quad (3)$$

$$d_{t+1} - d_t = -gd_{t+1} - ca_t \quad (4)$$

The face value-stabilizing current account balance, ca^* has the property $d_{t+1} = d_t$:

$$ca^* = -gd_{t+1} \quad (5)$$

NPV-stabilizing balance

Starting from the face value dynamics:

$$D_{t+1} = D_t - CA_t \quad (6)$$

which can be written in NPV terms as:

$$\frac{NPV_{t+1}}{(1 - GE_{t+1})} = \frac{NPV_t}{(1 - GE_t)} - CA_t \quad (7)$$

where GE is the grant element. Then, as a ratio to GDP:

$$\frac{NPV_{t+1}}{(1 - GE_{t+1})Y_{t+1}} \frac{Y_{t+1}}{Y_t} = \frac{NPV_t}{(1 - GE_t)Y_t} - \frac{CA_t}{Y_t} \quad (8)$$

$$\frac{npv_{t+1}}{(1 - GE_{t+1})} (1 + g) = \frac{npv_t}{(1 - GE_t)} - ca_t \quad (9)$$

Now assume that $GE_{t+1} \approx GE_t$:

$$\frac{npv_{t+1} - npv_t}{(1 - GE)} = -g \frac{npv_{t+1}}{(1 - GE)} - ca_t \quad (10)$$

The NPV-stabilizing current account balance, ca^{**} , has the property that $npv_{t+1} = npv_t$:

$$ca^{**} = -g \frac{npv_{t+1}}{(1 - GE)} \quad (11)$$

which is the same as the debt-stabilizing current account balance since $d_{t+1} = \frac{npv_{t+1}}{(1 - GE)}$:

$$ca^{**} = -g \frac{npv_{t+1}}{(1 - GE)} = -gd_{t+1} = ca^* \quad (12)$$

CONFRONTING THE COUNTERFACTUAL: ESTIMATING THE EFFECTS OF FUND-SUPPORTED PROGRAMS

Various approaches have been used to estimate a country's expected gain from participation in a Fund-supported program. Each approach tries to measure the impact of Fund-supported programs by comparing the actual result with a counterfactual using either country data or information from a sample of countries (Table 1); the key difficulty that all studies face lies in constructing a convincing counterfactual.

Before-After calculations compare the performance of the program country in the program period with its own performance in the period before participation. This method suffers from biases associated with a change in the economic structure of the country or shocks between both periods that are unrelated to the decision to participate in a program. *Estimation and Simulation* can be used to address the bias in the first method either by: (a) estimating the economic model and policy reaction function of the participating country before and during the Fund-supported program; or (b) pairing the program country with one or more non-program countries and attributing differences in performance to program participation. This modification (*Control Group Comparison*) may not lead to an improvement because of cross-country differences in exogenous shocks, in economic structures, and in the participation decision. For example, the choice of participating in a Fund-supported program can lead to its own biases because of the unique features of this choice and requires its own controls. These concerns may be reduced, however, by assembling data for a large group of countries, dividing the countries into participants and non-participants, controlling for the choice of a Fund-supported programs, and testing for statistical significance of differences in average macroeconomic performance and policy. The *Generalized Evaluation Estimator* removes external influences by estimating the channels through which Fund-supported programs and external shocks affect macroeconomic outcomes in the participating and non-participating country.

Academic studies on the effects of Fund-supported programs have used all these methods and have tended to concentrate on broad outcomes during the program period such as improvements in the current account and overall balance of payments, inflation, and economic growth. Studies have generally found that the balance of payments has improved, but while inflation has fallen, the decline is generally not significant, partly because most of these studies were conducted before the sharp decline in inflation in the 1990s. Findings on the effects of Fund-supported programs on growth are mixed. Some studies find a significant positive relationship with respect to growth in the short term (Killick (1995), Bagci and Perraudin (1997) and Dicks-Mireaux et al. (2000)) and up to 3 years after the program (Conway (1994)), whereas other studies, in particular, Khan (1990), Przeworski and Vreeland (2000) find significant negative growth effects in the short and long term. Conway (2000) finds that the macroeconomic performance of countries under Fund-supported programs declines with the length of time a country spends under such a program. Perhaps surprisingly, in light of the Fund's responsibility for external sustainability, no academic study has considered the effects of a Fund-supported program on the evolution of debt.

Traditionally, studies have not distinguished between stand-by, EFF, and PRGF programs although the few studies that have made this separation find sizeable differences. Coorey and Kochhar (IMF 1997) find that whereas in the early 1980s, ESAF countries grew at about 1 percentage point per annum less than non-ESAF poor countries, by the early 1990s, this negative differential had vanished. Barro and Lee's (2000) analysis of SBAs and EFFs showed no growth improvement following Fund-supported programs over the 1970-2000 period.

Table. Summary of Empirical Evaluations of the Effect of Fund Programs 1/ 2/ 3/

	Time Period	Number of Programs	Number of Countries	BOP	CA	Effects on Inflation	Growth
Before-after							
Reichman and Stillson (1978)	1963-72	79	...	0	..	0	+
Connors (1979)	1973-77	31	23	0	0	0	0
Killick (1984)	1974-79	38	24	0	0	-*	0
Zulu and Nsouli (1985)	1980-81	35	22	...	0	0	0
Goldstein and Montiel (1986)	1974-81	68	58	-	-	-	-
Pastor (1987)	1965-81	...	18	+	0	0	0
Khan (1990)	1973-88	259	69	+	+	-	-
Killick, Malik and Manuel (1995)	1979-85	...	16	+	+	-*	+
Schadler, et. al. (1993)	1983-93	55	19	+	-	-	+
Simulation/estimation							
Khan and Knight (1981)	1968-75	...	29	+	+	-	-
Khan and Knight (1985)	1968-75	...	29	+	+	-	-
Control-group							
Donovan (1981)	1970-76	12	12	-	+
Donovan (1982)	1971-80	78	44	+	+	-	-
Goldstein and Montiel (1986)	1974-81	68	58	-	+	-	+
Gylfason (1987)	1977-79	32	14	+	...	0	0
Loxley (1984)	1971-82	38	38	0	0	-*	0
Khan (1990)	1973-88	259	69	+	+	-	+
Przeworski and Vreeland (2000)	1951-90	226				0	-*
Generalized Evaluation							
Goldstein and Montiel (1986)	1974-81	68	58	-	-	+	-
Khan (1990)	1973-88	259	69	+	+	-	-*
Conway (1994)	1976-86	217	73	..	+	-	-, +*
Bagci and Perraudin (1995)	1973-92	...	68	+	+	-	+
Dicks-Mireaux, et. al. (2000)	1986-91	88	74	-	+

Sources: Conway (1998); and IMF staff updates.

* indicates statistically significant results

1/ 0 indicates that the results of the various studies were inconclusive.

2/ + indicates a positive effect on the variable indicated.

3/ - indicates a negative effect on the variable indicated.

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