

IMF Program Design and Growth: Is Optimism Deliberate? Is it Defensible?

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Abstract: IMF supported programs include key objectives (such as growth, inflation, and current account adjustment) and the intermediate policy targets (such as monetary and fiscal policies) needed to achieve these objectives. In this paper, we use a new, large dataset, with information on 94 programs between 1989 and 2002, to compare programmed objectives and policy targets to actual outturns, and report two broad sets of results. Regarding objectives, we find that outturns typically fell short of expectations in the areas of growth and inflation, but were broadly in line with the programmed external current account objectives. Regarding the intermediate policy targets, programmed policies were generally more ambitious than policy outturns, and we document the extent of this difference. Second, focusing on growth, we examine the relationship between objectives and policy targets and find a difference in the way ambitious monetary and fiscal targets affected the achievement of the growth objective. Regarding fiscal targets, even when they were missed, if they were more ambitious, the performance on growth was better. On the other hand, more ambitious monetary targets, tended to reduced growth performance.

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I. INTRODUCTION

IMF supported programs are often described by those on the left as creating hardships on the population because they are "too tight." Those on the right do not hesitate to disparage about objectives that were set in the programs but were not achieved. These criticisms refer to the intermediate targets set in IMF supported programs in the areas of monetary and fiscal policy, as well as to the macroeconomic outcomes—such as inflation, employment, and growth. Are both groups right? Is there any validity to these criticisms? Or, are the benchmarks by which IMF programs judged simply misplaced?

Defenders of IMF supported programs would argue that the programmed objectives and targets should not be viewed as forecasts. The objectives are deliberately set high so that countries can aspire to achieve them, even if they do not reach them to the full extent. Similarly, targets are set too tight to ensure that policy slippages are kept to a minimal. If there are slippages either because of negative exogenous shocks or because the programs were deliberately set too tight, mechanisms in Fund policy and procedures exist to provide waivers in meeting the performance criteria, the targets set in the programs. As a matter of fact, ample evidence exists on waivers given in IMF supported programs to ensure that the programs are not interrupted unless a major slippage occurs. This begs the question whether tightness of policy targets and ambitiousness of objectives are deliberate? Also, if they are deliberate, do they help countries achieve better outcomes than they otherwise would have?

In an earlier paper Baqir, Ramcharan, and Sahay (2003) found that: (a) IMF supported programs were indeed too optimistic—in particular, programmed objectives on inflation and growth, were often under achieved; and (b) meeting the fiscal target was associated with meeting the growth target. However, given a small sample of 29 countries in that paper we were unable to report conclusive results, and in particular were not able to explore systematically the relationship between objectives and policy targets.

In this paper, we expand the data set of Baqir, Ramcharan, and Sahay (2003) to 94 countries and confirm our previous findings on the optimism on growth in IMF supported programs. We compare the programmed and actual values of intermediate policy targets and

objectives separately, and uncover systematic patterns. We then we explore the relationship between the intermediate policy targets and the objectives to understand why there is persistent underperformance in achieving some objectives. On the latter, we focus on a recurrent finding in IMF supported programs—the relatively poor performance on meeting the growth objective—by looking at the main intermediate policy targets in the areas of monetary and fiscal policy to explore these questions.

This paper is organized as follows. Section II discusses the IMF's financial programming framework. Section III describes the data. Section IV presents systematic patterns observed in meeting programmed objectives and policies by comparing them with actual outcomes. We examine the extent to which it is possible to meet all program objectives at the same time. We also look at the extent of adjustments that are programmed in different types of IMF supported programs (the Stand-By Arrangement and the Poverty Reduction and Growth Facility) to see whether they differ across these groups. In Section V, we examine the relationship between objectives and fiscal and monetary policy targets respectively. Section VI concludes.

II. THE IMF'S FINANCIAL PROGRAMMING FRAMEWORK

The theoretical relationship between intermediate policy targets (such as the fiscal balance and monetary aggregates) and macroeconomic outcomes (such as inflation and growth) in IMF supported programs is derived from the monetary approach to the balance of payments. In turn, this approach produces a construct known as financial programming, which uses a series of macroeconomic accounting identities to link economic growth, inflation, money supply, the external current account, budget deficit, and other macroeconomic variables. [2]

[2] Underlying these identities are several behavioral relationships. Depending on data availability, country desk economists estimate relationships—the typical ones include money demand functions, export and import functions, and investment and saving functions.

The intermediate policy targets derived within the financial programming framework, such as domestic credit and the fiscal balance, are designed to be consistent with the chosen set of macroeconomic objectives—such as growth, current account adjustment, and inflation—meant to help resolve the country's economic difficulties.[3] In other words, countries that meet the intermediate policy targets should conditionally expect to achieve the macroeconomic outcomes that underlie these targets.

To illustrate the financial programming approach, consider the classical money equation:

$$MV = PY$$

where, *M* is money supply, *V* is the velocity, *P* is the aggregate price level in the economy, and *Y* is aggregate output. In a generic exercise, objectives are first established for inflation and growth, yielding *P* and *Y*. The next step is one of the more important ones in the exercise where an assumption needs to be made on velocity to arrive at the level of money supply consistent with program objectives. Money creation in excess of this amount would be deemed inflationary. In practice velocity is often chosen either by examining its historical pattern and making some assumption of how it is likely to be affected by particular factors in the near future and/or by estimating money demand functions. With money supply so programmed, and given an external target on the net foreign assets of the country, the banking system balance sheet yields the maximum tolerable level of net domestic assets:

$$\Delta NDA = \Delta M - \Delta NFA$$

Together with the balance of payments objective underlying the Fund-supported program, the assumption on velocity therefore affects one-for-one the scope for credit creation in the economy. Programming higher velocity reflects an assumption that money

[3] Additional performance criteria are often set on structural reforms. These are not derived directly from the financial programming framework but are meant to be consistent with, and support, the policy targets.

demand will be low. In the event that money demand is higher, tight money would drive up interest rates and constrain real activity in the economy, thereby affecting the growth outturn.

Net domestic assets can, in turn, be decomposed into net credit to the private sector (CPS), net credit to the government (NCG), and other items net (OIN):

$$\Delta CPS + \Delta NCG + \Delta OIN = \Delta M - \Delta NFA$$

This equation gives the other set of relationships between fiscal policy and real activity. Once velocity has been set and the external objective chosen, a higher government deficit financed by the banking system would come at the expense of lower credit to the private sector. And to the extent that private sector credit facilitates investment, its crowding out would affect real output.[4] We use these relationships to examine in the empirical section below how assumptions on velocity and programmed fiscal adjustments affect growth outturns.

III. DATA

The data for this paper have been assembled from an internal database in the IMF on programs. In the sampling methodology, a unit of observation is defined as a program country year: a calendar year in which disbursements were made to a particular country. Before disbursements are made a document known as a Staff Report is issued and discussed at a meeting of the Executive Board, the body that decides IMF policy and approves Fund-supported programs. As the name suggests, staff reports contain the IMF staff's assessment of a country's economic situation and policies. These documents include the program's intermediate policy targets and their macroeconomic counterparts that are meant to correct the particular problem(s) that prompted the country to seek IMF assistance. After each such Executive Board meeting, the data in the staff report on the key macroeconomic indicators is recorded in the data base.

[4] The tradeoff with private sector credit would be correspondingly less if the deficit is financed from non-bank or external financing.

Typically, there are several Board meetings for a country's program. The Staff Report issued for each successive meeting contains an updated set of historical and programmed/projected data on key macroeconomic indicators. As such there are several vintages of the programmed values for any variable of interest. We make use of the information in the evolving nature of the forecasts/programs by recording the programmed value for a variable x_t in years *t*, *t* – 1, *t* –2, and *t* – 3.

Data on outturns is generally not released until after the end of the year. We therefore define the one-year horizon as the forecast made for x_t in year *t*. Similarly, a two-year horizon is defined as the value programmed for x_t in year *t* – 1. For most empirical work we focus on 1–3 year horizons since the number of observations declines sharply as the horizon length increases. We measure actuals as the most recent observation available on a particular variable for the entire set of staff reports for a country. For example we record the actual fiscal balance for 1995 as that contained in a staff report dated 1998 if that particular staff report is the most recent available for that country in the database.

Conceivably, we could expand our data on actual outcomes by combining these data with other popular databases, such as *Government Financial Statistics (GFS)*, *International Financial Statistics (IFS)*, and others. However, aside from growth and inflation, which are generally measured in the same way across databases, nearly all other variables of interest in monetary, fiscal and external policies can be potentially measured in different ways across databases. This is particularly true for fiscal policy targets—indeed staff report data on fiscal measures, are often somewhat different from those reported in GFS. Hence, to avoid contaminating our data we focus only on actual outturns as recorded in the Staff Reports.

To facilitate our analysis by the type of program, we divide all programs into three groups—the Stand-By Arrangements (SBAs), the Poverty Reduction and Growth Facility (PRGFs), and the high profile SBAs. Borrowings under the SBAs are typically for a shorter time period and carry a higher rate of charge than those under the PRGF. The high profile SBAs are distinguished from other SBAs on the basis of the size of the access to IMF's resources—they are also typically covered prominently by the media. We defined "large

access" as all programs in the database with access exceeding 2 billion SDRs. The list consists of Argentina, Brazil, Indonesia, Korea, Mexico, Russian Federation, Thailand, Turkey, and Uruguay.

The universe of our data consists of 94 countries for the years 1989–2002. The number of observations varies by country for each variable. Table 1 shows the distribution of available observations on actuals for some of the key variables we use in the empirical work. On average we have about 7–8 observations per country, which allows us to capture significant variation both across countries and within countries over time. We exploit both dimensions of this variation in our empirical work below. The corresponding number of available observations for forecasts is considerably smaller. For example, a one-year growth forecast is available for 495 country-years, compared to 776 country-years for actuals.

IV. Objectives and Targets: Programmed vs Actual

To evaluate IMF supported programs, it is of central interest to know whether the objectives as well as the policy targets were met. If objectives are not met (in either direction), it could suggest that programs were either not sufficiently ambitious or that they were too ambitious. If policy targets are not met (in either direction), it suggests that policy efforts by the borrowing countries were either not enough or that the government over performed. If policy targets are met but objectives are not (and vice versa), it may imply that the Fund program design was faulty or that the targets and objectives were inconsistent. [5]

Table 2 and Figures 1–3 summarize the programmed and actual outcomes for the main economic objectives in IMF supported programs—the IMF's Articles of Agreement suggests that the most important goals are inflation, growth, and current account balance (see Baqir, Ramcharan, and Sahay, 2003 for a detailed discussion). The tables compare the

[5] Of course, these inferences can only be drawn after taking into account exogenous shocks that could not be anticipated when the program was designed and the targets and objectives were set. We assume that shocks are randomly distributed with mean zero across the programs.

programmed with the actual outcomes. The programmed objectives are set three, two, and one year prior to their actual realization. For each of the three objectives, the rows indicate values for all programs, PRGFs, SBAs, and the subset of SBAs that had a large access to IMF's resources and could be considered high profile.

A. Objectives

Table 2 indicates that the programmed real GDP growth was consistently higher than the actual outcomes. This is true for all types and subsets of programs. Not surprisingly, programmed growth was progressively higher, the longer was the horizon of the forecasting period (Figure 1). Comparing the forecast errors in absolute terms (the last set of columns) in growth projections across different types of programs, the errors were higher in SBAs than in PRGF programs. It is notable, however, that the errors in the high profile cases were lower than the average of the SBAs and even lower than those in the PRGF cases. This suggests that growth projections are more optimistic in SBAs than in PRGF programs, with one caveat: the projections in the high profile SBA cases were more realistic than other SBAs and PRGFs, although the direction of the bias is the same in all types of programs.

In the second set of rows in Table 2, the programmed and actual inflation are compared. Again, programmed inflation is lower than the actual outcomes in all types of programs. Similar to the growth forecasts, the errors in forecasts fall as the horizon of the forecasting period becomes smaller (Figure 2). Comparing across programs, the inflation objectives are more optimistic in the SBAs than in the PRGFs. Within SBAs, the high profile SBAs had more realistic programmed inflation, although less than in the PRGF cases. Again, the direction of the bias is the same across the programs and points to optimism in achieving inflation objectives.

The results on the current account objectives are qualitatively different from those obtained on the growth and inflation objectives. Although the forecasting error falls with the length of the forecasting horizon as in the previous cases, there is no bias on average in all programs. Moreover, the direction of the bias depends on the type of program. In PRGF programs, the programmed current account balance is somewhat optimistic relative to the

realized values; on the other hand, in the SBAs, the realized values were higher than the programmed ones. Moreover, the high profile SBAs performed the best since it had the smallest bias as compared to other SBAs and PRGF cases.

We also explored the unconditional probability of meeting all three objectives at the same time (Figure 4). The figure shows that when all programs are considered, the probability of achieving all three objectives at the same time is only about 10 percent. As is to be expected, this probability rises as the horizon of the forecast shortens, but only marginally. Figure 4 also indicates that the probability of meeting the current account objective is the highest, followed by the inflation and the growth objectives, respectively. This should not be surprising since the core function of Fund supported programs is stabilization and restoring balance of payments viability.

In summary, it would appear that trade-offs between objectives are high since it is unlikely that all the three objectives—growth, inflation, and the current account—can be met at the same time. Second, the inflation and growth objectives are consistently optimistic in Fund supported programs, while the current account balance is met with reasonable precision. The extent of optimism in inflation and growth is the most in SBAs, followed by PRGF and high profile SBAs, respectively. Third, regarding the current account balance, the over performance is highest in high profile SBAs, followed by other SBAs and PRGF cases, respectively. These results indicate that, when judged by the value of the programmed objectives, the high profile SBAs appear to have performed the best since the bias is either smaller than in other cases or the bias points to over performance. The question that arises is whether the Fund does a better job of designing programs in high profile cases, or is it the case that objectives are deliberately set more realistically since, almost by definition, external scrutiny is higher and therefore the cost of failure is high to both the Fund and the country authorities in question. We explore this issue later.

B. Fiscal Policy Targets

Table 3 compares the fiscal policy targets set in programs with those realized. The first two sets of rows relate to measures of fiscal balance, the next two concern revenues, while the last two are measures of expenditures.

Table 3 indicates that both the fiscal balance and the primary balance targets (first two sets of rows in Table 3) are missed consistently in all types of programs. And, as expected, the forecast errors are smaller the shorter is the horizon of the forecast. Three results are noteworthy; first, the targets in SBAs were missed by larger margins than in PRGFs. Second, the targets in SBAs and PRGFs were missed by larger margins than in the high profile SBAs. And finally, the bias in the overall fiscal balance is in the opposite direction in high profile SBAs, as compared to the PRGF and other SBAs in the one year forecast horizon. That is to say, the actual outcomes on overall balance in high profile SBAs were better than the ones programmed the previous year.

Regarding revenue targets and performance, the pattern is unexpected and striking. The actual revenue outcomes—whether measured with or without grants—are consistently better than the programmed targets in all programs and almost across all time horizons. This pattern is unexpected because we saw that the growth outcomes were far worse than programmed and that should lead us to believe that the revenue performance should also be worse than programmed. The second notable feature is that, contrary to our expectations, errors in forecast do not necessarily fall over time when revenues are measured without grants. It would almost seem as if programs were made tighter over time when the targets came close to being reached early in the programs.

The pattern on expenditure (programmed and actual values) is similar to those on the fiscal balance. Actual expenditures were higher than the programmed ones across all types of programs. Also, as expected, forecast errors generally became smaller with a shortening of the horizon of the forecast. The only puzzling result is in the high profile SBA case: the programmed total expenditures were higher than the actuals, though not if primary expenditures are considered. It would appear that the interest costs were overestimated in the high profile SBAs—the interest rate spreads turned out to be smaller than expected, perhaps

due to better performance as we saw earlier or due to the credibility of the IMF program itself that Fund staff did not take into account at the time the programs were designed.

In summary, the fiscal targets appear to be less tight in the high profile SBA programs, although in general they are tighter in SBAs than in PRGF. While generally it is true that the forecasting errors improved as the forecast horizon shortened, this was not necessarily the case in revenue projections. The latter suggests that either programs were tightened when actual performance was getting close to the programmed value of the targets, or as is unlikely, Fund staff were not updating their information set over time.

C. Monetary Policy Targets

Table 4 compares the programmed monetary policy targets in programs with the actual outturns under the programs. To analyze adjustments under programs and to facilitate comparison across countries, we look at the first differences (rather than the actual levels) in broad money, net domestic assets, and net foreign assets. On the other hand, the absolute value of the velocity is compared across the types of programs.

Several broad patterns emerge in comparing the programmed and actual values of the monetary policy targets. First, targets in broad money and domestic assets growth were generally missed in all types of programs. Second, while those on the foreign assets were met with greater precision. The latter finding is consistent with the fact (as documented above) that external current account objectives are generally met in Fund supported programs. Third, the errors in forecasting monetary targets were similar across PRGFs and SBAs; however, the high profile SBAs appears to have had tighter monetary programs than other SBAs and the PRGFs.

Interpreting the results regarding the income velocity of money is not trivial. We find that programmed velocity, relative to the realized values, is highest in PRGF programs, followed by all SBAs and high profile SBAs, respectively. In fact, in the high profile SBAs, the forecasting error (programmed minus actual value) was negative. One interpretation is that Fund programs underestimated the pick up in the demand for money in PRGF and the

non high profile SBA cases, while they overestimated the increase in demand for money in the high profile SBA cases. Another interpretation is that the monetary programs were much tighter in the high profile SBA cases, as compared to the other two cases, consistent with our interpretation above on broad money and net domestic assets.

D. Were Objective Less Optimistic and Fiscal Targets Less Tight in High Profile SBAs?

One stylized fact that emerges from the previous sections is that programmed objectives and fiscal targets in high profile SBAs were much closer to the actual outcomes, but this is not true for the monetary targets. This could indicate that there was greater realism in the programs on the objectives either because greater care was taken in designing the programs more accurately from a technical perspective, or because greater domestic political constraints were given a large weight. It could also be that policy adjustments designed under these programs on the fiscal side were deliberately smaller than in other programs because the costs associated with the failure of meeting the fiscal targets, but not necessarily the monetary targets, were deemed too high. It is noteworthy that observationally the two are equivalent. The first hypothesis cannot be easily tested but the latter can.

In this subsection, we only focus on the fiscal variables and show that programmed adjustments on the fiscal targets in high profile cases were indeed much smaller.[6]

To illustrate the extent of adjustment that was programmed, Table 5 focuses on the same six fiscal variables as in Table 3. The results are striking and systematic: first, the adjustment planned in all SBAs is always more than in the PRGFs. However, the adjustments programmed in other SBAs are not only always less than other SBAs but also less than in the

[6] Programmed fiscal adjustment is defined as the programmed fiscal balance in the current year less last year's actual fiscal balance. This measure therefore corresponds to the extent of fiscal effort requested of the authorities. The results reported below are with a one year horizon. Similar results were obtained with a two year horizon.

PRGF countries. In fact, virtually all fiscal targets are relaxed in the one year horizon in the high profile SBAs.

V. PROGRAM OBJECTIVES AND INTERMEDIATE POLICIES

IMF supported programs are designed to set policies consistent with achieving certain objectives. As part of this exercise, staff produce a "program scenario" which quantifies the objectives (growth, inflation, others) and the intermediate policies (fiscal balance, monetary expansion, others) consistent with these objectives. Our approach in examining the link between intermediate policy targets and objectives is to ask the intuitive question whether achieving the intermediate policy targets helps to achieve program objectives. We operationalize this by focusing on the deviation of the outturn from the programmed values (what we will refer to as "projection errors" for lack of a better term).[7] For example, the question posed is "does growth fall further short of its programmed value when the growth-consistent policy falls further short of its programmed value?" If there is no such relationship, or the relationship is in the opposite direction, it would caste serious doubt on the validity of the framework underlying program design. Conversely, the empirical relationship may turn out to be in the expected direction yet growth outturns may still fall systematically short of programmed values even after conditioning on the extent to which policy targets are achieved. That would suggest that there are other elements missing in the programming framework and/or that the optimism in setting growth targets is more than what could be justified by policy shortfalls.

We examine the relationship between the growth objective and two types of macro policies: fiscal and monetary.

[7] As discussed above it is not quite right to think of the program numbers as projections as the term is generally used. Program numbers are best understood as staff's projection of outturns conditional on achieving certain policy targets and adequate implementation of other elements the program.

A. Fiscal policy

We start our investigation by recapitulating the statistics presented above on the systematic shortfall in growth outturns compared to the programmed values. The first equation in Table 6 regresses the projection error in growth on a constant—the normal approach for examining the extent of bias in a projection. Projection errors are defined as programmed values less actual values. Such errors can be presented at different time horizons. For brevity we present the results with the two year horizon.[8] Thus, the first column indicates that, on average, actual growth is about 0.9 percentage points less than that programmed a year earlier.[9]

In the second specification, we regress the projection error in growth on the projection error in the overall fiscal balance:[10]

$$e_{t-2}(g_{it}) = \alpha + \beta \cdot e_{t-2}(f_{it}) + \varepsilon_{it} \qquad (1)$$

where, for any variable x for country *i*, $e_{t-s}(x_t)$ denotes the projection error based on a projection made *s* periods ahead and defined as $e_{t-s}(x_t) \equiv {}_{t-s}x_t - x_t$. In our notation ${}_{t-s}x_t$ denotes the *s*-period ahead forecast, and x_t simply denotes the outturn of x in period *t*.

There are two noteworthy points from this regression. First, the coefficient on the projection error on the fiscal balance is consistent with the financial programming framework. That framework implies that, ceteris paribus, a smaller fiscal deficit creates more room for private sector credit, while respecting overall conditions for money growth. To the extent that private sector credit is conducive to financing investment and growth, this is

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[8] While a one-year horizon may be too short for a meaningful test of program design, a three-year horizon may be too long in that it is always superseded by other events. Thus, in general we focus on the two-year horizon although we conducted robustness checks with the length of other horizons as well. The results at different horizons lengths are generally consistent.

[9] The slight variations from the summary statistics presented earlier are due to small differences in the sample sizes.

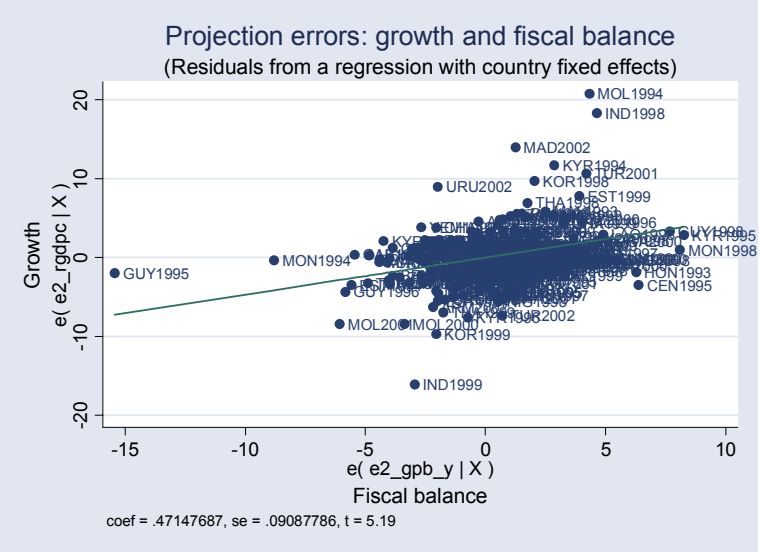
[10] We use the broadest available measure of fiscal balance throughout.

expected to allow a greater expansion of output. The coefficient suggests that a one percentage improvement in the extent to which the fiscal target is met is associated with a quarter percentage point improvement in the extent to which the growth target is met.

The second noteworthy point from the regression is that conditioning on the extent to which the intermediate policy target is met does not get rid of the significant coefficient on the constant term in the equation—the conventional measure of bias. In other words, when the programmed fiscal balance is exactly achieved, growth is systematically less than programmed, though the magnitude is somewhat less than the unconditional bias. Systematically being optimistic in setting growth objectives can have serious consequences for other aspects of program design, particularly for debt dynamics (Helbling, Mody, and Sahay, 2003). Taken together, these two points suggest while programs get the direction of the framework right, they are more optimistic on the growth assumptions than can be justified.

In the third column of Table 6 we allow for country specific heterogeneity by including a complete set of country fixed effects in the equation. The coefficient on the projection error on the fiscal balance strengthens, suggesting that programs usefully use country-specific information in program design. In terms of bias, in this specification there is one estimated constant per country. The joint-test for all country-specific constants being equal to zero does not reject, suggesting that one constant could have been estimated. [11] The chart below plots the residuals from fixed effects regression of projection errors in growth against those in the fiscal balance.

[11] However, the test may be compromised due to limited number of observations per country—in this specification there on average only between 3–4 observations for country. Since time-invariant, country-specific heterogeneity can be an important source of bias—which could contaminate our results—we include a complete set of fixed effects in all subsequent specifications.



A potential issue of interpretation in the above specification is that a relationship estimated in the form of projection errors may be suppressing useful information in the respective relationships between actual growth and actual fiscal balance, and programmed growth and programmed fiscal balance. The next two specifications in Table 6 essentially unravel this relationship. We first regress actual growth on actual fiscal balance and then do the same for the programmed values:

$$\begin{aligned} g_{it} &= \alpha_{1i} + \beta_1 \cdot f_{it} + \varepsilon_{1it} \\ {}_{t-2}g_{it} &= \alpha_{2i} + \beta_2 \cdot {}_{t-2}f_{it} + \varepsilon_{2it} \end{aligned} \tag{2}$$

In each case we get a significant relationship although the magnitude is somewhat stronger in the actuals. We formally test for whether actuals and programmed values can be pooled in the next column where we regress the projection error in growth on both the actual and the programmed level of the fiscal balance:

$$({}_{t-2}g_{it} - g_{it}) = (\alpha_{1i} - \alpha_{2i}) + \beta_2 \cdot {}_{t-2}f_{it} - \beta_1 \cdot f_{it} + (\varepsilon_{2it} - \varepsilon_{1it}) \tag{3}$$

If $\beta_1 = \beta_2 = \beta$ and the errors are uncorrelated we would simply get (1).[12] Table 6 shows the proximity between the estimated coefficients on β_1 and β_2. A Wald test for $\beta_1 = \beta_2$ does not reject, vindicating our original approach.

The measure which we have used so far of fiscal balance is the overall balance. There are two potential problems with this measure. First, to the extent that some revenue consists of fully funded grants—for instance from official donors—an expansion of the deficit may not crowd out private sector credit and may not adversely affect growth. Hence, a more appropriate measure of fiscal balance in the context of the program framework may be one which excludes grants. Second, it may be more appropriate to look at the primary fiscal balance to more appropriately measure fiscal effort by a country. The bottom panel of Table 6 repeats the above set of specifications for the primary fiscal balance excluding grants. We get the same pattern, with very similar sized estimated coefficients, and again the Wald test is not rejected.[13]

Implicit in our discussion above is the notion that an improvement in the fiscal balance leads to an improvement in growth. In reality growth outturns may well affect the realized fiscal balance. In particular, such endogeneity could arise in two forms. First, buoyancy in revenues may yield procyclical movements in the revenue-to-GDP ratio. Second, government spending may react to external shocks to stabilize output. Externally driven slowdowns in growth may cause the government to increase public outlays. Similarly, in good times the government may let the private sector take the lead and roll back spending. We address each of these potential problems in turn.

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[12] We address issues of endogeneity below.

[13] We repeated these regressions for all possible permutations of these fiscal measures along the following dimensions: level of coverage (central government vs. broadest available), treatment of grants (excluded vs. included from revenues); and interest expenditure (excluded vs. included from balance). We found the same general pattern of results as reported above.

As a first step towards reducing potential bias in the above estimated equations, we start by first differencing our data. Hence we look at how the change in growth is correlated with the change in fiscal balance. Although, this automatically gets rid of country fixed effects, it allows us to additionally control for country specific trends. Some countries may be on a "good path" with rising growth and fiscal balances. Using first differences and a complete set of country fixed effects allows us to control for such differences among countries. The first two rows of Table 7 show that the previously estimate relationships in levels survive when estimated in first differences, with and without country fixed effects. For example, a 1 percent of GDP improvement in the fiscal balance is associated with a 0.5 percentage point increase in growth. The next two rows of the table 7 show that this relationship is not coming from the revenue side. There is no relationship between changes in the revenue ratio (including or excluding grants) and changes in growth. Thus, buoyancy is likely not contaminating our results. The last two rows show that the relationship between the fiscal balance and growth emanates from the expenditure side. A one percent of GDP increase in expenditure is associated with about a 0.3 percentage points reduction in growth.

To test whether expenditure, and hence our fiscal balance measures, may be reacting to output shocks due to countercyclical fiscal policy, we present results from instrumental variables regressions in table 8.[14] In this specification we regress the change in growth on the change in the fiscal balance where we instrument for the latter with the *programmed* change in the fiscal balance and export growth. Since adjustment programmed two years in advance is predetermined relative to the actual realization of the shock in period *t*, we think it is a good instrument for identifying the exogenous variation in the actual change in the fiscal balance. In addition, export growth may capture external shocks to which fiscal policy may react. We run this specification both with and without country fixed effects. In each case we find that the improvement in the fiscal balance, as identified, likely increases growth. We also test whether we should instead have these variables directly in the regression as right

[14] Kamisky, Reinhart, and Vegh (2004) finds that that fiscal policy is in fact procyclical for non-industrial countries.

hand side variables by running a test of overidentifying restrictions. In each case the test does not reject, corroborating our approach.

B. Monetary policy

We now turn to examining the relationship between growth and monetary policy in the context of IMF supported programs. The approach we follow is similar to the one followed for fiscal policy. The key relationship we examine is between growth and velocity. An assumption on velocity is one of the first and integral assumptions made as part of program design. After the growth and inflation objectives have been set, an estimate is made for money demand using a projection for velocity. Alternatively, a money demand function is estimated. Setting the amount of monetary expansion under the program is key as it establishes the overall "tightness" of the program. As discussed in the section on financial programming above, after the monetary growth and the NFA targets have been set, the maximum tolerable expansion in net domestic assets is determined as a residual. Programming higher velocity would systematically lead to tighter monetary objectives which in turn, ceteris paribus, would constrain total credit to the economy and hence output.[15]

Table 9 shows the results of the specifications we run. One problem we encountered was the significant large volatility in the monetary aggregates typically observed in the early years in the transition countries, when many systemic changes and structural transformations took place. Under such circumstances, money demand was virtually impossible to predict. To be on the safe side, we therefore exclude all transition countries from the regressions in this section. Since this exclusion reduces our sample size, we use the one-year horizons in this section to maximize available observations. The first column regresses the projection error in growth on a constant. The second regression adds the projection error in velocity:

$$e_{t-1}(g_{it}) = \alpha + \beta \cdot e_{t-1}(v_{it}) + \varepsilon_{it} \qquad (4)$$

[15] As an alternative, one could also focus on the projection errors in net domestic assets. However, we found considerable instability in the measures of net domestic assets in our database. In part, this is due to cases of very high inflation in the sample where the relationships among monetary aggregates become particularly unstable.

where v denotes velocity. The positive estimated coefficient suggests that programming higher velocity drives actual growth performance below the programmed value. The next specification adds a complete set of country fixed effects. Controlling for country specific heterogeneity in fact strengthens the relationship between the projection error in velocity and growth. To reduce the scope for contemporaneous correlation between velocity and growth, the next specification lags the projection error in velocity. Although the number of observations drops, the coefficient is still significant at 10 percent. The next specification unconstrains the coefficients on actual and programmed velocity and shows that the two coefficients are close in magnitude and opposite in sign, as hypothesized. A Wald test for $\beta_1 = \beta_2$ is not rejected, indicating that the regression could be run in terms of projection errors.

The last specification in the Table 9 regresses the projection error in growth on both the projection error in velocity and the projection error in the broad fiscal balance. These results suggest that even after controlling for the projection error in the fiscal balance, higher than actual programmed velocity depresses growth. And conversely, controlling for the tightness of the monetary program, a higher fiscal surplus is associated with greater growth.

VI. CONCLUSION

We have attempted in this paper to uncover several aspects of IMF program design. We have documented systematically the relationship between programmed values and outturns for key program objectives and the intermediate policies designed to achieve them.

First, we find that IMF supported programs achieve the objectives set on external current account adjustment but not those on inflation and growth. In fact, all three objectives are met in about ten percent of programs. Regarding intermediate policy targets on the fiscal and monetary variables, we find that the programmed values were generally more ambitious than those actually achieved in the programs.

Second, we have explored the relationship between growth, on the one hand, and fiscal and monetary policies, on the other. The story that emerges is the following: an

improvement in the fiscal balance is associated with better growth outturns, and programming more ambitious fiscal targets help achieve high growth. However, fiscal targets are more often missed than met, perhaps, because they are harder to enforce. Recognizing this possibility, programs tend to overcompensate by being tougher on the monetary side. Systematically programming tight velocity may protect against missing the fiscal objective but comes at the cost of dampening growth.

Third, we find systematic biases in growth and inflation projections even after conditioning for policy implementation.[16] To the extent that ambitious targets are used to spur authorities into action, this may not in itself be a negative. However, to the extent that the bias is more than what could be justified on grounds of inadequate policy implementation, there is cause for concern. One example of the costs of getting the growth projections wrong is that in the context of debt dynamics where Fund supported programs may predict much lower debt to GDP ratios than those actually achieved.

One question we are not able to address is whether, in a constrained world where fiscal targets are likely to be missed, overcompensating by having tighter monetary programs is the best strategy for designing programs to achieve more ambitious objectives. Although a tighter monetary program is likely to entail output costs, it may be necessary to force action on the fiscal front and ensure inflation stability and restore external current account balance (two other key objectives that we do not explore in this paper in greater depth).

[16] Our results contrast those of Musso and Phillips (2002) who do not find statistical bias in growth projections under IMF supported programs. We note however, that their sample was much smaller, consisting of 54 countries.

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Figure 1. Projection Errors by Program Horizon: Growth
(Error = proj. - actual, mean and 95% confidence interval)

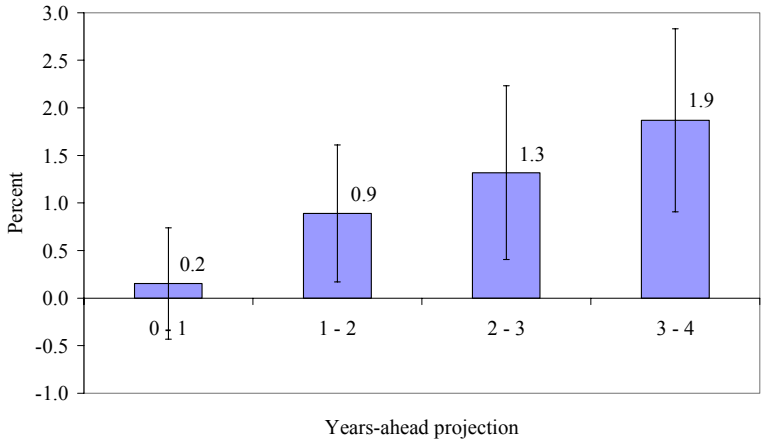

Figure 2. Projection Errors by Program Horizon: Inflation
(Mean and 95% Confidence Interval)

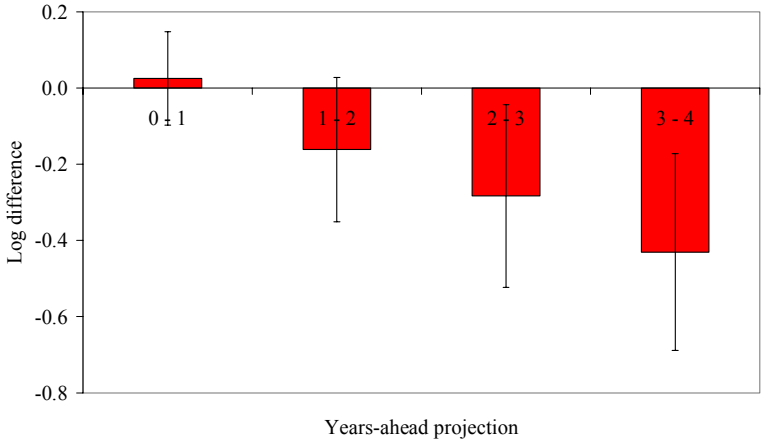

Figure 3. Projection Errors by Program Horizon: Current Account
(Mean and 95% Confidence Interval)

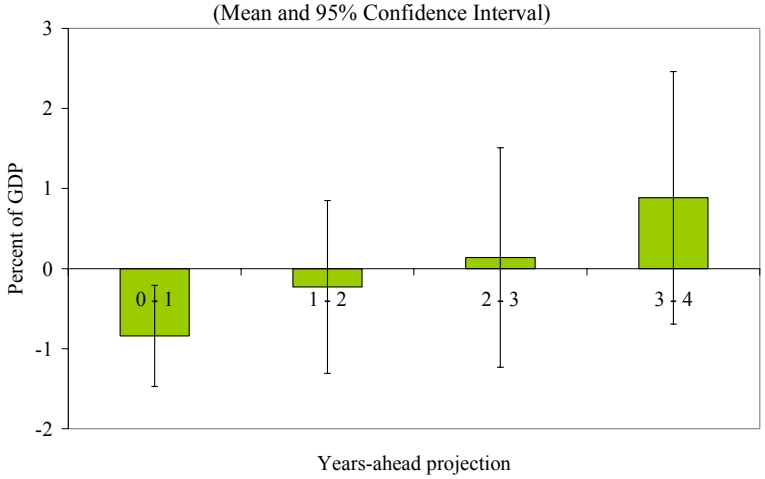

Figure 4. Unconditional Probability of Meeting Program

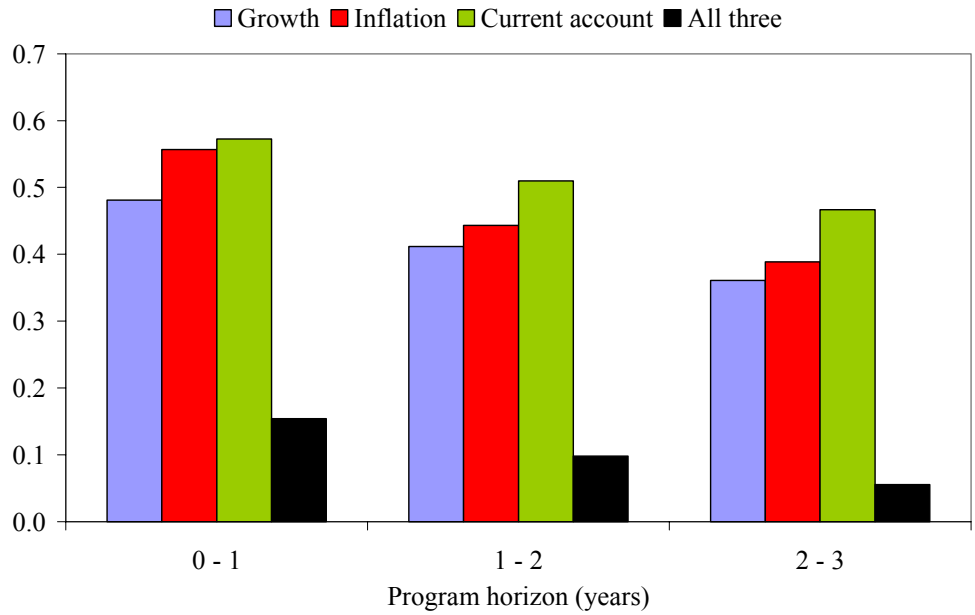

Table 1. Country list and number of observations for key variables

		Number of observations for actuals on				
Country ID	Name	Real GDP growth	Inflation	Current account balance	Fiscal balance	Broad money
ALB	Albania	10	9	10	10	10
ALG	Algeria	7	7	7	7	7
ARG	Argentina	12	12	5	12	8
ARM	Armenia	11	11	6	10	6
AZE	Azerbaidzhan	10	10	9	10	10
BEL	Belarus	3	3	3	3	3
BEN	Benin	13	13	9	13	13
BOL	Bolivia	9	9	9	9	0
BOS	Bosnia & Herzegovina	6	1	0	5	5
BRA	Brazil	6	6	1	6	2
BUL	Bulgaria	12	12	7	11	10
BUR	Burkina Faso	12	12	10	12	11
CAM	Cameroon	12	11	12	12	11
CAP	Cape Verde	5	3	4	3	3
CEN	Central African Republic	9	9	9	9	9
CHA	Chad	11	11	11	10	10
CMB	Cambodia	11	11	9	10	8
COL	Colombia	6	6	3	6	2
CON	Congo	8	8	5	8	8
COS	Costa Rica	6	6	5	5	5
COT	Cote D'Ivoire	7	5	6	6	5
CRO	Croatia	10	10	4	9	7
CZE	Czech Republic	4	4	4	2	3
DJI	Djibouti	7	7	6	3	7
DOM	Dominican Republic	3	3	3	3	3
ECU	Ecuador	7	7	5	7	0
EGY	Egypt	7	7	7	7	7
ELS	El Salvador	8	8	8	8	8
EQU	Equatorial Guinea	3	3	3	3	3
EST	Estonia	10	10	8	9	9
ETH	Ethiopia	11	9	11	11	11
GAB	Gabon	9	9	9	9	8
GAM	Gambia, The	4	4	3	2	4
GEO	Georgia	10	7	5	10	9
GHA	Ghana	10	10	10	10	10
GUB	Guinea-Bissau	5	5	5	5	5
GUI	Guinea	8	8	5	8	8
GUY	Guyana	11	11	11	11	11
HAI	Haiti	4	4	4	4	4
HON	Honduras	11	11	11	11	11
HUN	Hungary	7	7	7	7	7
IND	Indonesia	7	7	4	7	2
JAM	Jamaica	7	7	7	7	7
JOR	Jordan	11	11	11	11	11
KAZ	Kazakhstan	8	8	4	8	7
KEN	Kenya	9	9	9	9	9
KOR	Korea	6	6	6	6	4
KYR	Kyrgyz Republic	13	12	8	12	7

Table 1 (con'd). Country list and number of observations for key variables

		Number of observations for actuals on				
Country ID	Name	Real GDP growth	Inflation	Current account balance	Fiscal balance	Broad money
LAO	Lao People'S Dem. Rep.	11	11	10	11	8
LAT	Latvia	11	11	10	11	11
LES	Lesotho	9	7	7	9	8
LIT	Lithuania	12	12	3	11	9
MAC	Macedonia (Fyr)	8	8	8	8	8
MAD	Madagascar	10	10	10	10	10
MAL	Mali	14	11	13	13	13
MAU	Mauritania	13	11	9	11	11
MEX	Mexico	8	8	8	8	8
MLW	Malawi	9	9	9	9	9
MOL	Moldova	10	10	7	10	8
MON	Mongolia	11	10	11	11	11
MOZ	Mozambique	9	9	9	8	8
NEP	Nepal	4	4	4	4	4
NGR	Nigeria	3	3	3	3	3
NIC	Nicaragua	8	8	6	7	7
NIG	Niger	12	12	11	10	11
PAK	Pakistan	13	10	11	12	12
PAN	Panama	8	8	8	8	8
PAP	Papua New Guinea	8	8	8	8	8
PER	Peru	10	10	6	10	9
PHI	Philippines	9	9	9	9	9
POL	Poland	5	5	5	5	5
ROM	Romania	10	10	8	10	8
RUS	Russian Federation	7	7	7	7	7
RWA	Rwanda	6	6	5	6	4
SAO	Sao Tome & Principe	3	3	3	3	3
SEN	Senegal	11	11	11	11	11
SIE	Sierra Leone	6	6	6	6	6
SLO	Slovak Republic	5	5	4	4	4
SRI	Sri Lanka	4	4	4	4	4
TAJ	Tajikistan	6	6	6	6	4
TAN	Tanzania	8	8	6	7	5
THA	Thailand	6	6	6	3	5
TOG	Togo	6	6	6	6	6
TUR	Turkey	11	11	9	8	7
UGA	Uganda	9	9	9	9	9
UKR	Ukraine	9	9	7	8	7
URU	Uruguay	10	10	9	10	7
UZB	Uzbekistan	3	3	3	3	3
VEN	Venezuela	3	3	3	3	3
VIE	Vietnam	10	10	7	10	9
YEM	Yemen	8	8	8	7	7
YUG	Yugoslavia	4	4	4	2	3
ZAM	Zambia	10	10	5	10	9
ZIM	Zimbabwe	10	10	10	10	8
Total		776	748	649	735	665
Average number of obs. per country		8.3	8.0	6.9	7.8	7.1

Table 2. Objectives in IMF Programs: Program vs. Actual

	Program				Difference (program minus actual)		
	t - 3	t - 2	t - 1	Actual	t - 3	t - 2	t - 1
Real GDP growth (in percent)							
All program-years	5.2	4.6	3.5	1.8	3.4	2.8	1.7
PRGFs	5.7	5.3	4.7	3.3	2.4	2.0	1.4
SBAs	4.5	3.8	2.0	0.3	4.2	3.5	1.7
o/w large access	4.1	2.9	1.3	1.1	3.0	1.8	0.2
CPI Inflation (percent, end-of-period)							
All program-years	5.0	6.0	8.0	10.3	-5.3	-4.3	-2.3
PRGFs	4.3	5.0	7.0	8.4	-4.1	-3.4	-1.4
SBAs	6.0	7.0	9.1	13.2	-7.2	-6.2	-4.1
o/w large access	6.0	6.3	6.6	8.9	-2.9	-2.6	-2.3
Current account balance (percent of GDP)							
All program-years	-8.6	-9.1	-9.4	-9.4	0.8	0.3	0.0
PRGFs	-11.4	-12.4	-13.2	-13.9	2.5	1.5	0.7
SBAs	-4.1	-4.7	-4.6	-4.5	0.4	-0.2	-0.1
o/w large access	-2.1	-1.3	-1.3	-1.0	-1.1	-0.3	-0.3

Source: IMF; Authors' calculations

Notes: Table reports means by group except for inflation for which medians are reported due to outliers. All observations are used for each sample. The same general pattern is preserved if sample size is kept constant across columns. The last three columns reportthe dfference between the program columns and the actual columns.

Table 3. Fiscal Policy Targets in IMF Programs: Program vs. Actual

	Program			Actual	Difference (program minus actual)		
	t - 3	t - 2	t - 1		t - 3	t - 2	t - 1
				(Percent of GDP)			
Fiscal balance, broadest coverage							
All program-years	-2.5	-3.0	-3.5	-4.7	2.2	1.7	1.2
PRGFs	-3.1	-3.7	-4.3	-5.6	2.5	1.9	1.3
SBAs	-1.3	-2.0	-2.5	-3.8	2.5	1.8	1.3
o/w large access	-1.9	-3.0	-3.8	-3.3	1.4	0.3	-0.5
Primary balance (excluding grants)							
All program-years	-2.1	-2.5	-2.9	-3.8	1.7	1.3	0.9
PRGFs	-3.5	-4.2	-5.2	-6.1	2.6	1.9	0.9
SBAs	1.8	1.0	0.8	-0.7	2.5	1.7	1.5
o/w large access	0.7	-0.4	0.0	-0.5	1.2	0.1	0.5
Revenues (excluding grants)							
All program-years	20.1	20.6	21.0	21.4	-1.3	-0.8	-0.4
PRGFs	17.7	17.8	17.6	17.8	-0.1	0.0	-0.2
SBAs	26.7	26.7	27.1	27.3	-0.6	-0.6	-0.2
o/w large access	22.6	21.5	20.4	21.7	0.9	-0.2	-1.3
Revenues (including grants)							
All program-years	22.8	23.5	23.9	24.2	-1.4	-0.7	-0.3
PRGFs	20.7	21.2	21.3	21.3	-0.6	-0.1	0.0
SBAs	27.0	27.3	27.6	27.9	-0.9	-0.6	-0.3
o/w large access	21.6	21.5	21.1	21.1	0.5	0.4	0.0
Total expenditures							
All program-years	25.2	26.3	27.0	28.2	-3.0	-1.9	-1.2
PRGFs	23.8	24.4	24.7	25.9	-2.1	-1.5	-1.2
SBAs	28.2	29.3	30.1	31.3	-3.1	-2.0	-1.2
o/w large access	23.2	24.3	24.1	23.4	-0.2	0.9	0.7
Primary expenditures							
All program-years	22.8	23.5	23.9	25.3	-2.5	-1.8	-1.4
PRGFs	21.8	22.0	22.2	23.1	-1.3	-1.1	-0.9
SBAs	25.1	25.8	26.4	28.0	-2.9	-2.2	-1.6
o/w large access	21.7	20.8	19.9	20.9	0.8	-0.1	-1.0

Source: IMF; Authors' calculations

Table 4. Monetary Policy Targets in IMF Programs: Program vs. Actual

	Program			Actual	Difference (program minus actual)		
	t - 3	t - 2	t - 1		t - 3	t - 2	t - 1
				(Percent of GDP)			
Broad money							
All program-years	22.7	23.4	23.5	25.9	-3.2	-2.5	-2.4
PRGFs	20.1	20.2	19.6	21.9	-1.8	-1.7	-2.3
SBAs	38.4	37.4	32.1	34.3	4.1	3.1	-2.2
o/w large access	41.0	54.5	40.3	36.1	4.9	18.4	4.2
Increase in broad money							
All program-years	3.3	3.7	3.6	5.9	-2.6	-2.2	-2.3
PRGFs	2.8	2.7	2.6	4.0	-1.2	-1.3	-1.4
SBAs	6.1	7.2	6.7	8.2	-2.1	-1.0	-1.5
o/w large access	6.3	7.3	6.8	9.9	-3.6	-2.6	-3.1
Increae in net domestic assets							
All program-years	1.9	2.1	2.1	2.9	-1.0	-0.8	-0.8
PRGFs	1.4	1.4	1.3	1.6	-0.2	-0.2	-0.3
SBAs	3.3	4.2	3.7	4.8	-1.5	-0.6	-1.1
o/w large access	3.8	5.8	5.4	7.7	-3.9	-1.9	-2.3
Increase in net foreign assets							
All program-years	1.4	1.7	1.8	1.9	-0.5	-0.2	-0.1
PRGFs	1.3	1.4	1.6	1.9	-0.6	-0.5	-0.3
SBAs	1.7	2.2	2.0	1.9	-0.2	0.3	0.1
o/w large access	1.2	1.3	0.9	0.5	0.7	0.8	0.4
Velocity							
All program-years	4.4	4.3	4.3	3.9	0.5	0.4	0.4
PRGFs	5.0	5.0	5.1	4.6	0.4	0.4	0.5
SBAs	2.6	2.7	3.1	2.9	-0.3	-0.2	0.2
o/w large access	2.8	1.8	2.5	2.8	0.0	-1.0	-0.3

Source: IMF; Authors' calculations

Notes: Table reports medians by group. The median is a better indicator of the central tendency for monetary variables due to several outliers in the monetary series. All observations are used for each sample. The same general pattern is preserved if sample size is kept constant across columns. The last three columns report the dfference between the program columns and the actual columns.

Table 5. Programmed Fiscal Adjustments, by Program Type

	Programmed change in the fiscal measure			
			SBAs	
	All	PRGFs	All	Large access
	(Percent of GDP)			
Fiscal balance, broadest coverage	0.54	0.55	0.53	-0.84
Primary fiscal balance excluding grants, broadest coverage	0.55	0.41	0.80	0.46
Revenue	0.53	0.67	0.33	0.02
Revenue, excluding grants	0.36	0.36	0.36	-0.95
Expenditure	0.10	0.29	-0.19	-0.18
Primary expenditure	0.07	0.27	-0.21	-1.06

Note: cell entries report the fiscal measure programmed for one-year ahead less this year' actual.

Table 6. Regressions for projection errors in growth and fiscal targets

	Dependent variable					
	Proj. error in growth	Proj. error in growth	Proj. error in growth	Actual growth	Programmed growth	Proj. error in growth
Fiscal measure = Broad fiscal balance:						
Country fixed effects	No	No	Yes	Yes	Yes	Yes
Constant	0.890*** (0.000)	0.736*** (0.002)	-4.717 (0.233)	4.995 (0.268)	2.734 (0.242)	-2.538 (0.519)
Proj. error in fiscal measure		0.251*** (0.000)	0.471*** (0.000)			
Actual fiscal measure				0.559*** (0.000)		-0.512*** (0.000)
Programmed fiscal measure					0.106** (0.018)	0.431*** (0.000)
Wald test (p-value)						0.59
No. of observations	313	287	287	735	445	287
R-squared	0.000	0.057	0.309	0.398	0.417	0.310
Fiscal measure = Broad primary fiscal balance, excluding grants						
Country fixed effects	No	No	Yes	Yes	Yes	Yes
Constant	0.890*** (0.000)	0.599** (0.023)	4.439 (0.207)	-10.465** (0.045)	7.892*** (0.006)	2.849 (0.458)
Proj. error in fiscal measure		0.298*** (0.000)	0.276*** (0.009)			
Actual fiscal measure				0.502*** (0.000)		-0.345*** (0.007)
Programmed fiscal measure					0.112** (0.023)	0.210* (0.090)
Wald test (p-value)						0.33
No. of observations	313	207	207	584	361	207
R-squared	0.000	0.061	0.430	0.453	0.444	0.434

Notes: Projection error is defined as the programmed value minus the realized value. This table presents results for programmed values at the 2-year horizon (see text). "Growth" refers to growth of real GDP in percent. Fiscal measures are in percent of GDP. Parentheses report p-values for the estimated coefficients. * denotes significance at 10 percent; ** at 5 percent; and *** at 1 percent. The Wald test corresponds to the null hypothesis that the sum of the coefficients on the actual and programmed fiscal measure in the last specification equals zero.

Table 7. Regressions for Growth and Fiscal Targets, First Differences

	Dependent variable is the first difference of the growth rate											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Country fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Fiscal balance, broadest coverage (first difference)	0.526*** (0.000)	0.532*** (0.000)										
Primary fiscal balance excluding grants, broadest coverage (first difference)			0.451*** (0.000)	0.458*** (0.000)								
Revenue (first difference)					0.046 (0.658)	0.047 (0.700)						
Revenue, excluding grants (first difference)							0.103 (0.425)	0.106 (0.499)				
Expenditure (first difference)									-0.319*** (0.000)	-0.312*** (0.000)		
Primary expenditure (first difference)											-0.280*** (0.000)	-0.263*** (0.002)
Constant	0.217 (0.425)	0.713 (0.916)	0.180 (0.534)	1.758 (0.786)	0.485 (0.108)	-0.328 (0.960)	0.383 (0.232)	2.306 (0.720)	0.451 (0.121)	1.343 (0.832)	0.488 (0.106)	1.157 (0.855)
No. of observations	609	609	459	459	407	407	349	349	414	414	385	385
R-squared	0.086	0.201	0.088	0.166	0.000	0.066	0.002	0.091	0.047	0.118	0.038	0.126

Notes: The table reports results from regressions of the change in the growth rate on the change in the fiscal measure listed in the first column. "Growth" refers to growth of real GDP in percent. Fiscal measures are in percent of GDP. Parentheses report p-values for the estimated coefficients. * denotes significance at 10 percent; ** at 5 percent; and *** at 1 percent.

Table 8. Instrumental Variable regressions for Growth and Fiscal Targets, First Differences

	Dependent variable is the first difference of the growth rate			
	(1)	(2)	(3)	(4)
Country fixed effects	No	Yes	No	Yes
Fiscal balance, broadest coverage (first difference)	1.274***	1.188***		
	(0.000)	(0.000)		
Primary fiscal balance excluding grants, broadest coverage (first difference)			0.399***	0.418**
			(0.008)	(0.016)
Constant	0.261	2.345	0.735*	2.440
	(0.541)	(0.723)	(0.072)	(0.688)
Test of overidentifying restrictions (p-value)				
Sargan test	0.40	0.28	0.62	0.39
Basmann's test	0.40	0.20	0.62	0.48
No. of observations	268	268	199	199
R-squared		0.141	0.060	0.272

Notes: The table reports the results from instrumental variables regressions of the change in the growth rate on the change in the fiscal balance measure. The actual change in the fiscal balance in year t is instrumented with the change in the fiscal balance programmed in t - 2 and export growth. The test of overidentifying restrictions is the test of the joint hypothesis that the instruments are valid and correctly excluded from the estimated equation. A rejection of the test casts doubt on the validity of the instruments. "Growth" refers to growth of real GDP in percent. Fiscal measures are in percent of GDP. Parentheses report p-values for the estimated coefficients. * denotes significance at 10 percent; ** at 5 percent; and *** at 1 percent.

Table 9. Regressions for Growth and Velocity

	Dependent variable is programmed less actual GDP growth					
	(1)	(2)	(3)	(4)	(5)	(6)
Country fixed effects	No	No	Yes	Yes		
Programmed velocity less actual velocity		0.398**	0.635***			0.643***
		(0.014)	(0.003)			(0.002)
Lagged programmed velocity less actual velocity				0.438*		
				(0.061)		
Programmed velocity					0.645***	
					(0.003)	
Actual velocity					-0.603**	
					(0.013)	
Fiscal balance (broadest available measure)						0.144***
						(0.010)
Constant	0.138	0.185	1.033	4.770**	-2.072	-1.498
	(0.333)	(0.168)	(0.648)	(0.023)	(0.413)	(0.510)
No. of observations	332	279	279	176	279	275
R-squared	0.000	0.021	0.259	0.294	0.259	0.287